

ISSN 2621-5799 (Online)
ISSN 2657-215X (Print)

Asian Institute of Research
Education Quarterly Reviews

Vol. 6, No.1 March 2023



ASIAN INSTITUTE OF RESEARCH
Connecting Scholars Worldwide



Asian Institute of Research
Education Quarterly Reviews
Vol.6, No.1 March 2023

Table of Contents	i
Education Quarterly Reviews Editorial Board	vi
Professional Development of English Language Teachers in Ecuador: Teachers’ Digital Competences for the Hybrid Education Cristina Macías Constante, Jhonny Villafuerte-Holguín	1
Examining the Attitudes of Turkish Students Towards Scientific Field Trips Yılmaz Demir	15
Abbreviations in Homonymy Aynur Humay Bayramli	33
Experiences of Preservice Teachers on Online-Based Microteachings: New Insights for Initial Teacher Education (ITE) Programs Bilge Aslan Altan	55
“Primary School Curriculum is like a Matryoshka”: Teacher Candidates’ Perceptions of the Curriculum Figen Yıldırım	68
A Systematic Review of Empirical Literature with Reference to Financial Derivatives Khurshid Ali Ganai, Khalid Ashraf Chisti, Irshad Ahmad Malik, Numaira Showkat	88
The Investigation and Development of Dong Small Song in Education in Rongjiang County, Guizhou Province, China Shiqi Ping, Sayam Chuangprakhon	102
Factors Influencing Students’ Academic Performance: The Case of Pre-Service Teachers at Dambai College of Education in Ghana Priscilla Commey-Mintah, Antwiwaa Opoku, Saviour Kwadwo Kudjordji, Frank Awuah	111
Student Retention in Distance Learning During the Covid-19 Crisis in Indonesia: Are We Disappointing Them? Nevy Farista Aristin, Agus Purnomo, Joko Sayono, Muhammad Aliman	125
Investigation of Secondary School Student's Value Perceptions and Attitudes Regarding to Physical Education and Sports Lesson Ahmet Temel, Hüdaverdi Mamak	155
Opinions of Arabic Prep Class Students on the use of YouTube in Teaching Arabic Gürkan Dağbaşı, Yasin Murat Demir, Murat Özcan	152

Publication Outcomes Doctoral Dissertations in Teaching Turkish as a Foreign Language Field Bayram Özbal	159
Parameters Affecting Training Effectiveness: A Study of Wastewater Treatment Training in Politeknik Negeri Bandung Herawati Budiastuti, Dhyna Analyses Trirahayu, Tifa Paramitha, Bambang Soeswanto, Endang Kusumawati, Retno Indarti, Emmanuela Maria Widyanti, Pratap Pullammanappallil	168
Examination of Yao Henglu's Artistic Development and the Influence on Chinese Contemporary Music Composition Song Kexin, Phiphat Sornyai	178
Learner's Perception in Using Social Media for Foreign Languages Acquisition Shorouk Mohamed Farag Mohamed Aboudahr, Abderrahim Benlahcene	191
An Analysis of Social Studies Teachers' Opinions on Distance Education After Covid-19 Pandemic Murat Tartuk	198
The Role of Problem Formulation in Problem-Based Learning to Improve the Students' Curiosity Nyoto Suseno, Arif Rahman Aththyby, Purwiro Harjati, Ratini, Dedi Turmudi	214
Outcome Based Education (OBE) Based Vocational Education Model in the Era of Artificial Intelligence (AI) Constantinus Rudy Prihantoro	228
An Overview of Arabic Translation and Interpreting Programs in Turkish Higher Education Gürkan Dağbaşı, Murat Özcan, Yasin Murat Demir	241
Investigation of the Historical Development and Knowledge Guidelines of Contemporary Guangxi Vocal Music in China Pang Yi, Jarernchai Chonpairot, Warakorn Seeyo	250
The Process of Transferring Knowledge through Grand Songs Among the Dong Ethnic Group in Southeast Guizhou, China Hang Cao, Narongruch Woramitmaitree	262
The Effect of Lego Robotics Coding on Primary School Students' Academic Achievement and Attitudes of Science Orçun Bozkurt, N. G. Pasabeyoglu	271

Systematic Review of Smart Classroom for Hard Skills Training in Augmented and Virtual Reality Environments	280
Thiti Jantakun, Kitsadaporn Jantakun, Thada Jantakoon	
Knowledge of the Historical and Contemporary Status of Dong Ethnic Group's "Da Ge" Folk Music in Liuzhou, China	295
Hengbin Wu, Peerapong Sensai, Akapong Phulaiyaw	
A Study on the Development of Henan Zhuizi Folk Music Knowledge in Kaifeng, Henan Province, China	316
Chao Ren, Awirut Thotham	
Knowledge of the Historical Development of Chinese Xiansuo Folk Music in Qinghai Province's Hehuang District	317
Gang Chen, Peerapong Sensai, Warakorn Seeyo	
A Study of Yuediao Folk Music Knowledge Development in Zhoukou, Henan Province, China	337
Lei Li, Awirut Thotham	
Influencing Factors on Four Chinese Grand Theaters' Brand Image	351
Zhexin Li, Sarana Photchanachan	
The Investigation of the Pre-service Social Studies Teachers Perceptions of Self-Efficacy on the Digital Literacy Skills	361
Sercan Kocaer, Mehmet Aydın	
A Correlational Study of Happiness and Self-Determination among Vietnamese Students Across Educational Levels	376
Lam Huy Phuong, Pratchayapong Yasri	
The Effect of Motivation to Participate in Sports on Happiness Level in University Students	388
Tuncay Öktem, Yunus Emre Çingöz	
An Investigation of the Piano Lessons Repertoire Applied in the Music Education Departments Based on the Views of Teaching Instructors	395
Hakan Koparanoğlu, Şirin Akbulut Demirci	
Exploring the Recontextualisation of Biotechnological Knowledge in the Plant Biotechnology Course: A Bernsteinian Analysis	416
Mafunase Mwale	
Use of Informal Learning Environments in Turkish Language Teaching	429
Rasit Koc	

A Teaching Note on Negligence: Palsgraf Revisited	436
Richard J. Hunter, Jr, John H. Shannon, Henry J. Amoroso	
Investigation of Trait Anxiety and Death Anxiety Experienced in the Covid 19 Pandemic in Terms of Physical Activity Status	452
Deniz Bedir, Sevinc Namli	
Paradigms for Contextualizing Competency Based Curriculum in Africa: Inferences from the OECD Countries	464
Yasin Mohamed Gulled	
A Teaching Note on Antitrust and Business	476
Richard J. Hunter, Jr., John H. Shannon, Henry J. Amoroso	
Contributions of Digital Competencies toward the Speaking Skills in English Language Classes in Ecuadorian Elementary Schools	490
Juan Pin Mero, Marcos Saltos Mendoza, Jhonny Villafuerte-Holguín	
Teaching and Promoting Independent Use of Reading Strategies in the Middle Schools	504
Yusuf Uyar, Murat Özbay	
Translation Equivalence of Hyperbolic Expression used in iPhone 14, iPhone 14 Pro, and iPhone SE 2022 Official Webpages	515
Qotrunnada Sabila, Jumanto Jumanto, Rahmanti Asmarani	
Redundancy and Economy as a Dialectical Manifestation of Language Units	529
Isayeva Safura Ilgar Gizi	
The Investigation of Turkish Teacher Candidates' Attitudes to Digital Reading and Time of Printed and Digital Reading	537
Selvi Demir	
The Story of the Bow and Arrow: Through the Eyes of Children	555
Aylin Özge Pekel, Esra Soy, Nagihan Kırıkoglu, Hacı Ahmet Pekel	
Learning: An Evolutionary Perspective	563
André Petitat	
Relational Victimisation and the Psychosocial Maladjustment of Adolescents in Secondary Schools in Cameroon	582
Shien Vera, Lilian F. Wiisahnyuy, Joseph Lah Lo-oh	
Implementation of Inclusive Education in Ghanaian Colleges of Education: Factors that Influence the Tutors' Perception	592
Samuel Nti-Adarkwah, Philip Boateng, Jonathan Kwame Mensah, Eric Appiah-Kubi	

Teaching Notes – Employment Discrimination
Richard J. Hunter., Jr, John H. Shannon, Henry J. Amoroso

605

Education Quarterly Reviews Editorial Board

Editor-In-Chief

Prof. dr. Remigiusz Kijak (Poland)

Editorial Board

Prof. Patrizia Ghislandi (Italy)

Prof. Ratko Pavlović (Bosnia and Herzegovina)

Prof. Fátima Pereira da Silva (Portugal)

Assoc. Prof. Ryan V. Dio (Philippines)

Assoc. Prof. Elena Savu (Romania)

Dr. Vasiliki Brinia (Greece)

Assoc. Prof. Iosif Fragkoulis (Greece)

Assoc. Prof. Daniela Maria Cretu (Romania)

Prof. Panagiotis Vlamos (Greece)

José Alberto Lencastre, Ph.D. (Portugal)

Dibakar Sarangi, M Ed, M Phil, Ph.D (India)

Assistant Prof. Ching-chung Guey (Taiwan)

Dr. Veronica Odiri Amatori (Nigeria)

Assoc. Prof. Ali S.M. Al-Issa (Oman)

Dr. Siti Noor Binti Ismail (Malaysia)

Dr. Man Fung LO (Hong Kong)

Dr. Froilan D. MOBO (Philippines)

Manjet Kaur Mehar, Ph.D (Malaysia)

Jonathan Adedayo Odukoya, Ph.D (Nigeria)

Dr. Ashraf Atta Mohamed Safein Salem (Egypt)

Assoc. Prof. Erlane K Ghani (Malaysia)

Dr. Öznur ATAŞ AKDEMİR (Turkey)

Shamil Sheymardanov (Russia)

Alis bin Puteh (Malaysia)

Professional Development of English Language Teachers in Ecuador: Teachers' Digital Competences for the Hybrid Education

Cristina Macías Constante¹, Jhonny Villafuerte-Holguín²

¹ Universidad Laica Eloy Alfaro de Manabí. Member of the research projects: (1) Comprensión Lectora y Escritura Académica; (2) Desarrollo profesional de docentes de los idiomas nacionales y extranjeros de la zona 4 de Ecuador 2022-2024. Email: e1315246122@live.ulead.edu.ec

² Universidad Laica Eloy Alfaro de Manabí, Leader of the research project: Comprensión Lectora y Escritura Académica. Coordinator of "Red de Investigación en temas de Lectura y Escritura Académica - RED LEA; and research team "Innovaciones Pedagógicas para el Desarrollo Sostenible." Email: Jhonny.villafuerte@uleam.edu.ec

Abstract

This work aims to socialize an educational intervention to strengthen the digital skills of primary education teachers in the province of Manabí in Ecuador. It resorts to the socio-criticism paradigm and a mixed research approach to study the variable digital competencies of English language teachers from Manabí, Ecuador. The main instrument used is the European Digital Competences Framework, adjusted to the cultural conditions of Ecuador in formats of interviews and contextualized observation. The results show the participants' self-assessment of digital competence, the presentation of an educational intervention aimed at strengthening digital competence, and the observations of the changes in the participants' performance in digital competencies. It concludes that the participants managed to improve digital competence through a training process using educational platforms and computer applications for the planning and execution of school activities.

Keywords: Digital Competencies, Professional Development, Education Innovation, English Language Instruction

1. Introduction

Teachers have the necessity to strengthen their digital competences to improve their work in the current era. However, the exploration of instructors' capabilities living in the province of Manabí in Ecuador, shows a poor level in the development of digital competences, situation that should be research deeper to determine the key routes for helping instructors to change such situation.

Quiroz et al. (2016, p. 55) affirm that "it is necessary that teachers develop digital competences for improving teaching and learning experiences, besides promoting learners' digital competences' development." However,

Valdivieso et al. (2016) stated that “students, as teachers, are far from taking advantage of Information and Communication Technologies (ICT) in educational process. They relegate the use of ICT to social or entertainment activities” (p. 58).

In addition, digital Literacy in the educational context “involves digital media, open digital sources, digital communication, and critical thinking” (Tejedor et al., 2020, p.12). Thus, Björk et al. (2020) argued that Information and Communication Technology became a critical component for the permanent professional development of English language teachers. Nevertheless, Vázquez et al. (2021) argued that, despite the efforts made by educational institutions to improve the digital competencies in the English language teaching practice, such adoption is often not well achieved. In consequence, it is essential to promote the teachers’ digital competencies improvement.

Therefore, this paper is part of the results of the research project titled: “*Desarrollo profesional de docentes de los idiomas nacionales y extranjeros de la zona 4 de Ecuador 2022-2024*” of the University Laica Eloy Alfaro de Manabí – Ecuador. It focused on a case study of a group of English teachers from the province of Manabí in Ecuador. In addition, this research was supported by the ULEAM research team: “*Innovación de las Pedagogías para el Desarrollo Sostenible*” and the “Research network for studying topics related to reaching comprehension and academic writing” (Red-LEA).

The authors' main expectation is to contribute to improving English language instruction in Ecuador, determining a route for strengthening teachers' digital competencies, and introducing an educational intervention focused on the efficient use of ICT. The research begins with a literature review describing concepts, definitions, and previous experiences related to developing digital competencies. The research methodology used is mixed and takes the opinions of 21 English language teachers with different levels of digital competencies domain. The research questions that guide this study are:

1. What is the participants' self-perception of their digital competency level?
2. What are the progress and difficulties participants reported during the educational intervention?
3. What are the changes reported in participants' digital competencies?

This research aim is to socialize an educational intervention to strengthen the digital competencies of English teachers for hybrid education.

2. Literature review

2.1. Information and communication technology and Digital Competences

Technology can provide education with aggregate communication, learning resources, and entertainment services. Thus, information and Communication Technologies (ICT) are elements inserted into people's daily life; part of them is in one of the essential socialization agents, the school. Even though information technologies have yet to start being directed toward education, little by little, they have become an effective solution to several delimitations that we had before. Thus, Ratheeswari (2018) indicates that “ICT use in the classroom is important for giving students opportunities to learn and apply the required 21st-century skills” (p.45). Also, Liesa-Orús et al. (2020) remark that “some quality teaching-learning processes in Education is practically unthinkable without the use of technology, especially because of its impact in developing the necessary skills and abilities for the 21st century” (p.1).

Thus Area-Moreira et al. (2016, p.21) stated “incorporation (ICTs) into the classroom has been done under an instrumental use of the same and, therefore, maintaining a conventional type of educational culture.” Because ICTs not only help to know the manipulation of technology, but it also provides a large field of information for learners and teachers. In this way the contribution in cultural backgrounds is massive and necessary for a globalized world, Liesa-Orús et al. (2020) adds “from a practical viewpoint, this must be seen in the acquisition of skills that consolidate significant learning that in turn allows inclusion of science, innovation and technology into education.” (p.2).

In addition, ICTs have become indispensable tools for dealing with different societal needs through a transformation of educational practices (Del Cerro Velasquez et al., 2018). Thus, educational institutions continue their reinvention process in this new area. Aguiar et al. (2019) argued that ICT integration, such as competence, proactive incorporation, and motivation, also pointed out that these are essential aspects that allow advanced students to acquire educational quality in a new way of learning through ICTs.

Concerning the teachers' digital competencies, Seufert & Meier (2016) stated that "Digital transformation currently is one of the major challenges in all industries. It embraces the realignment of technologies and business models to engage customers more effectively at every touchpoint in the customer experience lifecycle" (p.27). Its use can be among casual or everyday conversations or even in educational processes, intercommunication, or new inventions; after its evolution, there are currently scales and ways to know people's skills in this field and other sciences, such as education.

In addition, Lawrence et al. (2018) affirmed that the adoption and integration of ICT into the teaching and learning process provides teachers and students with better opportunities for working, expanding the educational field, facilitating teaching processes, innovating learning paths, and incorporating the thinking of digital natives.

The European Council (2018) stated that the digital era has managed to "involve a safe and critical use of information society technologies for work, leisure, and communication purposes" (p. 9). As well as Tomczyk (2018) argued that "digital competencies are one of the most basic skills required in current times [...] Life quality is being better, owing to data access thanks to digital and technology services which provide many useful online activities" (p.1).

The immersion of ICT in the educational panorama walks side by side with the new generations of teachers and students, considering the educational community in a time of change from the old paradigms to the future. The ICT and teachers' digital competences in combination can support the learning process adapting the contents, screens, and learning speeds to the students' necessities (Villafuerte, 2022).

2.2. Digital Competence and hybrid education

Digital Competence Framework for Educators (educational context) or DigCompuEdu was published at the end of 2017 by Redecker & Punie (2017), to know in a practical way the skills that teachers have to be able to efficiently use digital tools considering the fact of the new generation of digital natives, that is, the current and future students. Innovation and skill development are constantly on the agenda of this digital competency scale, since the inclusion of ICTs in the curriculum is a complex issue because it involves multi-literacy; specific training is required, which implies enabling teachers to take advantage of the potential of ICTs for teacher management (Valdivieso et al., 2016, p. 58).

The "result of DigCompuEdu is a consensus on the main areas and elements of digital teaching competence, which follows a progressive logic in each competence area. It is a model of digital competence for trainers" (Cabero-Almenara et al., 2020, p.218). It is developed through standardized tests where they are evaluated in competence areas such as professional commitment, using digital technologies for communication, collaboration and professional development; digital resources, sourcing, creating and sharing digital resources; teaching and learning, managing and orchestrating the use of digital technologies in teaching and learning; assessment, using digital technologies and strategies to enhance assessment; empowering learners, using digital technologies to enhance inclusion, personalization and learners' active engagement; facilitating learners' digital competence, enabling learners to creatively and responsibly use digital technologies for information, communication, content creation, wellbeing and problem-solving (Muammar, 2022).

In addition, the qualifications handled by this framework are: A1 for *newcomer* who has very little experience and contact with educational technology; A2 for *explorer* who has little contact with educational technology; B1 for *explorer* who experiments with educational technology and reflect on its suitability for different educational contexts; B2 for *expert* who uses a wide range of educational technologies with safety, confidence and creativity; C1 for *leader* who is able to adapt to your needs the different resources, strategies and knowledge at your disposal; C2 for *pioneer* where questions contemporary digital and pedagogical practices, of which they themselves are experts.

2.3. Digital Competencies of English language Teachers.

The knowledge and use of digital competencies in education has a wide panorama and path to follow, understanding that, technology is not static, teaching and application will be progressive.

Therefore, digital competences as a whole to ICT must be analyzed, examined and chosen according to the context of each area of knowledge, that is, the area of Spanish literature should get applications, software or others that fit its reality and need, as could the area of Mathematics, or the area of foreign language: English, the latter must be analyzed in a dual way since the more non-linguistic information contents are interconnected with the other subjects according to the level or sublevel, without forgetting the importance of reliable and safe software for a good teaching of English as a second language

However, Rodriguez et al. (2017) argued that “ICT in the English classroom brings many benefits for the development of language skills, and the development of higher thinking skills, as well as contributes to the motivation of students in the meaningful learning of a second language.” (p.54), since, the interaction with digital natives, the teaching-learning process of a non-native language must be innovative and interesting, Hatlevik (2018) affirmed that ICTs have “integrated and central element of modern life, and its rapid emergence is changing the execution and organization of work and learning” (p.1). Also, Hatlevik (2018) states “digital technology is also important for schools, and hence for teachers’ working days.” (p.1).

The English teacher must have among his ideals a new way of teaching, innovative and inspiring for his students, using the contemporary language that is technology at its best, Martinez (2018) stated that it is necessary to know and analyze the continuing education of teachers and their interests regarding innovation in the classroom. Furthermore, that this process is synthesized in the following three objectives: 1) Analyze teachers' conceptions about methodological innovation from their professional experience; 2) Identify the main resources and materials they use for their teacher training; 3) Detect the difficulties to implement innovations in the classrooms" (p. 21), therefore, the contemporary educational environment demands that the level of digital competencies of English teachers increase and evolve.

At this point, Tomczyk (2018) remarked “Today’s generation of young Internet users are mainly digital natives who do not know life without new technologies.” (p.1), thus most of English teachers have to reinvent the language learning process using ICTs and demonstrating their knowledge to apply those digital and technological tools.

Among the previous studies related to this research, Hockly (2016) argued that an umbrella term for these skills and competencies, digital literacies, and the concept of being digitally literate refers to our ability to effectively make use of the technologies at people’s disposal technical skills, but perhaps more importantly, an awareness of the social practices that surround the appropriate use of new technologies. In addition, Tang & Chaw (2016) stated there are possibilities of poor training in digital competencies or teachers’ technology poor knowledge, locating teachers’ competencies and skills at a critical point in present and future education. This barrier of poor knowledge of digital competencies became a crucial factor in determining the success of the blended learning environment.”

On the other hand, teachers need more support for learning to develop digital competencies in some cases, especially in countries that do not have complete or partial development. It involves disadvantages in the learning process of students. Pegrum in Akayoğlu et al. (2020) argued that the lack of appropriate literacies barely exists in digital culture. At the same time, Guzman and Nussbaum in Falloon (2020) emphasized the need to prepare teachers to work effectively and productively in current schools.

Finally, according to Mynařiková et al. (2020), teachers' training fails to support the integration of ICTs into schools, create digital infrastructure, and support digital literacy and competencies of students and teachers. Thus, supporting teachers' practices and learning in technology fields should be a priority to improve the educational system in the real sense.

3. Methodology

This work used the criticism paradigm and a mixed research approach to study the variable digital competencies of English language teachers from Manabí, Ecuador. In addition, the nature of this research was exploratory, allowing contextual observation, surveying, and interviews.

The participant's sample consisted of 21 EFL teachers (40% male and 60% female, ages between 27 to 42 years) who worked in six high schools.

The techniques and instruments for the collection of data were:

The main instrument used in this research was the European Digital Competences Framework (EU Science HUB, 2021), which consists of 13 questions divided into four categories (a) Communication and Collaboration, (b) Information and Literacy, (3) Digital Content Creation, and (4) Problem Resolution. The research team used the EU Science HUB survey, observation checklist, and interview formats.

Survey questionnaire. – The questionnaire consisted in 10 questions associated with the participants' digital competences and their use of electronic platforms and applications for instruction. The instrument was examined by a panel of experts with more than 5 years of experience on the fields of EFL instruction, educational research, and psychology. All they affiliated to the University Laica Eloy Alfaro de Manabí in Ecuador. The panel of experts recommended to reduce the number of questions from 15 to 10. To revise the questions' language structure and writing style to warrant the participants understanding. The survey was executed using a google form.

Contextual observation checking list. – The observations process allowed to collect data about participants level of knowledge of the digital competences for educational planning and teaching in online English classes. The contextual observation checking list consisted of 4 categories (1) denote competence in the field of virtual community, (2) digital culture, (3) digital identity, and (4) interactive knowledge. The items concerning the participants use of ICT and digital competences during their routines at school. The instrument was examined by a panel of experts in the fields of EFL instruction and educational management. All they were affiliated to the University Laica Eloy Alfaro de Manabí in Ecuador. They recommended to revise the language expressions considering the idiomatic differences between Spanish language of the original version of the EU Science HUB to castellan language used in Ecuador. The process of observation was executed by the research team during the educational intervention for 8 weeks.

Interview guide. – The interview was applied to English language teachers to collect data concerning to their self-knowledge about their digital competences, the contribution of digital competences to their professional development in the classroom, and their personal perceptions about the educational intervention executed in this research project.

4. Process:

This research process consisted of the following stages:

Stage 1: Selection of participants

Stage 2: Adaptation of the instrument EU DigCompe to local context

Stage 3: Execution of instruments for data collection.

The observation form was used during the English teachers interactions

Stage 4: Statistic analysis and categories analysis

Stage 5: Writing of the research inform

Educational Intervention:

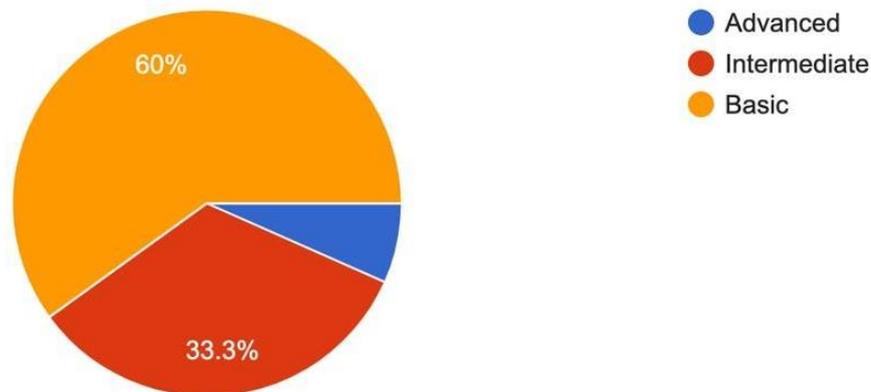
This project had an educational intervention that lasted three months, which ended in 2021. The project had 16 teachers who actively participated in the entire process, they had many doubts and difficulties about the learning platforms to teach online. These classes were taught from a basic level that had as topics how to enter each website, how to register, even how to activate the tools.

5. Results

The results presentation follows the logic of the research questions.

5.1. Participants' self-perception of their digital competency level

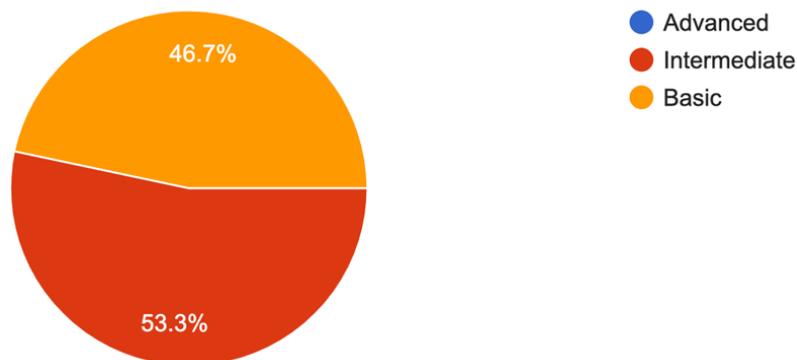
The graphic 1 shows the participants' competences level results obtained in the survey.



Graphic 1: EFL teachers' level of digital competencies

Results show that the 60% of participants considers having a basic level of digital competence development. The 33.3% declared having intermediate level thus, they can moderately produce at a digital level, finally a minority of 6.7% of those surveyed indicate that they have an advanced level of digital competences development. Thus, they can create their own resources in digital media.

The graphic 2 shows how empowered the participants feel to contribute their knowledge through digital tools results obtained in the survey.



Graphic 2: EFL teachers empowered to contribute their knowledge through digital tools level.

Results show that 53.3% of participants consider being able at an intermediate level to contribute their knowledge through digital tools to students. 46.7% of participants declared having a fundamental level. Finally, 0% of those surveyed indicate that they have an advanced level of empowerment to accomplish this task.

5.2. Participants' use of digital competency in the instructional process

In the table 2 appears the results of the contextual observation executed.

Table 1: Participants' digital competences observed in instructional process

Category 1: Digital competence in the field of virtual community				
N°	Parameters	Yes	No	Sometimes
01	Does he/she write and send emails.	9	1	2
02	Does he/she chat through any kind of app.	8	0	4
03	Does he/she participate in any kind of virtual educative forum.	5	3	4
04	Participate in any kind of social media.	7	1	4
05	Design pedagogical activities through forums, blogs, wikis, etc..	8	2	2
Category 2: Digital competence in the field of digital culture				
01	Does he/she look for information using keywords.	6	2	4
02	Does he/she use different search engines.	2	1	9
03	Distinguish between scientific information and ordinary information.	11	0	1
04	Select information according to your specific needs (filter information)	1	0	11
05	Organize "favorites" by educational topics.	0	8	4
06	Stores the information in folders.	11	1	0
07	Save files and information in the cloud.	6	4	1
08	Use productivity apps like word processors, spreadsheets, and presentation tools.	8	0	4
Category 3: Digital competence and digital identity				
01	Make use of social networks or other virtual communication media according to your interests and needs. (Build a profile that meets your needs).	8	0	4
02	Constantly update and review the publications made and made by others on social networks, taking care of their digital image.	2	1	9
03	It publishes documents, images, videos, or other messages, its own or of others, identifying the author and respecting the licenses of use.	6	0	6
Category 4: Digital competence for interactive knowledge management				
01	It proposes the development of collaborative projects with the use of ICT.	2	2	8
02	Use simulators, videos, audios, or other digital resources to represent the real world.	3	5	4

Source: Contextual observation (2021).

The items declared most frequently by the participants are:

Category 1, Digital competence in the virtual community, is writing and sending emails. Category 2 Digital competence in digital culture are: 3. Distinguish between scientific and ordinary information, and 6. Store the information in folders. Category 3: Digital competence and digital identity. Use social networks or other virtual communication media according to personal interests and needs; and category 4. Digital competence for interactive knowledge management.

5.3. Participants' progress and difficulties in improving digital competences

According to the information collected in the contextual observation during the educational intervention in this research project, teachers reported the following progress and difficulties in improving their digital competencies in using informatics applications.

Table 2: Participants' progress and difficulties on the digital competences

Topics of educational intervention	Participants achievement				Observations
	100-75%	74-51%	50-26%	25-0%	
Using of PADLET	X				Teachers did not have difficulties to understand the tools that Padlet provides, they were easy to manage.

Using of CANVA	X	Teachers had difficulties to understand how Canva allows to add pictures and videos.
Using of WORDWALL	X	Teachers did not have difficulties to understand the tools and options that word wall provides to have interactive lessons.
Using of EDUCAPLAY	X	Teachers had difficulties to generate "Lavel" to Educaplay platform allows to success their activities.
Using of KAHOOT	X	Teachers had difficulties to log in to Kahoot through their email.
Using of QUIZLET	X	Teachers did not have difficulties to log in and understand the options that Quilezt provides.

Source: Contextual observations (2021)

5.4. Changes in the participants' digital competences

Table 3 shows the participants' voices concerning the changes in their digital competency levels compared to before and after the educational intervention.

Table 3: Changes in the participants' competences before and after the educational competence

Pretest	Posttest	Subcategories
Category 1: Communication and collaboration		
P1_00: 01: 20 <i>"ICTs are very important in the learning process and the use of ICTs also helps us at this stage of the pandemic not only to make them known but also to generate knowledge."</i>	P1_00: 01: 00 <i>"Nowadays, ICTs are the most important thing that teachers need to know to apply in their lessons, students ask for teachers more ability to manage this technology. The pandemic helped us to understand the educational process needed to transcend."</i>	Good to communicate in digital environments
P2_00:01:52 <i>"Everything is a teaching and learning process, both for the teacher and the student, especially for taking into account a topic we will look for and this allows us to gain information."</i>	P2_00: 01: 22 <i>"Using digital resources that communication between teacher and students have been getting better, this generation understand concepts and things in a different way."</i>	Sharing resources through online tools
P3_00: 01: 11 <i>"The ICT within performing the teacher helps us too much, if we had not had this tool as important as we were now at the moment, it could not advance what education is."</i>	P3_00: 0: 45 <i>"Education became in a digital process that we as teacher have to be conscious of ICTs are the key in our teaching job."</i>	Evaluate its purpose and relevance
<i>"It is a great ally of the teacher."</i>		
P2_00: 08: 30 <i>"I like self-training, I have tried to investigate, ask, practice, make mistakes and learn to use them with the same students ... I do not feel disabled in the use, I try to adapt it as a teaching tool."</i>	P2_00: 08: 30 <i>After researching for a long time, I have been able to realize that self-training is a great way to focus on teaching tools.</i>	Communicate in digital environments
Category 2: Information and literacy		

P1_00: 06: 22 “Google form presents many more possibilities so that one can play much more with the question and how he wants to know the learning of the students.”	P1_00: 02: 31 “It’s obviously that Google form presents many more possibilities so that one can play much more with the question and how he wants to know the learning of the students.”	Integrate and rework previous knowledge and content
P2_00: 08: 10 “I have not done a test yet, in the time that we worked in person either, but we test every day by observation we are already testing the boys.” “But the evaluation through observation has been done through our Canvas platform, but not yet written.”	P2_00: 03: 00 “I already have done a test, in the time that we worked in person either, but we test every day by observation we are already testing the boys.” We can use another platform like Edmodo, worldwide and Educaplay for our ss.	Analyse digital informational
P3_00: 06: 37 “I have not had the opportunity yet, but I am already training to test, however I would like that someone helps me to understand better the process of using digital resources”	P3_00: 03: 27 “Nowadays I already have the opportunity to create tests and put in practice with my ss and observe the washback at the end of the lesson, nonetheless I would like that someone helps me to understand better the process of using digital resources”	Identify digital information
P1_00: 07: 15 “Not that ICT favors research, but that it teaches students what research is and what the steps are to find something.”	P3_00: 07: 54 Although it is true, it has been confirmed that tics are a great support for the investigation.	Identify digital information
Category 3: Problem resolution		
P1_00: 07: 15 “Totally, because not all the skills and content that one wants to develop with the students with any ICT and TAC ... everything will depend on the subject with which one goes to work.”	P1_00:07:15 Each subject has a way of being taught, that is why you must investigate the different tics that could be used.	Identify digital needs and resources
P2_00: 08: 30 “Yes, you need help from your parents, but there are kids who are batteries because they already know which application will tell them the answers.” “But be on the lookout because it usually opens pages that are not.”	P4_00: 06: 04 With the passing of the weeks, I was able to realize that to do something well using ITC, you should always practice having experience.	Make decisions when choosing the appropriate digital tool
Category 4: Digital content creation.		
P3_00: 07: 36 “I do. Looking for videos to project to them, using PowerPoint. “Remember that children are very visual and even colors, we must put vivid colors, videos with a good resolution.”	P3_00: 06: 25 “Of course. Currently I use them more than time ago. Even I can work with some video games or interactive games online, in this way children are focused more time”	Integrate and rework previous knowledge and content

<p><i>P3_00: 8: 26 “They catch their attention, I leave a task to check a link, but it does not leave them with just that but look for extra and updated information. Yes, I consider it is very successful.”</i></p>	<p><i>P3_00: 9: 12 “All the time! Every resource in education is good, and ICTs are being the best in this time, students know how to use these tools, and they are interested.”</i></p>	<p>Integrate and rework previous knowledge and content</p>
---	--	--

Source: Participants' interview (2022)

6. Discussion

Based on the literature review, the authors ratify that the practical use of digital competencies in the educational process is relevant to improve education in Ecuador. Thus, to progress in teaching, therefore, Björk et al. (2020) argue that "Information and communication technology has become an essential component of initial teacher education in the continuous professional development of practicing teachers. The development of professional digital competence is emerging as an essential part of teacher education. In this way, the thesis is that education is progressive and must prevail in its fundamental values, quality, and warm learning environments.

The authors found harmony with the position of Ratheeswari (2018) when he stated that "ICT use in the classroom is important for giving students opportunities to learn and apply the required 21st-century skills" (p.45); therefore, Pin et al. (2021) ratified that digital competencies are simple abilities but reference like English or mathematics, thus being a necessity in this century.

Consequently, the practice and training in using ICTs and digital skills are fundamental since they harmonize the teaching and learning process for the students of the new digital native generation. For their part, Mynařriková et al. (2020) stated that "teacher training and literacy in digital competencies and ICTs fail especially in supporting the integration of ICTs into schools, creating digital infrastructure and supporting digital literacy and competencies of students and teachers" (p. 2). Based on the results obtained in this research, the team ratified that digital competencies and access to technological devices are a priority throughout professional educational practice today.

Concerning the results obtained in this research, the four categories evaluated in the participants' digital competencies showed that teachers shared materials that collaborate with the learning of students online. Considering education's recent changes, digital competencies and technology access are two fundamental components in the new teaching profile.

The contextual observation allowed the researcher to understand that teachers use components of the digital field, projects, and didactic material and present adequate knowledge of using programs or informatics applications. Teachers do not present difficulties in solving problems that can lead the minimal troubles during virtual classes. Therefore, the teacher could continue the lessons through virtual means with no problem.

The author found that the PADLET, WORD WORLD, and QUIZLET were the most accepted application for the participants. They demonstrate an outstanding level for educational purposes. In addition, the EDUCAPLAY application reported the poorest level of acceptance for the participants. They needed help using the application for educational purposes.

Finally, the interview allowed the researchers to determine that teachers' ICT knowledge needed to be improved. Only some of the options offered by ICTs and their knowledge of them have been developed or explored by the participants, and emerging confidence in their knowledge of ICT usage. It is evident in the following participants' expressions:

P4_00: 06: 04 With the passing of the weeks, I was able to realize that to do something well using ITC, you should always practice having experience.

P3_00: 03: 27 “Nowadays I already have the opportunity to create tests and put in practice with my ss and observe the washback at the end of the lesson, nonetheless I would like that someone helps me to understand better the process of using digital resources”

In addition, it demonstrated that participants' digital skills are beginners according to the current needs in the educational context, becoming a determining factor in their professional development as English teachers.

With the rapid changes in the education paradigm, it is no secret that innovation within this field flows without precedent. Therefore, English teachers must delve into deepening their digital skills for use in the development of the lessons. The differences between times have caused a significant difference between what they offer and what the circumstances require; therefore, these skills will serve everywhere, as in their tutorials and English seminars.

This study of digital competencies in the educational landscape needs to show more use of digital resources and tools in education in Manta. Even though there is an environment of virtual classes, this causes the neglect of children and young people who seek, between the minutes of the lessons, something that connects them with their chronology. Therefore, digital natives are another fundamental and evident reason for English teachers to become involved in learning and developing digital competencies for using it. Their empowerment will place a change in educational practice that will add to the new era of teaching a foreign language in a Spanish-speaking country. The management of courses or seminars to help develop these competencies have been progressively increasing since the change from face-to-face to virtual classes. However, more is needed for the teachers of Ecuador to feel confident and capable of their professional development.

7. Conclusions

Based on the contrast of the specialized literature with the results of the empirical stage of this research, the authors declare that fulfilled 100% of the aim proposed for this study, which is: This work aims to socialize an educational intervention to strengthen the digital skills of primary education teachers in the province of Manabí in Ecuador. The research included an educational intervention to strengthen the digital skills of 21 participants, teachers from six different educational centers in the province of Manabí in Ecuador. It concluded that the most significant achievement is the increase in the participants' confidence in their knowledge of using Information and communication technologies in teaching activities, followed by the use of computer applications that have allowed participants to improve online learning environments. The changes in digital skills are significant at the discretion of the participants, managing to optimize Internet browsing, using electronic devices to produce content to support explanations in class, and doing language practice with students. The research team considers that the progress in improving the participants' digital skills is also due to the need to respond to the requirements of the environment in pandemic conditions. The study's weakness lies in the sample size, which does not allow for generalizations. However, the main contribution of this work lies in the introduction of a pertinent pedagogical proposal. Authors invite researchers to work on the research line: Strengthen the digital skills of primary education teachers worldwide.

References

- Aguiar, B., Velázquez, R., & Aguiar, J. (2019). Innovación docente y empleo de las TIC en la Educación Superior [Teaching innovation and use of ICT in Higher Education.]. *Revista espacios*, 40(2), 1-8. <https://www.revistaespacios.com/a19v40n02/a19v40n02p08.pdf> (30de mayo de 2022)
- Ahumada Yepes, Y. D. C., Fandiño Jiménez, R. D. C., & Torres Osorio, A. (2018). La plataforma Edmodo como estrategia pedagógica para fortalecer el pensamiento aleatorio [The Edmodo platform as a pedagogical strategy to strengthen random thinking.]. Master's thesis, Universidad del Norte de Ecuador. (18.oct.2021).
- Akayoglu, S., Satar, H. M., Dikilitas, K., Cirit, N. C., & Korkmazgil, S. (2020). Digital literacy practices of Turkish pre-service EFL teachers. *Australasian Journal of Educational Technology*, 36(1), 85–97. DOI: <https://doi.org/10.14742/ajet.4711>
- Almerich, G., Orellana, N., Suárez, J., & Díaz, I. (2016). Competencias de los docentes en tecnologías de la información y la comunicación: un enfoque estructural. [Teachers' competencies in information and communication technologies: a structural approach.] *ELSEVIER*, 110-125. DOI: <https://doi.org/10.1016/j.compedu.2016.05.002>
- Area-Moreira, M., Hernández-Rivero, V., & Sosa-Alonso, J. (2016). Models of educational integration of ICTs in the classroom. [Modelos de integración didáctica de las TIC en el aula]. *Comunicar*, 47(1) 79-87. Doi: <https://doi.org/10.3916/C47-2016-08>
- Arrosagaray, M.V., González-Peiteado, M., Pino-Juste, M., & Rodríguez-López, B. (2019). A comparative study of Spanish adult students' attitudes to ICT in classroom, blended and distance language learning modes. *Comput. Educ.*, 134(1),31-40. DOI: <https://doi.org/10.1016/j.compedu.2019.01.016>

- Gudmundsdottir, Gassó, Rubio, Hatlevik. (2020). Student teachers' responsible use of ICT: Examining two samples in Spain and Norway. *Computers & Education*, 152. DOI: <https://doi.org/10.1016/j.compedu.2020.103877>
- Cabero-Almenara, J., & Palacios-Rodríguez, A. (2020). Marco Europeo de Competencia Digital Docente DigCompEdu y cuestionario DigCompEdu Check-In [DigCompEdu European Digital Competence Framework for Teachers and DigCompEdu Check-In Questionnaire]. *EDMETIC, Revista de Educación Mediática y TIC*, 9(1), 213-234. Doi: <https://doi.org/10.21071/edmetic.v9i1.12462>
- Carretero Gomez, S., Vuorikari, R. and Punie, Y., DigComp 2.1: The Digital Competence Framework for Citizens with eight proficiency levels and examples of use, EUR 28558. In: Publications Office of the European Union, Luxembourg, 2017, ISBN 978-92-79-68006-9 doi:10.2760/38842
- Chen, C. (2019). TIC (Tecnologías de la información y la comunicación) [ICT (Information and Communication Technologies)]. In: Significados.com. (2.Jan.2022).
- Consejo de la Unión Europea. (2018). Recomendación del Consejo, de 22 de mayo de 2018, relativa a las competencias clave para el aprendizaje permanente [Council Recommendation of May 22, 2018, on key competences for lifelong learning]. Bruselas: Diario Oficial de la Unión Europea. [https://eur-lex.europa.eu/legal-content/ES/TXT/PDF/?uri=CELEX:32018H0604\(01\)&from=SV](https://eur-lex.europa.eu/legal-content/ES/TXT/PDF/?uri=CELEX:32018H0604(01)&from=SV) (11.Nov.2021).
- Del Cerro Velázquez F, & Morales Méndez G. (2018). Augmented Reality and Mobile Devices: A Binominal Methodological Resource for Inclusive Education (SDG 4). *An Example in Secondary Education. Sustainability*. 10(10):3446. DOI: <https://doi.org/10.3390/su10103446>
- Del Valle Mejías, M. E. (2020). Edmodo: una plataforma de e-learning para la inclusión [Edmodo: an e-learning platform for inclusion.]. *Revista de Comunicación de la SEECI*, 52(1), 17–28. DOI: <https://doi.org/10.15198/seeci.2020.52.17-28>
- Dominguez, H. L., & Carmona Vazquez, H. (2017). El uso de las TIC y sus implicaciones en el rendimiento de los alumnos de bachillerato [The use of ICT and its implications in the performance of high school students.]. Un primer acercamiento. *Education in the Knowledge Society (EKS)*, 18(1), 21–38. DOI: <https://doi.org/10.14201/eks20171812138>
- Dong, C. (2018). 'Young children nowadays are very smart in ICT'—preschool teachers' perceptions of ICT use. *International Journal of Early Years Education*, 1(1) 1-14. DOI:10.1080/09669760.2018.1506318
- Dudenev, G., & Hockly, N. (2016). Literacies, technology and language teaching. In F. Farr, & L. Murray (Eds.). *The Routledge handbook of language learning and technology*. London. Editorial Routledge.
- EU Science HUB. (2021). The Digital Competence Framework 2.0. European Commission Website. (18.mar.2022)
- Falloon, G. (2020). From digital literacy to digital competence: the teacher digital competency (TDC) framework. *Educational Technology Research and Development*, 68(5), 2449-2472. DOI: <https://doi.org/10.1007/s11423-020-09767-4>
- Batanero, J. M. F., Rebollo, M. M. R., & Rueda, M. M. (2019). Impact of ICT on students with high abilities. Bibliographic review (2008–2018). *Computers & Education*, 137(1), 48-58. DOI: <https://doi.org/10.1016/j.compedu.2019.04.007>
- Fernández-Batanero, J. M., Montenegro-Rueda, M., Fernandez-Cerero, J., & Garcia-Martinez, I. (2022). Digital competences for teacher professional development. Systematic review. *European Journal of Teacher Education*, 45(4), 513-531. DOI: <https://doi.org/10.1080/02619768.2020.1827389>
- González-Fernández, N., & Jácome, G. A. C. (2016). El Aprendizaje Cooperativo y la Flipped Classroom: una pareja ideal mediada por las TIC [Cooperative Learning and the Flipped Classroom: an ideal couple mediated by ICT]. *Aularia: Revista Digital de Comunicación*, 5(2), 43-48. file:///C:/Users/LENOVO/Downloads/Dialnet-ElAprendizajeCooperativoYLaFlippedClassroomUnaPare-5423145.pdf (11 de noviembre del 2021)
- Hatlevik, I. K., & Hatlevik, O. E. (2018). Examining the relationship between teachers' ICT self-efficacy for educational purposes, collegial collaboration, lack of facilitation and the use of ICT in teaching practice. *Frontiers in psychology*, 9(1), 935. DOI: <https://doi.org/10.3389/fpsyg.2018.00935>
- Lazo, C. M., Errazu, D. V., & Barroso, J. A. G. (2018). Uso de Twitter en los MOOC: Nuevas formas de interacción juvenil y su influencia en el aprendizaje [Use of Twitter in MOOCs: New forms of youth interaction and its influence on learning.]. *Revista Latina de Comunicación Social*, 73(1), 9. DOI: 10.4185/RLCS-2018-1309
- Lawrence, J. E., & Tar, U. A. (2018). Factors that influence teachers' adoption and integration of ICT in teaching/learning process. *Educational Media International*, 55(1), 79-105. DOI: <https://doi.org/10.1080/09523987.2018.1439712>
- Li, S., Yamaguchi, S., Sukhbaatar, J., & Takada, J. I. (2019). The influence of teachers' professional development activities on the factors promoting ICT integration in primary schools in Mongolia. *Education Sciences*, 9(2), 78. DOI: doi:10.3390/educsci9020078

- Liesa-Orús, M., Latorre-Coscolluela, C., Vázquez-Toledo, S., & Sierra-Sánchez, V. (2020). The technological challenge facing higher education professors: Perceptions of ICT tools for developing 21st century skills. *Sustainability*, 12(13), 5339. DOI: <https://doi.org/10.3390/su12135339>
- Manco-Chavez, J. A., Uribe-Hernandez, Y. C., Buendia-Aparcana, R., Vertiz-Osores, J. J., Isla Alcoser, S. D., & Rengifo-Lozano, R. A. (2020). Integration of ICTS and Digital Skills in Times of the Pandemic COVID-19. *International Journal of Higher Education*, 9(9), 11-20. DOI: <https://doi.org/10.5430/ijhe.v9n9p11>
- Muammar, S., Hashim, KFB., Panthakkan, A. (2022). Evaluation of digital competence level among educators in UAE Higher Education Institutions using Digital Competence of Educators (DigComEdu) framework. *Educ Inf Technol (Dordr)*, 20(1), 1-24. Doi: 10.1007/s10639-022-11296-x.
- Martínez, M. I. (2018). La calidad e innovación educativa [Educational quality and innovation.]. *Revista Iberoamericana de Educación* 1(1), 1-22. DOI: <http://dx.doi.org/10.15359/ree.22-1.11>
- Méndez Bravo, D. I. (2019). Plataforma EDMODO en el proceso enseñanza -aprendizaje [EDMODO platform in the teaching-learning process]. Bachelor's thesis, Universidad de Guayaquil. Facultad de Filosofía, Letras y Ciencias de la Educación.
- Mynaříková, L., & Novotný, L. (2020). Knowledge society failure? Barriers in the use of ICTs and further teacher education in the Czech Republic. *Sustainability*, 12(17), 6933. DOI: 10.3390/su12176933
- Pin, O., Saldarrea, O., & Villafuerte-Holguin, J. (2021). Destrezas del siglo 21 en el context escolar ecuatoriano: Pensamiento crítico, resolución de problemas y toma de decisions [21st century skills in the Ecuadorian school context: critical thinking, problem solving and decision making]. *Revista Cedotic*, 2 (1),1-20). <http://investigaciones.uniatlantico.edu.co/revistas/index.php/CEDOTIC/article/download/2933/3856/>
- Pinzón, J. E. D. (2017). Edmodo como herramienta virtual de aprendizaje [Edmodo as a virtual learning tool]. *INNOVA Research Journal*, 2(10), 9-16. <https://dialnet.unirioja.es/servlet/articulo?codigo=6183849> (14 de enero del 2022)
- Gutiérrez Piñón, N. de los A., Herrera Sánchez, S. del C., & Pérez Nares, Y. del C. (2017). Las TIC en la enseñanza del inglés en educación básica [ICT in teaching English in basic education.]. *Revista Electrónica Sobre Tecnología, Educación Y Sociedad*, 4(7),1-20. In: <https://www.ctes.org.mx/index.php/ctes/article/view/655> (05 de octubre del 2021)
- Pita, G. E. C. (2018). Las TICs en las empresas: evolución de la tecnología y cambio estructural en las organizaciones [ICTs in companies: evolution of technology and structural change in organizations.]. *Dominio de las Ciencias*, 4(1), 499-510. <https://dialnet.unirioja.es/servlet/articulo?codigo=6313252> (05 de octubre del 2021)
- Ratheeswari, K. (2018). Information communication technology in education. *Journal of Applied and Advanced research*, 3(1), 45-47. DOI: <https://dx.doi.org/10.21839/jaar.2018.v3S1.169>
- Redecker, C. (2017). European Framework for the Digital Competence of Educators: DigCompEdu (Joint Research Centre, Institute for Prospective Technological Studies, Hrsg.). Luxembourg: Publications Office of the European Union. *Zugriff am*, 23(1), 1-20. DOI: doi:10.2760/159770
- Rodríguez, R. & Gómez, M. G. (2017). Competencias digitales en la enseñanza-aprendizaje del inglés en bachillerato [Digital competences in the teaching-learning of English in high school]. *Campus Virtuales*, 6(2), 51-59. In: www.revistacampusvirtuales.es (11, jan, 2022).
- Romero, P., Altisen, C., Romero, J & Noro, J. (2017). *La educación en su laberinto. Análisis y propuesta para una salida* [Education in its labyrinth. Analysis and proposal for an exit]. Rosario, Argentina: Homo Sapiens Ediciones.
- Seufert, S. & Meier, C. (2016). From eLearning to Digital Transformation: A Framework and Implications for L&D. Digital transformation. *ijac. International Journal of Advanced Corporate Learning*, 9(27), 27-33. DOI: <http://dx.doi.org/10.3991/ijac.v9i2.6003>
- Tang, C. M., & Chaw, L. Y. (2016). Digital Literacy: A Prerequisite for Effective Learning in a Blended Learning Environment?. *Electronic Journal of E-learning*, 14(1), 54-65. <https://files.eric.ed.gov/fulltext/EJ1099109.pdf> (22 de agosto del 2022)
- Tejedor, S., Cervi, L., Pérez-Escoda, A., & Jumbo, F. T. (2020). Digital literacy and higher education during COVID-19 lockdown: Spain, Italy, and Ecuador. *Publications*, 8(4), 48. <https://doi.org/10.3390/publications8040048>
- Tomaro, Q. P. V. (2018). ICT integration in the educational system of Philippines. *Journal of Governance and Public Policy*, 5(3), 259-282. DOI: <https://doi.org/10.18196/jgpp.5399>
- Tomczyk, Ł. (2018). Digital competences of parents in the matter of electronic threats. SHS Web Conf. RPA International Congresses on Education 2018. Doi: <https://doi.org/10.1051/shsconf/20184801004>
- Tondeur, J., Aesaert, K., Prestridge, S., & Consuegra, E. (2018). A multilevel analysis of what matters in the training of pre-service teacher's ICT competencies. *Computers & Education*, 122(1), 32-42. DOI: doi.org/10.1016/j.compedu.2018.03.002
- Valdivieso Guerrero, T.S. & Gonzáles Galán, M.Á. (2016). Competencia Digital Docente: ¿Dónde estamos? Perfil del docente de educación primaria y secundaria [Teaching Digital Competence: Where are we? Profile of the

- teacher of primary and secondary education]. El caso de Ecuador. *Pixel-Bit: Revista de Medios y Educación*, 49(58), 57-73. DOI: 10.12795/pixelbit.2016.i48.09
- Vázquez, J., Nández Alonso, S. L., Fierro Saltos, W. R., & Pacheco Mendoza, S. (2021). Assessment of Digital Competencies of University Faculty and Their Conditioning Factors: Case Study in a Technological Adoption Context. *Education Sciences*, 11(10), 637. <https://doi.org/10.3390/educsci11100637>
- Villafuerte-Holguín, J. S. (2022). Videojuegos en prácticas del inglés de menores con y sin trastorno por déficit de atención e hiperactividad [Video games in English practice for minors with and without attention deficit hyperactivity disorder]. *Revista Colombiana de Educación*, (85), 79-100. DOI: <https://doi.org/10.17227/rce.num85-12751>
- Yang, S., Fichman, P., Zhu, X., Sanfilippo, M., Li, S., & Fleischmann, K. R. (2020). The use of ICT during COVID-19. *Proceedings of the Association for Information Science and Technology*, 57(1), e297. DOI: doi.org/10.1002/pra2.297

Examining the Attitudes of Turkish Students Towards Scientific Field Trips

Yılmaz Demir¹

¹ Ministry of National Education, Kilis, Turkey

Correspondence: Ministry of National Education, Suleyman Demirel Secondary School, Kilis, Turkey.
Tel: 05058617775. E-mail: ylmzdmr1983@gmail.com

Abstract

In this research, it is aimed to examine the attitudes of Turkish students attending middle school according to various variables (gender, class level, academic achievement, daily study time, maternal education status, maternal occupation, father education status, father's profession, family income status, number of people living in households). The research is designed according to one of the quantitative research methods, the scanning pattern. The sample group of the study consists of 452 secondary school students who were educated in the central district of Kilis province in the fall semester of the 2021-2022 academic year, aged between 10 and 13, selected using simple unelected sampling method. The data of the research were analyzed using the SPSS 23 program. The research findings reveals that middle school students have a high attitude towards scientific field trips. Student attitudes towards the learning tool and adventure direction, which are the sub-dimensions of scientific field trips, are moderate; student attitudes towards social and environmental aspects are high. It was also concluded that the attitudes of secondary school students towards scientific field trips differed importantly according to gender, academic achievement, study time, parental education level and occupation and number of households. However, it was detected that the attitudes of middle school students towards scientific field trips did not differ importantly according to class level and economic level variables.

Keywords: Field Trips, Attitude, Middle School, Turkey

1. Introduction

Learning and teaching environments are needed that can ensure that information is obtained in an easy, understandable and fun way during the education process. One of these environments is undoubtedly out-of-school teaching environments. Out-of-school teaching environments provide primary hand resources, enabling individuals to interact with their surroundings. These environments enable individuals to develop positive attitudes/values and new perspectives by acquiring permanent information. Out-of-school teaching (OSLT) is defined as teaching activities carried out within the framework of the curriculum by taking advantage of institutions and environments outside the school building (Salmi, 1993). Undoubtedly, the way to access out-of-school teaching environments is through scientific field trips (Yıldırım, 2020). In other words, field trips can be seen as

an integral part of out-of-school learning environments (Funderburk, 2016). As a matter of the fact, scientific field trips come to mind first when it comes to out-of-school teaching (Çengelci, 2013; Öner, 2015). “Scientific field trips are defined as activities organized by the school to see any place or the results of an event/event that took place/occurred in that place or to see the physical and human characteristics of that place and to examine them directly in their real environment in line with the gains in the curriculum” (Alkış, 2008, p.2). Scientific field trips, which have a very broad definition, are also defined as “a way of teaching an event or presence in a planned and purposeful way in the natural conditions in order to complete in-class studies and make it more meaningful” (Aydın, 1998, p. 121).

The main purpose of scientific field trips is to give meaning to education and to make education more vivid (Korkmaz, 2006, p.49). In this context, it is important to emphasize that one of the teaching approaches that is one of the student-centered approaches and which provides students with first-hand sources of concepts, subjects or achievements in the course is scientific field trips. These trips are very important for students to comprehend the theoretical knowledge they have acquired in the classroom by examining them in a concrete way on site (Atayeter & Tozkoparan, 2016). In other words, scientific field trips are very important activities as they provide first-hand experiences to students outside of traditional teaching (Flexer & Borun, 1984).

Hore (2007) lists the most important objectives of scientific field trips, which are carried out in a planned and programmatically planned and programmatically manner for educational purposes in schools, whose main goal is to provide the learner with an out-of-school teaching experience and to make the learning permanent:

- 1) Scientific field trips enable students to understand both the place of living and the different environments visited and to improve their knowledge of those places.
- 2) Scientific field trips give students the chance to explore the present effects of changes and solutions to current problems, rather than the old information already described in textbooks.
- 3) Scientific field trips allow students to develop skills such as reading and interpreting maps, collecting and recording data, math skills, drafting, analyzing, thinking and connecting.

There is a study that reveals that scientific field trips made in line with the achievements of the curriculum have many benefits for the student and contribute many to developing the cognitive / sensory / psychomotor skills of students at various levels (Açar, 2010; Ballantyne & Packer, 2009; Bozdoğan & Yalçın, 2006; DeWitt & Storksdieck, 2008; Farmer, Knapp & Benton, 2007; Gennaro, 1981; McKenzie, 1986; Gögebakan, 2008; Gökaya & Yeşilbursa, 2009; Güler, 2011; Hutzel & Goodman, 2004; Karakaş-Özür, 2010; Kızıldaş & Sak, 2018; Knapp & Barrie, 2001; Köseoğlu, Mercan & Pehlivanoğlu, 2020; Orion & Hofstein, 1994; Özgen, 2011; Rudman, 1994; Sebasto & Cavern, 2006).

Scientific field trips are highly useful activities as they support students' high-level thinking skills, improve decision-making skills based on real places and subjects, and evaluate other people's values and attitudes (Alkış, 2008). As mentioned earlier, scientific field trips have many benefits. One of them is that the idea of observation, which is one of the most basic and important of the scientific research method, is gradually beginning to settle in students. To this it is necessary to add another important benefit, such as the deconstruction of the idea of establishing a relationship between the environment and people and events (Doğanay, 1993).

As a matter of fact, it is known that scientific field trips have many educational benefits during the education process. For instance, it can be stated that such activities provide students with a real-life experience in natural learning areas and help them gain a positive attitude towards the environment (Doğan, Çiçek & Saraç, 2018). Most teachers see scientific field trips as an important part of education (Foskett, 2000). For many students, scientific field trips offer an experience they will never forget. Field trips increase students' motivation for learning by improving their social communication and psycho-motor skills. The natural environment provides new learning opportunities for students to be active on field trips (Bronwyn Lewis, 2017). Scientific field trips enable students to understand and understand the knowledge they have learned in the classroom, while increasing their scientific knowledge of the subject and supporting their high-level thinking skills for their subsequent learning (Behrendt &

Franklin, 2014). Field trips provide an opportunity for students to support their academic achievements as well as strengthen the social relationship between students and give them the opportunity to learn by living by doing (Funderburk, 2016). Participating in scientific field trips increases students' self-confidence (Köseoğlu et al., 2020) as well as positively increasing attitudes towards scientific field trips (Demir, 2021). In the study conducted by Demir (2021), it was concluded that the attitudes and motivations of the students who participated in scientific field trips, their awareness of cultural heritage, their attitudes towards scientific field trips and their academic achievements in the field of learning "Culture and Heritage", which is one of the learning areas of this course, increased positively.

When the literature is examined, it is seen that many studies are carried out by various disciplines (classroom teaching, preschool, history, religious culture, physics, law, biology, etc.) especially geography, social studies and science for scientific field trips. These studies are generally based on literature review, student and teacher opinions and experimental studies. However, it is seen that the attitudes of middle school students towards scientific field trips and the research in which these attitudes are examined according to various variables are quite limited. In this context, only one study has been reached that examines the attitudes of middle school students towards scientific field trips in a national sense. In this study conducted by Çavuş, Öztuna Kaplan & Laçın-Simsek (2019), the attitudes of the students who participated in the trips carried out within the scope of the science and art center were examined. In the study, it was detected that the attitudes of the students who participated in scientific field trips were generally high.

Scientific field trips are an instructive tool in expanding the concepts learned and providing motivation for learning. Scientific field trips are perceived as more instructive, but there is also an environmental, social and adventure aspect to field trips (Orion & Hofstein, 1991). Undoubtedly, it is important for education to determine the attitudes of students towards the educational, social, environmental and adventure aspects of scientific field trips and to identify the variables that have an impact on these attitudes. Although attitudes are often the subject of social psychology because they include social and psychological elements, this concept is often included in educational research today. Because many studies on education in recent years reveal that the attitudes of the individual towards the material to be learned, the teacher, the subject area in which he/she is studying affect school achievements. In other words, according to the findings obtained from research in the field of education, the attitude of the person towards the material to be learned, the teacher and the subject area affects the school success (Pehlivan, 1994). This situation shows how important it is to determine the attitudes of students during the education process. As a matter of fact, based on the importance of scientific field trips in the educational process, the aim of the current research is to reveal various variables that are thought to differ on the attitudes and attitudes of Turkish students attending secondary school towards scientific field trips. In this context, the scale developed by Orion and Hofstein (1991) to measure students' attitudes regarding scientific field trips is very important in this field. With this measuring tool adapted to Turkish by Tortop (2013), students' attitudes towards scientific field trips were measured.

1.1 The Purpose of The Research

In this research, it is aimed to determine the attitude levels of middle school students towards scientific field trips and to examine their attitudes according to various variables (gender, class level, academic achievement, daily study time, maternal education status, maternal occupation, father education status, father's profession, family income status, number of people living in the household). As a matter of fact, when the literature is examined, there are scientific studies that show that various variables such as gender, academic achievement, education level and profession of parents, socioeconomic level of the family are effective on the attitudes of the students. For instance, the study conducted by Kılıç and Girgin (2019) concluded that gender, academic achievement, maternal and parental education status and profession and the socioeconomic status of the family were influential on the attitudes of middle school students towards the environment.

In the current research based on the literature; It is thought that the variables "gender, class level, academic achievement, daily study time, maternal education status, maternal occupation, father's education status, father's profession, family income status, number of people living in households" can make a difference. In this context,

the main problem question of the research is detected as follows: “What is the level of attitudes of middle school students towards scientific field trips and do their attitudes differ importantly according to various variables (gender, class level, academic achievement, daily study time, maternal education status, maternal occupation, father education status, paternal profession, family income status, number of people living in the household)?”

2. Method

The current research is designed according to the scanning pattern, which is one of the quantitative research methods. Screening research patterns are “quantitative research patterns in which researchers gather information by applying scanning to a sample group or the entire universe to explain the attitudes, views, behaviors or characteristics of a universe” (Creswell, 2019, p.481).

2.1 Participant Characteristics

This research was created in the fall semester of the 2021-2022 academic year with 452 secondary school students aged between 10 and 13 who were studying in the central district of Kilis province. Students were selected according to simple random sampling method. In this sampling method, all units in the universe have an equal or independent chance of being selected for the sample (Büyüköztürk, Kılıç-Çakmak, Akgün, Karadeniz & Demirel, 2018, p. 85). Tavşancıl (2010) describes “50 of the sample size as very weak, 100 as weak, 200 as medium, 300 as good, 500 very good and 1000 excellent.” Accordingly, it can be said that the sample size in this research is very good. The demographic characteristics of the students participating in the current study are given in Table 1.

Table 1: Demographic characteristics of middle school students

Variable	Category	n	%
Gender	Female	248	54.9
	Male	204	45.1
Class level	5. grade	140	31
	6. grade	164	36.3
	7. grade	148	32.7
Academic achievements	Low	64	14.2
	Medium	72	15.9
	Good	144	31.9
	Very good	172	38
Study time	One\two hours	127	28.1
	Two\three hours	106	23.4
	Three\four hours	102	22.6
	More than four hours	117	25.9
Maternal education level	Primary school	96	21.2
	Middle school	120	26.6
	High school	175	38.7
	Undergraduate	61	13.5
Mother's profession	Housewife	321	71
	Private sector employee	75	16.6
	Public employee	56	12.4
Paternal education level	Primary school	75	16.6
	Middle school	116	25.7
	High school	175	38.7
	Undergraduate	86	19
Father's profession	Unemployed	93	20.6
	Employee	107	23.7
	Artisan	144	31.8
	Public employee	108	23.9

Family income status	Medium	176	38.9
	Good	132	29.2
	Very good	144	31.9
Number of households	Three people	106	23.4
	Four people	140	31
	Five or more	206	45.6

2.2 Data Collection Tools

Data were collected through the “personal information form” and “scientific field trip attitude scale” in order to obtain the necessary data from the students.

2.2.1. Personal Information Form

When determining the demographic characteristics of the sample group, factors that may differ in the attitudes of the students towards scientific field trips were analyzed. As a result of the field writing scan, it was detected that various variables such as gender, class level, academic success, daily study time, maternal education status, maternal occupation, father's education status, father's profession, family income status and number of people living in the household can make a difference on the attitudes of students towards scientific field trips. In this context, a “Personal Information Form” containing these variables was created by the researcher.

2.2.2 Scientific Field Trip Attitude Scale

DFA result indexes of the scientific field trip attitude scale (SFTAS) adapted to Turkish by Tortop (2013) $\chi^2=516.3$, $df=238$, $p=.000$; RMSEA, .06; $\chi^2/df=2.16$ NFI=.77; CFI=.86; GFI=.88; PCLOSE= .000. In line with these findings, it can be said that the model is a well compatible model. It can also be said that the Cronbach Alpha internal consistency coefficient is a reliable scale with a coefficient of .88 and total item correlation values ranging from .31 to .63. The “individualized learning direction” dimension found on the original scale was excluded from the adaptation study and the final scale consisted of four dimensions: “learning tool direction”, “social direction”, “adventure direction” and “environmental direction”. After the Turkish version of SFTAS, which is in the type of quadruple likert (1=I completely disagree, 2= I do not agree, 3=I agree and 4=I fully agree), it has been detected that its use is appropriate in the research to be carried out on field trips due to its validity and reliability.

2.3 Data Collection Process

The data of the current research were collected in the central district of Kilis province during the fall semester of the 2021-2022 academic year. The data of the study were collected from students in selected middle schools using a simple non-selective sampling method. During the data collection process, the schools detected within the scope of the research were visited and the school administration informed about the research. Thus, data was collected through the sample group in accordance with the knowledge and permission of the school administration. The sampling group where the research was applied was also informed about the research. The research forms were then applied to the sample group. The research form completed in a face-to-face classroom environment was completed by the sample group within an average of 25 minutes. All kinds of guidance are given so that the sample group can easily understand and respond to the expressions on the measuring device. On the other hand, there was no intervention or guidance on which expression the sample group would prefer.

2.4 Analysis of Data

SPSS 23 program was used for the analysis of the data obtained within the scope of the research. The reliability of the measuring instrument was first tested before proceeding to the analysis of the data. In this context, the value of SFTAS's Cronbach's Alpha was found to be .80. Therefore, it has been decided that SFTAS makes reliable measurements, and that the analysis of the data can be started. After the reliability test, normality values were tested within the scope of the research. Analysis [(kurtosis= 1.753, swekness= -.972) and shapiro wilk and

kolmogorov smirnov values= .000 <.05)] revealed that the data did not show normal distribution. For this reason, non-parametric tests were used in statistical analyses. Accordingly, “Mann Whitney U” was made to examine whether the attitudes of middle school students to scientific field trips differed importantly by gender. “Kruskal Wallis H” test was performed to examine whether the attitudes of middle school students towards scientific field trips differed importantly according to class level, academic achievements, maternal education level, father education level, family income status and number of households. “Post Hoc Tamhane” test was applied to determine which groups the difference was between (Büyüköztürk, 2004).

3. Results

In this part of the current study, the relationship of the attitudes of middle school students towards scientific field trips according to the problem situation of the study according to gender, class level, academic achievement, daily study time, maternal education status, maternal occupation, father's education status, father's profession, family income status and number of people living in the household are analyzed and the findings for these variables are included. However, before we proceed to the analysis of the relationship of the attitudes of middle school students towards scientific field trips according to various variables, the findings regarding the attitude levels of middle school students towards scientific field trips were given.

3.1 Findings on Attitude Level for Scientific Field Trips

Some statistical analyses were carried out on the total scores obtained from SFTAS. In this context, the lowest score to be obtained from SFTAS prepared as 24 articles in the quadruple likert type is 24 and the highest score is 96. In the current study, the lowest score from the scale applied to 452 students was 39, while the highest score was 88. The difference between the lowest and highest score (ranj) was found to be 49. When the distribution of total scores obtained from SFTAS is examined, the arithmetic average is 71.99 ($\bar{X}=71.99$); 8.51 of the standard deviation; median (median) 74; mod value (peak value) was detected to be 65. The distortion coefficient, which refers to the distribution of the total scores obtained by SFTAS, was detected as -.972 and the pressure coefficient was 1.75.

In order to determine the level of attitudes of middle school students towards scientific field trips, the total scores of each student were calculated and averaged. Accordingly, the score in the range of 24-47 is low, the score in the range of 48-71 corresponds to the medium level, and the score in the range of 72-96 corresponds to the high level. When Table 1 is examined, it is seen that eight of the 452 students (1.8%) surveyed had low attitudes towards scientific field trips, 192 (42.5%) were moderate and 252 (55.7%) were high. The average attitude of students towards scientific field trips is $\bar{X}=71.99$. This finding shows that middle school students have a high level of attitudes towards scientific field trips.

Table 2: Attitude level for scientific field trips

Level	Range	n	%
Low	(24-47)	8	%1.8
Medium	(48-71)	192	%42.5
High	(72-96)	252	%55.7
Total	(27-108)	452	%100

$N=452$; $\bar{X}=71.99$; $Ss=8.51$

The level of attitudes of middle school students according to dimensions of SFTAS, which consists of four dimensions: “learning tool direction”, “social direction”, “adventure direction” and “environmental direction”, was also analyzed in the study. In this context, the lowest score is 11 and the highest score is 44, since there are a total of 11 items in the “learning tool direction” dimension of SFTAS. However, it was detected that the lowest score of students of this size was 21 and the highest score was 40. When Table 3 is examined, it is seen that eight of the 452 students (1.8%) who participated in the study had low attitudes towards the “learning tool direction” dimension of scientific field trips, 360 (79.6%) were moderate and 84 (18.6%) were high. The average attitude of

the students towards this dimension is $\bar{X}=30.60$. This finding suggests that middle school students have moderate attitudes towards the “learning tool direction” dimension of scientific field trips.

Table 3: Attitude level towards the learning tool aspect of scientific field trips

Level	Range	n	%
Low	(11-22)	8	%1.8
Medium	(23-33)	360	%79.6
High	(34-44)	84	%18.6
Total	(27-108)	452	%100

$N=452$; $\bar{X}=30.60$; $Ss=3.36$

Since there are a total of five items in the “social aspect” dimension of SFTAS, the lowest score is five and the highest score is 20. However, it was detected that the lowest score of the students in this dimension was six and the highest score was 20. According to Table 4, 16 (3.5%) of the 452 students surveyed had low attitudes towards the “social aspect” dimension of scientific field trips, 180 (39.8%) were moderate and 256 (56.7%) were high. The average attitude of the students towards this dimension is $\bar{X}=16.14$. This finding indicates that middle school students have a high level of attitudes towards the “social aspect” dimension of scientific field trips.

Table 4: Attitude level towards the social aspect of scientific field trips

Level	Range	n	%
Low	(5-10)	16	%3.5
Medium	(11-15)	180	%39.8
High	(16-20)	256	%56.7
Total	(27-108)	452	%100

$N=452$; $\bar{X}=16.14$; $Ss=2.81$

Since there are a total of four items in the “adventure direction” dimension of SFTAS, the lowest score is four and the highest score is 16. In the current study, it was detected that the lowest score of students of this size was four and the highest score was 16. According to Table 5, 28 (6.2%) of the 452 students surveyed had low attitudes towards the “social aspect” dimension of scientific field trips, 224 (49.6%) were moderate and 200 (44.2%) were high. The average attitude of the students towards this dimension is $\bar{X}=11.78$. This finding indicates that middle school students have moderate attitudes towards the “adventure aspect” dimension of scientific field trips.

Table 5: Attitude level towards the adventure aspect of scientific field trips

Level	Range	n	%
Low	(4-8)	28	%6.2
Medium	(9-12)	224	%49.6
High	(13-16)	200	%44.2
Total	(27-108)	452	%100

$N=452$; $\bar{X}=11.78$; $SS=2.01$

Since there are a total of four substances in the “environmental aspect” dimension of SFTAS, the lowest score is four and the highest score is 16. In this study, it was detected that the lowest score of students of this size was four and the highest score was 16. According to Table 6, 20 (4.4%) of the 452 students surveyed had low attitudes towards the “environmental aspect” dimension of scientific field trips, 128 (28.3%) were moderate and 304 (67.3%) were high. The average attitude of the students towards this dimension is $\bar{X}=13.46$. This finding indicates that middle school students have a high level of attitudes towards the “environmental aspect” dimension of scientific field trips.

Table 6: Attitude level towards the environmental aspect of scientific field trips

Level	Range	n	%
Low	(4-8)	20	%4.4

Medium	(9-12)	128	%28.3
High	(13-16)	304	%67.3
Total	(27-108)	452	%100

$N=452$; $\bar{X}=13.46$; $SS=2.50$

3.2 Relationship Between Attitude to Scientific Field Trips and Gender

“Mann Whitney U” was made to examine whether the attitudes of middle school students to scientific field trips differed importantly by gender and the results reached are available in Table 7.

Table 7: Relationship between attitude to scientific field trips and gender

Gender	n	Class avr.	Row total	z	p
Female	248	242.76	60204.00	-2.921	.003
Male	204	206.74	42174.00		
Total	452				

$U=21264.00$; $z=-2.921$; $p<0.5$

According to the data in Table 7, it was detected that the attitudes of middle school students towards scientific field trips differed importantly by gender ($U_{21264.00}=-2.921$, $p<.05$). When we look at the averages of the rows, it is seen that this difference is in favor of the female students. According to these findings, it can be said that the attitudes of female students towards scientific field trips are more positive than male students.

3.3 Relationship Between Attitude to Scientific Field Trips and Class Level

“Kruskal Wallis H” test was performed to examine whether the attitudes of middle school students towards scientific field trips differed importantly according to the class level and the results reached are available in Table 8.

Table 8: Relationship between attitude to scientific field trips and class level

Class level	n	Row avr.	sd	X^2	p	Significant difference
Fifth grade	140	238.84				
Sixth grade	164	231.57	2	4.103	.129	----
Seventh grade	148	209.20				
Total	452					

$X^2=4.103$; $sd=2$; $p>0.5$

According to the data in Table 8, it was detected that the attitudes of middle school students towards scientific field trips did not differ importantly according to the class level ($X^2=4.103$; $p>0.5$). According to this finding, it is seen that the class level does not make any significant differentness on the attitudes of middle school students towards scientific field trips.

3.4 Relationship Between Attitude to Scientific Field Trips and Academic Success

“Kruskal Wallis H” test was performed to examine whether the attitudes of middle school students towards scientific field trips differed importantly according to their academic achievements and the results reached are available in Table 9.

Table 9: Relationship between attitude to scientific field trips and academic success

Academic achievements	n	Row avr.	sd	X^2	p	Significant differentness
Low (A)	64	184.38				
Medium (B)	72	207.06	3	13.440	.004	A-C
Good (C)	144	250.94				B-C

Very good (D)	172	229.85
Total	452	

$X^2=13.440$; $sd=3$; $p<0.5$

According to the data in Table 9, it was detected that the attitudes of middle school students towards scientific field trips differed importantly according to their academic achievements ($X^2=13.440$; $p<0.5$). The “Post Hoc Tamhane” test was applied to determine which groups the differentness was between. In the analysis, it was seen that the differentness was between students with good academic achievement grades and students with low and middle grades (Table 10). Considering the row averages and average differentness, it can be said that the differentness between these groups is in favor of students with good academic achievements. In other words, it is seen that the attitudes of middle school students towards scientific field trips differ from their academic achievements, especially those of students with good academic achievements, are more positive than students in the other category.

Table 10: Tamhane test result comparing attitude to scientific field trips in terms of academic success level

Variable	Category	Significant differentness	ss	p	
Academic achievement	Low	Medium	-.333	1.44	.996
		Good	-3.861	1.26	.013*
		Very good	-1.860	1.23	.433
	Medium	Low	.333	1.44	.996
		Good	-3.527	1.21	.020*
		Very good	-1.527	1.18	.568
	Good	Low	3.861	1.26	.013*
		Medium	3.527	1.21	.020*
		Very good	2.000	.95	.153
	Very good	Low	1.860	1.23	.433
		Medium	1.527	1.18	.568
		Good	-2.000	.95	.153

* $p<.05$

3.5 Relationship Between Attitude to Scientific Field Trips and Daily Study Time

“Kruskal Wallis H” test was performed to examine whether the attitudes of middle school students towards scientific field trips differed importantly according to the daily study time. The results reached are available in Table 11.

Table 11: Relationship between attitude to scientific field trips and daily study time

Study time	n	Row avr.	sd	X^2	p	Significant differentness
Less than an hour (A)	127	200.04				
One\two hours (B)	106	207.78	3	15.727	.001	A-D
Three\four hours (C)	102	243.23				B-D
More than four hours (D)	117	257.59				
Total	452					

$X^2=15.727$; $sd=3$; $p<0.5$

According to the data in Table 11, it was detected that the attitudes of middle school students towards scientific field trips differed importantly according to the daily study period ($X^2=15.727$; $p<0.5$). The “Post Hoc Tamhane” test was applied to determine which groups the differentness was between. In the analysis, it was observed that the differentness was between students with an average daily study time of “more than four hours” and students with “less than one hour” and “one/two hours” (Table 12). When the averages of the rows and the average differentness are taken into account, it can be said that the differentness between these groups is in favor of students whose average daily study time is “more than four hours”. In other words, it is fair to say that the attitudes of middle

school students towards scientific field trips differ from the duration of study, especially those whose study time is more than four hours.

Table 12: Tamhane test result where attitude towards scientific field trips is compared in terms of daily study time

Variable	Category	Significant differentness	ss	p	
Average daily study time	Less than an hour	One\two hours	0.210	1.10	.998
		Three\four hours	-2.622	1.11	.090
		More than four hours	-2.888	1.07	.038*
	One\two hours	Less than an hour	-0.210	1.10	.998
		Three\four hours	-2.832	1.16	.074
		More than four hours	-3.099	1.12	.032*
	Three\ four hours	Less than an hour	2.622	1.11	.090
		One\two hours	2.832	1.16	.074
		More than four hours	-0.266	1.14	.996
	More than four hours	Less than an hour	2.888	1.07	.038*
		One\two hours	3.099	1.12	.032*
		Three\four hours	0.266	1.14	.996

* $p < .05$

3.6 Relationship Between Attitude to Scientific Field Trips and Maternal Education Level

“Kruskal Wallis H” test was performed to examine whether the attitudes of middle school students towards scientific field trips differed importantly according to the level of maternal education and the results reached are available in Table 13.

Table 13: Relationship between attitude to scientific field trips and maternal education level

Maternal education level	n	Row avr.	sd	X^2	p	Significant differentness
Primary school (A)	96	200.08				A-C
Middle school (B)	120	204.55	3	15.143	.002	A-D
High school (C)	175	243.01				B-D
Undergraduate (D)	61	263.88				
Total	452					

$X^2=15.143$; $sd=3$; $p < 0.5$

According to the data in Table 13, it was detected that the attitudes of middle school students towards scientific field trips differed importantly according to the level of maternal education ($X^2=15.143$; $p < 0.5$). The “Post Hoc Tamhane” test was applied to determine which groups the differentness was between. In the analysis, it was seen that the differentness was between the students whose maternal education level was undergraduate and the students who were in primary and middle school. In addition, significant differentness was found between students with a high school level of maternal education and students who were primary school students (Table 14). When the averages and average differentness are taken into account, it is seen that the differentness between these groups is in favor of students whose maternal education level is high school and undergraduate. In other words, it is fair to say that the attitudes of middle school students towards scientific field trips differ from the level of maternal education, especially those whose maternal education level is high school and undergraduate.

Table 14: Tamhane test result comparing attitude to scientific field trips in terms of maternal education level

Variable	Category	Significant differentness	ss	p	
Maternal education level	Primary school	middle school	-1.868	1.14	.359
		High school	-4.019	1.05	.001*
		undergraduate	-5.490	1.36	.000*
	Middle school	Primary school	1.868	1.14	.359

	High school	-2.150	.98	.132
	undergraduate	-3.621	1.31	.030*
High school	Primary school	4.019	1.05	.001*
	middle school	2.150	0.98	.132
	undergraduate	-1.471	1.23	.636
undergraduate	Primary school	5.490	1.36	.000*
	middle school	3.621	1.31	.030*
	High school	1.471	1.23	.636

*p<.05

3.7 Relationship Between Attitude to Scientific Field Trips and Mother's Profession

“Kruskal Wallis H” test was performed to examine whether the attitudes of middle school students towards scientific field trips differed importantly according to the mother's profession and the results reached are available in Table 15.

Table 15: Relationship between attitude to scientific field trips and mother's profession

Mother's profession	n	Row avr.	sd	X^2	p	Significant differentness
Housewife (A)	321	210.23				
Private sector Employee (B)	75	257.75	2	18.001	.000	A-C
Public employee (C)	56	277.93				
Total	452					

$X^2=15.143$; $sd=3$; $p<0.5$

According to the data in Table 15, it was detected that the attitudes of middle school students towards scientific field trips differed importantly according to the mother's profession ($X^2=15.143$; $p<0.5$). The “Post Hoc Tamhane” test was applied to determine which groups the differentness was between. In the analysis, it was seen that the differentness between students whose mother profession is public employee and students whose mother's profession is housewife (Table 16). When the averages and average differentness are taken into account, it is seen that the differentness between these groups is in favor of the students whose mother education profession is public employee. In other words, it is observed that the attitudes of middle school students towards scientific field trips differ from the mother's profession, especially those who are public employees of the mother profession.

Table 16: Tamhane test result comparing attitude to scientific field trips in terms of mother's profession

Variable	Category	Significant differentness	ss	p
Mother's profession	Housewife	Private sector employee	-2.033	1.07 .143
		Public employee	-4.471	1.21 .001*
	Private sector employee	Housewife	2.033	1.07 .143
		Public employee	-2.438	1.48 .228
	Public employee	Housewife	4.471	1.21 .001*
		Private sector emp.	2.438	1.4 .228

*p<.05

3.8 Relationship Between Attitude to Scientific Field Trips and Father Education Level

“Kruskal Wallis H” test was performed to examine whether the attitudes of middle school students towards scientific field trips differed importantly according to the level of paternal education and the results reached are available in Table 17.

Table 17: Relationship between attitude to scientific field trips and father education level

Paternal education level	n	Row avr.	sd	X^2	p	Significant differentness
Primary school (A)	75	190.07				
Middle school (B)	116	209.72	3	13.061	.049	A-D
High school (C)	175	240.89				
Undergraduate (D)	86	251.43				
Total	452					

$X^2=13.061$; $sd=3$; $p<0.5$

According to the data in Table 17, it was detected that the attitudes of middle school students towards scientific field trips differed importantly according to the level of paternal education ($X^2=13.061$; $p<0.5$). The “Post Hoc Tamhane” test was applied to determine which groups the differentness was between. In the analysis, it was seen that the differentness was between the students whose father's education level was primary school and the students who were undergraduates (Table 18). When the averages and average differentness were taken into account, it was observed that the differentness between these groups was in favor of the students whose paternal education level was undergraduate. In other words, it can be said that the attitudes of middle school students towards scientific field trips differed from the father's education level, especially the attitudes of students with a paternal education level were more positive.

Table 18: Tamhane test result comparing attitude towards scientific field trips in terms of father education level

Variable	Category	Significant differentness	ss	p	
Paternal education level	Primary school	Middle school	-0.631	1.25	.958
		High school	-2.074	1.16	.286
		undergraduate	-3.500	1.33	.045*
	Middle school	Primary school	0.631	1.25	.958
		High school	-1.442	1.01	.485
		undergraduate	-2.869	1.20	.082
	High school	Primary school	2.074	1.16	.286
		Middle school	1.442	1.01	.485
		undergraduate	-1.426	1.11	.576
	undergraduate	Primary school	3.500	1.33	.045*
		Middle school	2.869	1.20	.082
		High school	1.426	1.11	.576

* $p<.05$

3.9 Relationship Between Attitude to Scientific Field Trips and Father's Profession

“Kruskal Wallis H” test was performed to examine whether the attitudes of middle school students towards scientific field trips differed importantly according to the father's profession and the results reached are available in Table 19.

Table 19: Relationship between attitude to scientific field trips and father education level

Paternal education level	n	Row avr.	sd	X^2	p	Significant differentness
Unemployed (A)	93	204.89				
Employee (B)	107	184.29	3	17.558	.001	B-D
Artisan (C)	144	229.58				
Public employee (D)	108	256.98				
Total	452					

$X^2=17.558$; $sd=3$; $p<0.5$

According to the data in Table 19, it was detected that the attitudes of middle school students towards scientific field trips differed importantly according to the paternal profession ($X^2=17.558$; $p<0.5$). The “Post Hoc Tamhane”

test was applied to determine which groups the differentness was between. In the analysis, it was seen that the differentness was between students whose father's education profession was public employee and students whose father's profession was employee (Table 20). Considering the row averages and average differentness, it can be said that the differentness between these groups is in favor of students whose paternal profession is public employee. In other words, it can be said that the attitudes of middle school students towards scientific field trips differ from the father's profession, especially those whose father profession is public employees are more positive.

Table 20: Tamhane test result comparing attitude towards scientific field trips in terms of father education level

Variable	Category	Significant differentness	ss	p	
Father profession status	Unemployed	Employee	2.320	1.19	.210
		Artisan	-0.075	1.11	1.000
		Public employee	-2.071	1.18	.304
	Employee	Unemployed	-2.320	1.19	.210
		Artisan	-2.396	1.07	.116
		Public employee	-4.391	1.14	.001*
	Artisan	Unemployed	0.075	1.11	1.000
		Employee	2.396	1.07	.116
		Public employee	-1.995	1.07	.245
	Public employee	Unemployed	2.071	1.18	.304
		Employee	4.391	1.14	.001*
		Artisan	1.995	1.07	.245

* $p < .05$

3.10 Relationship Between Attitude to Scientific Field Trips and Family Income Status

“Kruskal Wallis H” test was performed to examine whether the attitudes of middle school students towards scientific field trips differed importantly according to family income status and the results reached are available in Table 21.

Table 21: Relationship between attitude to scientific field trips and family income status

Family income status	n	Row avr.	sd	X^2	p	Significant differentness
Medium (B)	176	213.59				
Good (C)	132	247.89	2	5.397	.065	---
Very good (D)	144	222.67				
Total	452					

$X^2=5.397$; $sd=2$; $p>0.5$

According to the data in Table 21, it was detected that the attitudes of middle school students towards scientific field trips did not differ importantly according to the family income status ($X^2=5.397$; $p>0.5$). According to this finding, it can be said that the family income status does not make any significant differentness on the attitudes of middle school students towards scientific field trips.

3.11 Relationship Between Attitude to Scientific Field Trips and Number of Households

“Kruskal Wallis H” test was performed to examine whether the attitudes of middle school students towards scientific field trips differed importantly according to the number of households and the results reached are available in Table 22.

Table 22: Relationship between attitude to scientific field trips and number of households

Number of households	n	Row avr.	sd	X^2	p	Significant differentness
Three (A)	106	259.76				
Four (B)	140	221.19	2	9.325	.009	A-C

Five or more (C)	206	213.02
Total	452	

$X^2=9.325$; $sd=2$; $p<0.5$

According to the data in Table 22, it was detected that the attitudes of middle school students towards scientific field trips differed importantly according to the number of households ($X^2=9.325$; $p<0.5$). The “Post Hoc Tamhane” test was applied to determine which groups the differentness was between. In the analysis, it was observed that the differentness was between students with three households and students with five or more (Table 23). When the averages and average differentness are taken into account, it can be said that the differentness between these groups is in favor of students living in households of three. In other words, it can be said that the number of households varies on the attitudes of middle school students towards scientific field trips, especially as the number of households decreases, so does the attitudes of the students.

Table 23: Tamhane test result comparing attitude to scientific field trips in terms of number of households

Variable	Category		Significant differentness	ss	p
The number of households	Three	Four	1.840	1.08	.209
		Five or more	3.136	1.00	.006*
	Four	Three people	-1.840	1.08	.209
		Five or more	1.295	0.92	.341
	Five or more	Three people	-3.136	1.00	.006*
		Four people	-1.295	0.92	.341

* $p<.05$

4. Discussion

In the current research, attitude levels and attitudes of Turkish students attending middle school were examined according to various variables (gender, class level, academic success, daily study time, maternal education status, maternal occupation, paternal education status, father's profession, family income status, number of people living in households). In this context, the attitude levels of middle school students towards scientific field trips were analyzed and it was detected that they had a high level of attitude. When the attitudes of the students regarding the sub-dimensions of scientific field trips are examined, their attitudes towards the learning tool and adventure direction are moderate; attitudes towards social and environmental aspects were found to be at a high level. In this context, it is noteworthy that middle school students have a higher level of attitude towards the social and environmental aspects of scientific field trips. As a matter of fact, when the student opinions about the social aspect of scientific field trips such as “I would like to participate in field trips because it is so much fun, my favorite thing on field trips is adventures, I return with many experiences from field trips, I want to participate in more field trips because it helps to build class spirit, field trip is important because it helps me make more friends” is examined, it is fair to say that field trips for middle school students are quite fun in the educational process, forming the classroom spirit, enabling cooperation and making friends. This finding is similar to the findings in various researches that scientific field trips are quite fun and exciting (Ocak, Kuş & Küçükilhan, 2013; Tortop & Özek, 2013; Tutkun, Aydın-Kılıç, Balcı & Kök, 2019).

Although it is known that scientific field trips stand out in more instructive aspects (Orion & Hofstein, 1991) it can be said that the socialization aspect of scientific field trips is more prominent in many studies (Demir, 2021; Öner, 2015; Topçu, 2017). When the statements related to the environmental aspect of scientific field trips such as “I like to participate in field trips, because it is important for me to understand the environment I live in, the field trip increases people's awareness of environmental issues, I would like to see more field trips due to its contribution to nature conservation education, seeing similarities in different parts of my country strengthens my connection with my country” are examined, it is concluded that scientific field trips for middle school students also have an important place in terms of raising and protecting awareness about the environment, recognizing the immediate environment and ensuring commitment to the country of life. As a matter of fact, the finding that scientific field trips positively affected the attitudes and knowledge levels of the students in the studies of Topçu and Atabey

(2016, p. 508) especially in terms of people's carelessness towards the environment supports the finding of the current research. When the statements regarding the learning tool aspect of scientific field trips such as "Field trip helps to understand the subjects learned in the classroom, field trips are the best way to learn a topic, field trips are the most fun way to learn, but it is unfortunately important to show and visualize the concepts learned in the field trip class, the subjects learned in field trips remain in my mind for a long time, learning in the classroom is more effective than learning in the field trip, Field trip increases my liking of the subject processed in the course, I understand nature events better after observing them on the field trip" are examined, it has been detected that one of the most effective ways to learn for middle school students is scientific field trips. At the same time, it was emphasized that scientific field trips made important contributions in the educational process such as better understanding, learning, permanence of the subjects learned by the students, making the subjects fun, embodying them and increasing the interest in the course. In many studies (Demir, 2021; Karakaş-Özür & Şahin, 2017; Topçu, 2017; Öner, 2015; Ballantyne & Packer, 2009; DeWitt & Storksdieck, 2008; Knapp & Barrie, 2001; Rudman, 1994) parallel with these findings, it has been detected that field trips have many contributions in the educational process such as ensuring the permanence of the learned knowledge, increasing interest in the course, making the course fun, embodying abstract information, enabling learning by living by doing, preparing the student for life and increasing the academic achievements of the students.

When the student opinions about the adventure aspect of scientific field trips such as "My favorite things on field trips are adventures, such as climbing mountains, crossing rivers, I like field trips with walking in them, I like field trips despite the difficulties on the roads" are examined, it is concluded that scientific field trips are seen as an important means of interacting with the natural environment for students. As a matter of fact, Doğanay (1993) places scientific field trips in a very important place in terms of rooting the idea of establishing a relationship between environment and human-event. Orion and Hofstein (1991) state that scientific field trips support students to interact one-on-one with the environment.

In addition, Topçu and Atabey (2016) emphasize that scientific field trips that seem important for environmental education offer students the opportunity to be intertwined with nature and learn by living by doing it. As mentioned above, the attitudes of middle school students towards scientific field trips were examined according to gender, class level, academic success, daily study time, maternal education status, parental education status, father's occupation, family income status, number of people living in the household. In this context, it has been concluded that the attitudes of students towards scientific field trips differ importantly according to gender, academic achievement, study time, parental education level and professions and number of households. On the other hand, it was detected that the attitudes of the students towards scientific field trips did not differ importantly according to the class level and economic level. Accordingly, it was detected that the attitudes of female students towards scientific field trips were more positive than male students. In addition, the study found that students whose parental education undergraduate and profession are public employees had higher attitudes towards scientific field trips than students in other groups. Moreover, the study concluded that as students' study time increased and the number of households decreased, their attitudes towards scientific field trips increased. As is known, the family environment of the child and the education he receives in this environment affect his personality structure, social and mental development (Sarier, 2016). With the statement of field trip, a fun day full of learning and socializing with other individuals come to the minds in general (Kennedy, 2014). Therefore, it can be said that parents whose education status is undergraduate and whose profession is public employees, namely working parents, tend to learn and socialize by living more with their children's scientific field trips. Another similar finding is that students who spend too much time studying at home and have good academic success and students who live in households have increased attitudes towards scientific field trips. Therefore, it can be interpreted as that these students tend to learn and socialize by going out of home and school with scientific field trips and living with friends.

In conclusion, it was concluded that Turkish students attending middle school had higher attitudes towards scientific field trips, especially socialization and environmental attitudes. It was detected that gender, academic achievement, study time, parental education status and profession, family income status and number of households made a significant differentness in these attitudes of the students. It can be said that the results reached are quite significant when the findings of the current study and the studies of literature are evaluated together. Based on the findings of this research, the following recommendations can be made:

- 1) This research was carried out with 452 Turkish students attending secondary school. Therefore, similar studies can be done with different sample groups.
- 2) This research was carried out taking into account various variables that are thought to differ on students' attitudes towards scientific field trips such as gender, class level, academic achievement, daily study time, maternal education status, parental education status, father's profession, family income status, number of people living in households. Therefore, similar studies can be carried out in which different variables are measured.

References

- Açar, S. (2010). *İlköğretim sosyal bilgiler dersinde gözlem gezisi uygulamasının öğrencilerin eleştirel düşünme becerisine ve çevre duyarlılığına etkisi [The effect of observation trip application on students' critical thinking skills and environmental awareness in primary school social studies course]* (Master Thesis). Retrieved from the National Thesis Center of the Council of Higher Education. (Thesis No. 298037).
- Alkış, S. (2008). Coğrafya öğretiminde inceleme gezileri ve arazi çalışmaları [Study trips and field studies in geography teaching]. R. Özey and A. Demirci (Eds), *Coğrafya öğretiminde yöntem ve yaklaşımlar [Methods and approaches in geography teaching]* (pp. 77-106). İstanbul: Aktif Yayınevi.
- Atayeter, Y., & Tozkoparan, U. (2016). Sosyal bilgiler derslerinde gezi gözlem yöntemini planlama uygulama ve sonuçlandırma açısından bir değerlendirme [An evaluation in terms of planning, applying and concluding the travel observation method in social studies lessons]. H. Babacan and S. Özer (Eds), *Sosyal ve liberal bilimlerde yeni yönelimler [New directions in social and liberal sciences]* (pp. 171- 188). Ankara: Gece Kitaplığı.
- Aydın, A. (1998). *Sınıf yönetimi [Classroom management]*. Ankara: Anı yayıncılık.
- Ballantyne, R., & Packer, J. (2009). Introducing a fifth pedagogy: Experience-based strategies for facilitating learning in natural environments. *Environmental Education Research*, 15(2), 243-262. doi: 10.1080/13504620802711282
- Behrendt, M., & Franklin T. (2014). A review of research on school field trips and their value in education. *International Journal of Environmental and Science Education*, 9(3), 235245. doi: 10.12973/ijese.2014.213a
- Bozdoğan, A. E., & Yalçın, N. (2006). Bilim merkezlerinin ilköğretim öğrencilerinin fene karşı ilgi düzeylerinin değişmesine ve akademik başarılarına etkisi: Enerji parkı [The effects of science centers on the change of science interest levels of primary education students and on their academic success: Energy]. *Ege Eğitim Dergisi [Ege Journal of Education]*, 7(2), 95-114.
- Bronwyn Lewis, E. (2017). *Program evaluation of elementary school field trips to a botanical garden* (Master's thesis). <https://etd.auburn.edu/bitstream/handle/10415/5930/Lewis%20Thesis%202017.pdf?sequence=4>
- Büyüköztürk, S. (2004). *Sosyal bilimler için veri analizi el kitabı (Data analysis handbook for social sciences)*. Pegem Publishing.
- Büyüköztürk, Ş., Kılıç-Çakmak, E., Akgün, Ö. E., Karadeniz, Ş., & Demirel, F. (2018). *Bilimsel araştırma yöntemleri [Scientific research methods]*. Ankara: Pegem Akademi.
- Çavuş, R. Öztuna Kaplan, A., & Laçin-Şimşek, C. (2019). *Ortaokul öğrencilerinin bilimsel alan gezilerine yönelik tutumları: Bilim merkezi örneği [Attitudes of secondary school students towards scientific field trips: Science center example]*. 1. Uluslararası İnfomal Öğrenme Kongresi [1st International Informal Learning Congress], 1-3 November 2019, Nevşehir, Turkey.
- Çengelci, T. (2013). Sosyal bilgiler öğretmenlerinin sınıf dışı öğrenmeye ilişkin görüşleri [Social studies teachers' views on out-of-class learning]. *Kuram ve Uygulamada Eğitim Bilimleri [Educational Sciences: Theory & Practice]*. 13(3), 1823-1841. doi: 10.12738/estp.2013.3.1410
- Creswell, J. W. (2019). *Eğitim araştırmaları nicel ve nitel araştırmanın planlanması, yürütülmesi ve değerlendirilmesi [Planning, conducting and evaluating educational research quantitative and qualitative research]* (H. Ekşi, Translation). İstanbul: Edam.
- Demir, Y. (2021). *Sosyal bilgiler dersinde veli eşliğinde gerçekleştirilen inceleme gezilerinin etkililiği [The effectiveness of field trips trips carried with parents in social studies course]* (Doctoral Thesis). Retrieved from the National Thesis Center of the Council of Higher Education. (Thesis No. 676230)
- DeWitt, J., & Storksdieck, M. (2008). A short review of school field trips: key findings from the past and implications for the future. *Visitor Studies*, 11(2), 181-197.
- Doğan, Y., Çiçek, Ö., & Saraç, E. (2018). Fen Bilimleri öğretmen adaylarının çevre bilimi dersi kapsamında gerçekleştirilen alan gezisi deneyimleri [The field trip experiences of pre-service science teachers in the environmental science course]. *Erzincan Üniversitesi Eğitim Fakültesi Dergisi [Journal of Erzincan University Faculty of Education]*, 20(1), 104-120. doi: 10.17556/erziefd.346487

- Doğanay, H. (1993). *Coğrafyada metodoloji genel metodlar ve özel öğretim metodları [Methodology, general methods and special teaching methods in geography]*. İstanbul: Milli Eğitim Basımevi.
- Farmer, J., Knapp, D., & Benton, G. (2007). The effects of primary sources and field trip experience on the knowledge retention of multicultural content. *Multicultural Education*, 14(3), 27-31.
- Flexer B. K., & Borun M., (1984). The impact of a class visit to a participatory science museum exhibit and a classroom science lesson. *Journal of Research Science Teaching*, 21(9), 863 - 873.
- Foskett, N. (2000). Fieldwork and the development of thinking skills. *Teaching Geography*, 25(3), 126-129. <https://www.jstor.org/stable/23756003>
- Funderburk, M. J. (2016). *An evaluation of supplemental activities before and after a field trip to a public garden: effects on student knowledge and behavior* (Master's thesis). <https://etd.auburn.edu/bitstream/handle/10415/5398/Final%20copy%20of%20Thesis.pdf?sequence=2>
- Gennaro, D. D. (1981). The effectiveness of using pre-visit instructional materials on learning for a museum field trip experience. *Journal of Research Science Teaching*, 18, 771-781.
- Göğebakan, Y. (2008). Sanat tarihi öğretiminde gösteri yöntemi ile gezi-gözlem yönteminin bilginin kalıcılığı açısından karşılaştırılması- (Eski Malatya Ulu Cami Örneği) [Comparison of demonstration method and field trips method in teaching art history in terms of retention of knowledge (The Case of Ulu Cami in Ancient Malatya)]. *Gazi Eğitim Fakültesi Dergisi [Journal of Gazi Education Faculty]*, 28(2), 197-220.
- Gökkaya, A., K., & Yeşilbursa, C. C. (2009). Sosyal bilgiler öğretiminde tarihi yerlerin kullanımının akademik başarıya etkisi [The effect of the use of historical places on academic achievement in social studies teaching]. *Türk Eğitim Bilimleri Dergisi [Turkish Journal of Educational Sciences]*, 7(2),483-506.
- Güler, A. (2011). Planlı bir müze gezisinin ilköğretim öğrencilerinin tutumuna etkisi [Impact of a planned museum tour on the primary school students' attitudes]. *İlköğretim Online [Elementary Education Online]*, 10(1), 169-179.
- Hore, H. (2007). Behind the waterfall: Why do fieldwork? *Geography Matters*, 10(1), 9-11.
- Hutzel, W., & Goodman, D. (2004). *Remotely accessible solar energy laboratory for high school students*. 34th ASEE/IEEE frontiers in education conference. October 20–23, 2004, Savannah, GA.
- Karakaş-Özür, N. (2010). *Sosyal bilgiler dersinde sınıf dışı etkinliklerin öğrenci başarısına etkisi [Effect of non-classroom based learning in social studies course on student success]* (Doctoral Thesis). Retrieved from the National Thesis Center of the Council of Higher Education. (Thesis No. 279700)
- Karakaş-Özür, N., & Şahin, S. (2017). Sosyal bilgiler dersinde sınıf dışı etkinliklerin öğrenci başarısına etkisi [The effect of out of classroom activities on student success in the social studies course]. *Ahi Evran Üniversitesi Kırşehir Eğitim Fakültesi Dergisi (KEFAD) [Journal of Ahi Evran University Kırşehir Education Faculty]*, 18(3), 324-347.
- Kennedy, M. D., (2014). *The benefit of field trips* (Master's thesis). Retrieved from <https://digitalcommons.georgiasouthern.edu/honorsthesis/60>
- Kılıç, Ç., & Girgin, S. (2019). Ortaokul öğrencilerinin çevreye yönelik tutumlarının 2-ÇDM Tutum Ölçeği kullanılarak çeşitli değişkenler açısından incelenmesi [Investigation of secondary school students' attitudes towards environment in terms of several variables by using 2-mev attitude scale]. *Eğitim ve Toplum Araştırmaları Dergisi [Journal of Education and Social Studies]/JRES*, 6(2), 215-232.
- Kızıltaş, E., & Sak, R. (2018) Anne-babaların perspektifinden alan gezisi etkinlikleri [Field trip activities from the parenting perspectives]. *Trakya Eğitim Dergisi [Trakya Journal of Education]*, 8(3), 468-480. doi: 10.24315/trkefd.332847
- Knapp, D., & Barrie, E. (2001). Content evaluation of an environmental science field trip. *Journal of Science Education and Technology*, 10(4), 351-357.
- Korkmaz, N. (2006). *Volkan topoğrafyası konularının öğretiminde gezi- gözlem yönteminin öğrenci başarısına etkisi [Effect of fieldtrip method on success in teaching the subjects of volcano topography]* (Doctoral Thesis). Retrieved from the National Thesis Center of the Council of Higher Education. (Thesis No. 187654)
- Köseoğlu, P., Mercan, G., & Pehlivanoğlu, E. (2020). 9. sınıf lise öğrencilerine yönelik okul dışı ortamda gerçekleştirilen ağaçbilim eğitimi projesinin değerlendirilmesi [Evaluation of the “education of treescience in out-of-school environment for 9th grade high school students” of the project]. *Bolu Abant İzzet Baysal Üniversitesi Eğitim Fakültesi Dergisi [Abant İzzet Baysal University Journal of the Faculty of Education]*, 20(2), 904-931. doi: 10.17240/aibuefd.2020..-559901
- McKenzie, S.J., (1986). Teaching teacher. *Round Reports*, 11(2), 9-10.
- Ocak, G., Kuş, G., & Küçükilhan, S. (2013). İlköğretim 4 ve 5. sınıf öğrencilerinin sosyal bilgiler dersindeki yapılandırmacı etkinliklere yönelik tutumları (Afyonkarahisar il örneği) [Primary 4th and 5th class students' attitude on constructivist activity which is used in social science lessons and social science's textbooks (Samples of Afyonkarahisar)]. *Balıkesir Üniversitesi Sosyal Bilimler Enstitüsü Dergisi [Balıkesir University The Journal of Social Sciences Institute]*, 16(29), 189-211.
- Öner, G. (2015). Sosyal bilgiler öğretmenlerinin ‘okul dışı tarih öğretimi’ne ilişkin görüşlerinin incelenmesi [Examination of the opinions of social studies teachers about outdoor history teaching]. *Türk Tarih Eğitimi Dergisi [Turkish History Education Journal]*, 4(1), 89-121. doi: 10.17497/tuhed.185618

- Orion, N. & Hofstein, A. (1991). The measurement of student's attitudes towards scientific field trips. *Science Education*, 75(5), 513-523. doi: 10.1002/sce.3730750503
- Orion, N., & Hofstein, A. (1994). Factors that influence learning during a scientific field trip in a natural environment. *Journal of Research in Science Teaching*, 31(10), 1097-1119. doi: 10.1002/tea.3660311005
- Özgen, N. (2011). Fiziki coğrafya dersi öğretim metoduna farklı bir yaklaşım: Gezi-gözlem destekli öğretim [A different approach to physical geography teaching method: Trip-observation supported education]. *Marmara Coğrafya Dergisi [Marmara Journal of Geography]*, 23, 373-388.
- Pehlivan, H. (1994). Eğitim bilimleri öğrencilerinin öğrenim gördükleri bölüme yönelik tutumları [Attitudes of educational science students towards the department they study]. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi [Hacettepe University Journal of the Faculty of Education]*, 10, 49-53.
- Rudman, C. L. (1994). A review of the use and implementation of science field trips. *School Science and Mathematics*, 94, 138-141. doi: 10.1111/j.1949-8594.1994.tb15640.x
- Salmi, H. (1993). *Science centre education, motivation and learning in informal education* (Unpublished doctoral dissertations). Helsinki University, Department of Teacher Education, Finland.
- Sarıer, Y. (2016). Türkiye'de öğrencilerin akademik başarısını etkileyen faktörler: Bir meta-analiz çalışması [The factors that affects students' academic achievement in Turkey: A meta-analysis study]. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi [H. U. Journal of Education]*, 31(3), 1-19. doi: 10.16986/HUJE.2016015868
- Sebasto, N. J. S., & Cavern, L., (2006). Effects of pre- and posttrip activities associated with a residential environmental education experience at the New Jersey School of Conservation students' attitudes toward the environment. *Journal of Environmental Education*, 37(4), 3-17. doi: 10.3200/JOEE.37.4.3-17
- Tavşancıl, E. (2010). *Tutumların ölçülmesi ve SPSS ile veri analizi [Measuring attitudes and data analysis with SPSS]*. Ankara: Nobel.
- Topçu, E. (2017). Sosyal bilgiler öğretiminde okul dışı öğrenme ortamları: Öğretmen adayları ile fenomenolojik bir çalışma [Out-of-school learning environments in social studies teaching: A phenomenological study with prospective teachers]. *International Education Studies*, 10(7), 1-27.
- Topçu, M. S., & Atabey, N. (2016). Alan gezilerinin ortaokul öğrencilerinin çevre konusundaki bilgi ve tutumları üzerine etkisi [The effect of field trips on middle school students' content knowledge and attitudes towards environment]. *YYÜ Eğitim Fakültesi Dergisi [YYU Journal Of Education Faculty]*, XIII(I),494-513.
- Tortop, H. S. (2013). Bilimsel alan gezisi tutum ölçeği adaptasyon çalışması [Adaptation study of attitude scale towards scientific field trips]. *Bartın Üniversitesi Eğitim Fakültesi Dergisi [Bartın University Journal of Faculty of Education]*, 2(1), 228-239.
- Tortop, H. S., & Özek, N. (2013). Proje tabanlı öğrenmede anlamlı alan gezisi: güneş enerjisi ve kullanım alanları konusu. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi*, 44, 300-307.
- Tutkun, C., Aydın-Kılıç, Z. N., Balcı, A., & Kök (2019). Okul öncesi öğretmenlerinin alan gezisi etkinliğine yönelik görüşlerinin incelenmesi [Examination of preschool teachers' views about field trip activities]. *OPUS-Uluslararası Toplum Araştırmaları Dergisi [International Journal of Society Researches]*, 14(20), 469-487. doi: 10.26466/opus.571498
- Yıldırım, H. İ. (2020). The effect of using out-of-school learning environments in science teaching on motivation for learning science. *Participatory Educational Research (PER)*, 7(1), 143-161. doi: 10.17275/per.20.9.7.1



Abbreviations in Homonymy

Aynur Humay Bayramli¹

¹ Azerbaijan State Exam Center. ORCID: <https://orcid.org/0000-0002-6780-894X>
Email: a.bayramli@dim.gov.az

Abstract

This article discusses the phenomenon of homonymy in the field of abbreviation. Until now, homonymy has rarely been considered along with the topic of abbreviations, and yet it is all closely interconnected, since the frequency of using homonymous abbreviations in English literature is quite high. Despite the fact that there are quite numerous, albeit fragmentary, studies on the problems of abbreviation in modern languages, there is a small amount of research in the field of abbreviation-homonymous relations, abbreviated lexical units remain in many respects a mystery in linguistic terms, since in relation to them one has to consider from a specific point of view such fundamental problems as the problem of the structure of a word and its meaning, the problem of a morpheme, etc. This complexity explains the heterogeneity of opinions, and sometimes a contradictory approach to homonymous abbreviated lexical units.

Keywords: Homonymy, Abbreviation, Acronyms, Homoacronyms, Phenomenon

1. Introduction

One of the phenomena inherent in all languages and characterizing the lexical-semantic system of each language is homonymy. Due to the fact that this phenomenon is widespread in many languages and is of great importance for characterizing the lexical-semantic system of a language, the problem of homonymy attracts the attention of both domestic and foreign linguists.

Homonymy is a phenomenon that directly follows from the fact of the ambiguity of the plan of expression and the plan of the content of the language. Thus, the problem of homonymy turns out to be part of a more general problem of the relationship between form and content in a language, which makes it necessary to study it in depth. Homonymy is a manifestation of that special property of a linguistic sign, due to which identical signifiers can correspond to different signifieds. Thus, the study of the phenomenon of homonymy also meets the needs of applied linguistics. Homonymy is a certain obstacle in the process of communication. Often the listener finds himself at a loss as to which of the several different meanings expressed by a given language form should be chosen in order to correctly understand the message. Difficulties can arise not only for the listener, but also for the speaker, who, in order to optimize the communication process, tries to build the statement so that it can be understood unambiguously. Homonymy introduces difficulties in the process of mastering a foreign language by pupils and students, because the analysis of such forms significantly complicates the perception of a foreign text or message. Homonymy causes no less difficulties when building systems for automatic text processing, as well

as in lexicographic work – when determining the boundaries between individual words, when developing ways to represent homonyms in a dictionary, when choosing frequency counting units dictionary, etc. In turn, this leads to difficulties and problems in translation.

Homonymy is the hindrance in communication. Participants, which are the necessary prerequisites of any communicative act, include a sender of the message, its recipient and hindrances that homonymy brings in. Due to hindrances the message is perceived by the recipient with such a meaning, which was not foreseen by a sender (Pukaliak, 2018). The beginning of the process of shortening words dates back to ancient times. The abbreviation in various types of written speech is as old as the written language itself. The abbreviation (from Latin *abbrevio* – I shorten) traces its history back to the Sumerians, whose writing is considered the first recorded on Earth (4th century BC). Ancient scientists and rhetoricians believed that the newly formed abbreviated units had a different emotional coloring compared to those full variants of these units that traditionally expressed this meaning. Words can be used as a linguistic means of influencing and influencing the addressee of speech. Modern English has developed the abbreviation Xmas < Christmas, which goes back to the Greek words Christ < Khri'stos, X < chi, p.Chr.n. < post Christum natum (from the birth of Christ).

Based on the fact that abbreviation processes reflect the logic characteristic of the development of any national language, striving for the simplicity of linguistic expression and the preservation of its informational significance for communication purposes, it is believed that abbreviation originally arose only as a means of economy in writing, only much later (in English language – in the 16th century, in Russian – at the end of the 19th century), abbreviated units began to first appear in colloquial speech and only then move into the styles of written speech, the exceptions, of course, are terminology and author's neology. Reading graphic abbreviations by name by letter names, gradually forming these readings into a stable word – this is one of the ways to the first lexical abbreviations in many languages. Gradually, the number of abbreviations increased markedly.

Another circumstance that arises as a result of the prevalence of abbreviations, namely, the formation of homonyms. We note in passing that it is the large number of short monosyllabic words in English that largely explains the prevalence of homonymy in this language. Indeed, longer words can match in one part and differ in another part, while shorter ones are more likely to match completely, hence the numerous homonyms, such as can – I can and can – preserve.

Homonyms that arise on the basis of abbreviations can be represented in the form of two fundamentally different groups – one group consists of abbreviations that coincide with existing full words, for example, CAR – Canadian Association of Radiologists, CAT – Civil Air Transport. Especially many of these homonyms arise due to truncations like campaign – camp, artillery – art, as a result of which camp – an abbreviation for campaign and the full word camp – camp coincide.

Another group of homonyms are polysemantic abbreviations. When reducing various polysyllabic words, their first parts may coincide, forming homonyms – abbreviations, for example: sub – subaltern, sub – subeditor, sub – subject, sub – subjunctive, sub – sublimation, sub – submarine, sub – subscription. Homonymous abbreviations are even more numerous, arising from the fact that various names consisting of several words with the same letters form homonyms, for example: RTC – Railway Transport Corps, RTC – Recruit Training Centre, RTC – Reserve Training Corps, RTC – Royal Tanks Corps. If the homonyms of the first group (such as art – artillery and art – art) practically cannot disrupt communications, since they are usually used in various contexts, situations, etc., then the homonyms of the second group can introduce some confusion into the acts of communication.

2. Objective of the study

The purpose of the work is to give a general description of abbreviated lexical units and the linguistic phenomenon of homonymy, defining the relationship between them, identifying the difficulties of translating homonymous abbreviations and suggesting ways to solve them.

3. Methodology

Research methods include direct contextual analysis, cognitive-linguistic, or linguistic description. With the help of this method the main features of abbreviations in homonymy is clarified. The investigation of the problem may be considered completely for it is not possible to cover all the study by using one method. That is why the study of these concepts is needed to investigate deeply.

4. Presentation and discussion

Abbreviations of words are widespread in both oral and written speech. Of course, most abbreviations first appeared in oral speech, and then gradually entered written speech. They are found in many words of Latin-French origin. In modern English, abbreviations are mostly used in military documents (especially in the United States). About half of the words used in such documents consist of abbreviations (Borisov, 1972). Abbreviations are also widely used in technical and specialized literature. In fiction, they are used relatively little, except for the abbreviated forms of auxiliary verbs: `ll (shall, will) and `d (had, would, should) and so on. These abbreviated forms of auxiliary verbs are mainly used with personal pronouns and are often found in the direct speech of the heroes of the work, even in the speech of the author. In general, various types of abbreviations are more widely developed in modern English than in Azerbaijani (Arakin, 1958).

Due to the variety in their structure, cuts are very different. In the formation of homonyms, they can be grouped as follows:

- 1) An abbreviated word is homonymous with another unabbreviated word. For example: flu(e) – clever (abbreviated from the word influenza) – flue (chimney), flue (fur), flue (fishing net);
hip – dejection (derived from the word hypochondria) means "spirit" and "disheartened" and is homonymous with the word "hip", hip (deaf) -hip- (the part where the human body and leg join) etc.
tick – giving or receiving loans and loans – tic (irritability) (derived from the word ticket)
tick (the face of the bed), tick (tick, tick);
tract – tract (derived from the word tractate) – tract (land, forest), water area, uninterrupted strip;
- 2) Abbreviation of auxiliary verbs with personal pronouns and homonymization with unabbreviated words.

For example,

- I'll (I + shall or will) – isle (island) and aisle (passage between rows);
- I'd (I + had or would or should) – eyed (eye – the past tense and past participle of the verb to observe);
- he'd (he + had or would or should) – heed (carefully and carefully watch); we'd (we + had or would or should) – weed.

It is distinguished by the grammatical homonymy of the morpheme `d, which was formed as a result of shortening the auxiliary verbs had, would, should (Tishler, 1988).

- 3) An abbreviated word is homonymous with another abbreviated word. For example:
gin – a trap, to ensnare (derived from the word gin) – gin – gooseberry ore (derived from the word Geneva);
spec – trade (derived from the word speculation) – speck – spot, stain (derived from the word speckles);
van – vanguard (derived from the word vanguard) – van – van, cart (derived from the word caravan).

In English homonymy, there are cases of homonymization of abbreviations called acronyms with different words. Acronyms are capitalized abbreviations that are read not as letters but as words according to the phonetic norms of the English language. When creating acronyms, they try to make them easier to remember and pronounce, so that such abbreviations form homonyms with any common word. For example, man (Military Aviation Notice) is an order to ensure the flight safety of military aircraft (abbreviated from the word ink) – man – man; mass (Modern Army Supply System) the new supply system of the US ground forces (abbreviated form of the word ink) – mass – mass, bulk, collect, collect.

Such homonymization is very convenient during communication, as it helps to remember military terms, and also saves time and paper. But such homonyms are not of great linguistic interest.

Thus, the role of homonyms is great, both in enriching the vocabulary of the language and in order to express subtle meanings in the language.

In the 21st century, brevity has become the closest sister of not only talent, but also a close friend of most Internet users. Brevity is sometimes a close relative of saving time and money. If Pushkin were alive, he would have gone bankrupt by sending sms, write every time "I remember a wonderful moment, you appeared in front of me ..." instead of the modern "ILY" (I Love You). Be sure, sending another "SY" (see you), that the interlocutor will understand you correctly. We also advise you not to write such messages to older people and do not forget that in oral speech such words sound at least strange, but for your grandmother it is also intimidating. How not to get lost in the world of abbreviations read below and right now! The most common and short ones do not need a lengthy introduction. For those whose eye hurts "a lot of letters", Anglophiles have adapted the following spellings of common words:

***b** – be, **asap** – as soon as possible, **b4** – before, **bout** – about, **C** – see, **dey** – they **idk** – I don't know, **l8er** – later, **gr8** – great, **str8** – straight, **ttyl** – talk to you later **wht** – what, **w8** – wait, **U, Y** – you, **u2** – you too, **cnt** – can't, **gd** – good, **luv** – love **n** – and, **r** – are, **lt** – want, **2** – too, to, **2day** – today, **4** – for*

In recent years, there has been a crisis of oversaturation of the language with initial abbreviations that are inconvenient for pronunciation and difficult to remember. But the language coped with this crisis by internal means: the tendency to lexicalize abbreviations intensified, as a result of which a qualitatively new way of abbreviation appeared – homoacronymy, which refers to the creation of abbreviated units that coincide in their phonetic structure with commonly used words (Voloshin, 1966). Homoacronyms are very special, unique lexical units; these are acronyms homonymous with ordinary words: *CAT* "college of advanced technology" – higher technical college and a cat "cat"; *DEM* "design for economic manufacture", *dem* "demodulator" 'demodulator', *TOP* "tobacco prevention" 'smoking warning', a top 'the highest point of something', developed and important degree of abbreviation. They are especially willing to resort to homoacronymy when creating special terms, which is quite understandable: the abundance of terms makes it difficult to remember them, but "fitted" to any well-known and commonly used word, they quickly enter into speech use, and then become fixed in the language, since the stereotype of abbreviation forms makes it possible to easily store them in memory (DVD "Digital Video Disk", hydroelectric power station). As a model, not only the most familiar word is chosen, but also such that its meaning is associated with the internal form, the meaning of this term. At the same time, morphological and lexical aspects closely interact in the formation of homoacronyms: the first determines the structure of the homoacronym, the second determines its semantics (Borisov, 1972). This phenomenon is called correlative abbreviation, under which V.V. Borisov, who has comprehensively studied the features of abbreviated units and, especially, acronyms, understands the process of parallel, simultaneous creation of abbreviation and correlate, as well as cases of selecting new correlates to existing values (Borisov, 1972). Homoacronyms are often used to obtain an advertising effect, a psychological impact on the recipient. Thus, they facilitate the work of the translator, suggesting to him the purpose of this object, indicating its properties: BEST "blitz electro shock therapy" and the best "best". Returning from homoacronyms to abbreviations in general, it should be noted that an abbreviation is usually unambiguous if you focus on its referent. Here, however, we have to add that, at the same time, many of the abbreviations with different referents have the same or approximately the same alphabetic (syllabic) composition (Varina, 2004), the same graphic form: with almost complete lack of motivation for these units (for example, initial abbreviations) even in a broad context, such homonymy creates tangible difficulties.

English and American abbreviations, made up of the initials M and R in different combinations (MP, M / P, M. P., mp, m. p., mP), denote 28 different concepts, including as many as five types of police: Marine Police, Metropolitan Police (London), Military Police, Mounted Police, Municipal Police.

A deliberately created pair is curious: CAT (homonym English, "cat") and MOUSE (homonym English, "mouse"), and the purpose of the cat – CAT (Celestial Atomic Trajectory = space rocket with a nuclear charge) – to destroy the mouse – MOUSE (Minimum Orbital Unmanned Satellite Earth = artificial Earth satellite without a crew with a minimum orbit).

Such cases are a tangled tangle of meanings and allusions, which is a play on words. In order to more clearly show examples of homonymous abbreviations, let's turn to the context and take the abbreviation AC as an example:

1) – aircraft carrier

When the U.S. Navy really needs to impress people, it flies them out to one of its super AC. Standing 20 stories above the water and stretching 1,092 feet (333 meters) from bow to stern (about as long as the 77-story Chrysler Building is tall), the sheer bulk of these ships is awe-inspiring. But the really amazing thing about a supercarrier isn't its size; it's the intense scene on its flight deck." [www.howstuffworks.com/aircraft-carrier.htm]

2) alternating current – alternating current

"The number of cycles per second is the frequency of the alternating current, the most common AC frequency being 50 c.p.s."

"We know the AC to be continually changing its direction."

3) air-conditioning – air conditioning

"How to survive without AC? You will need: a fan, ice, linen sheets, spicy food, wristbands, a bandanna, and a window fan exhaust."

4) analog computer – AVM

"These are different from a digital computer because an AC can perform several mathematical operations simultaneously. It uses continuous variables for mathematical operations and utilizes mechanical or electrical energy." [www.buzzle.com/articles/different-types-of-computers.html]

5) access control

"Electronic AC uses computers to solve the limitations of mechanical locks and keys. A wide range of credentials can be used to replace mechanical keys. The electronic AC system grants access based on the credential presented. When access is granted, the door is unlocked for a predetermined time and the transaction is recorded. When access is refused, the door remains locked and the attempted access is recorded."

6) adaptive control

"This work is devoted to exploration of approaches of multilevel control organization in autonomous AC systems. Examined approach is based on the concept of decomposition of subsystems of autonomous AC system into layers, each of them is corresponding to appropriate control level. Implementation of this approach in applied control system of the given controlled object – mobile robot, has been demonstrated. Results of experimental researches of developed control system properties have been presented."

7) automatic computer

"FLAC, the Florida Automatic Computer, was an early digital electronic computer built for the United States Air Force at Patrick Air Force Base (PAFB), Florida to perform missile data reduction. The computer began service in 1953." [dbpedia.org/page/Florida_Automatic_Computer]

8) axiom of choice There are a number of weaker axioms which are implied by the full axiom of choice. Some of these are valid or accepted more generally than the full AC, and/or suffice for some of the usual applications of choice."

9) account current – current account

"Bank free of maintenance and transaction fees with an AIB Personal SA(AC)."

10) administrative county – administrative county

"An AC was an administrative division in England and Wales and Ireland used for the purposes of local government. They are now abolished, although in Northern Ireland their former areas are used as the basis for lieutenancy." [Amazon.com: Familypedia]

11) Appellate Court -

Many U.S. lawyers title their AC a court of appeal or court of appeals. Historically, others have titled their AC a court of errors (or court of errors and appeals), on the premise that it was intended to correct errors made by lower courts."

12) abdominal cavity

After the peritoneum is opened, identify the major organs as they lie within the AC.

In this dissection, the lower part of the peritoneum has been reflected downward in order to display the peritoneal folds in this region:

lateral peritoneal fold lpf produced by the inferior epigastric artery.

medial peritoneal fold mpf produced by the embryonic umbilical arteries."

We noted a qualitatively new way of abbreviation – homoacronymy. Homoacronyms are very special, unique lexical units; These are acronyms that are homonymous with common words. They are especially willing to resort to homoacronymy when creating special terms, to obtain an advertising effect, etc. In the formation of homoacronyms, morphological and lexical aspects closely interact: the first determines the structure of the homoacronym, the second determines its semantics. This phenomenon is called correlative abbreviation. Returning from homoacronyms to abbreviations in general, we noted that the abbreviation, as a rule, is unambiguous, if you focus on its referent, but at the same time, many of the abbreviations with different referents have the same or approximately the same letter (syllabic) composition, the same graphic form: with the almost complete lack of motivation of these units, even in a broad context, such homonymy creates tangible difficulties, which can be seen from the many illustrative examples with the use of homonymous abbreviations.

From a translation point of view, such abbreviations can be seen as a potential source of error and as a difficult translation task. In case of accidental, unintentional coincidence of the abbreviation form with any other word, the translation of the abbreviation is carried out on a general basis, as if there were no such homonymy.

But “intentionality” is considered completely differently if the homonymy is used by the author for a certain stylistic purpose, or if the decoding is “tailored” to a common language word, that is, it is deciphered as if it were not an abbreviation, or with the so-called “joking transcripts, etc. All these are puns, the successful transfer of which to the TL is a difficult, and sometimes impossible task.

Consider the following example. How to translate a playful transcript of Amer. NASA – Never a straight answer – “never (giving) a direct answer”. In its actual meaning, National Aeronautics and Space Administration, the abbreviation is transferred unchanged into French and German and transcribed into Russian and Bulgarian; therefore, it is possible to translate a pun by issuing a playful phrase of four meaningful words beginning with the letters H, A, C and A. Depending on the specific case and the stylistic task set, other solutions are possible: one of them is simply to give the decoding a comic meaning, not corresponding to the real one, for example, “National absolutely ridiculous administration” (Barkhudarov, 2003).

Of course, homonymous abbreviations present a particular difficulty for translation. The issue of the recipient's perception of English abbreviations is becoming more and more relevant. Due to the special tendency of the English language to compression, economy of language means, simplification of grammatical structures, we have a well-developed system of abbreviations and broad prospects for its further development. On the one hand, these are endless opportunities for creating ever new abbreviations, their speedy adaptation in the English language system, on the other hand, these are certain difficulties associated with contradictions in this system, with its imperfection. First of all, these are the problems of translating abbreviations. The accuracy and unambiguity of the abbreviation is important in any field of science, therefore, a special approach is needed to translate this kind of language units. In English, there is a tendency to shorten any term. The Russian language lags far behind in the quantitative sense of abbreviations: what is called a term in Russian, in English turns into an abbreviation: LN “liquid nitrogen” “liquid nitrogen”.

The abbreviation, as a rule, is unambiguous, and this, as we have already said, makes translation easier. Here, however, it is necessary to recall that, at the same time, many of the abbreviations with different referents have the same or approximately the same literal (syllabic) composition, the same graphic form: despite the almost complete lack of motivation of these units (for example, initial abbreviations), even in a wide context, such homonymy creates tangible difficulties and causes translation errors. Even in a special text, it is not always possible to be sure of the correct choice of abbreviations – for example, the English abbreviation SRF stands for Supplemental Reserve Facility (a mechanism for financing additional reserves) and special reserve fund (special reserve fund), and RI can also be deciphered as a proper name Rhode Island (Rhode Island), and as a routing indicator (the address part of the message header). In this case, we can talk either about homonymy – the coincidence of the form of one abbreviation with the form of another, or about the coincidence with the full form of a completely different word.

From a translation point of view, such abbreviations can be seen as a potential source of errors. In case of accidental, unintentional coincidence of the abbreviation form with any other word, the translation of the abbreviation is carried out on a general basis, as if there were no such homonymy (WHO – World Health Organization is translated into Russian as WHO, and not as WHO- кро).

When translating abbreviations, decoding is used; deciphering is the establishment of a correlate and determination of the meaning of a given abbreviation in a particular context.

The problem of abbreviation attracts more and more attention of linguists. The widespread use of a wide variety of abbreviations is a kind of language response to the scientific and technological revolution taking place in the world. And it is not surprising that the abbreviation is used most intensively to replenish the vocabulary of new, rapidly developing branches of science and technology: astronautics, nuclear energy, programming, etc. Abbreviation has recently become one of the most productive ways to replenish the vocabulary of many languages. The number of abbreviated lexical units in developed languages is tens of thousands.

Informative capacity, ease of pronunciation, easy memorability of abbreviations contribute to the growth of their number and use in various areas of communication, and hence the need for their study increases. The studies devoted to the problems of abbreviation contain many controversial and contradictory statements. There is still a lot of uncertainty about the nature of abbreviations, about their relationship with the language system, there is no strict, clear classification of the structural types of abbreviated lexical units. This work is an attempt to fill one of these gaps by considering the issue of homonymy in the field of abbreviation.

5. Conclusion

Abbreviation is one of the most popular and productive ways of word formation today, which is used not only in Russian or English, but also in all European languages. The history of abbreviation from the moment of its inception to the present day has more than a dozen years, however, students of a foreign language often do not pay due attention to this method of word formation. Meanwhile, the study of abbreviation is becoming an obvious necessity today, without which it is impossible to imagine the general picture of word formation, since the abbreviation serves almost all spheres of human activity. Abbreviations help to minimize speech effort, language tools and time, while remaining clear and easy to understand. Abbreviations are also necessary in order to simplify long names in formal business speech. At the same time, words with a complex internal structure have a compressed external form, which allows them to be used both in colloquial speech and in scientific works. Abbreviations-tours, gaining mass distribution in special spheres, are included as equal words in the speech of the whole people. The modern state of languages is characterized by the processes of globalization, which have led to the emergence of a special kind of names for objects, concepts and concepts, together with increased requirements for speech economy, as a result of which a huge layer of abbreviated vocabulary has arisen. Interest in the specifics of creating abbreviated nominations in different languages and in the peculiarities of their use in various types and genres of speech is due to the fact that abbreviation turns out to be one of the word-formation methods that meet the pragmatic attitudes of our time. The term "abbreviation" in modern domestic linguistics means the process, "a way of creating nominations for those concepts and realities that were originally designated descriptively, using attributive phrases", and "abbreviation-round" is the result of this process. The abbreviation raises many problems from the point of view of the theory of word formation. Until now, the question of how legitimate it is to consider abbreviation as one of the methods of word formation is being discussed. There is no complete unity on this issue, however, most researchers recognize the abbreviation as one of the ways of word formation, but significant reservations are made.

Homonymous abbreviations present a particular difficulty for translation. The issue of the recipient's perception of English abbreviations is becoming more and more relevant. Due to the special tendency of the English language to compression, economy of language means, simplification of grammatical structures, we have a well-developed system of abbreviations and broad prospects for its further development. On the one hand, these are endless opportunities for creating ever new abbreviations, their speedy adaptation in the English language system, on the other hand, these are certain difficulties associated with contradictions in this system, with its imperfection.

References

- Arakin, V.D. (1958). Homonyms in English // *IYASH*, 4, 45 p.
- Arnold, I.V. (1959). *Lexicology of modern English*. M., 176 p.
- Alekseev, D.I., Borisov, V.V. (1977). *Abbreviation in the conditions of the scientific and technical revolution*. Scientific and technical revolution and the functioning of the languages of the world. M.: Nauka, p. 31-217.
- Barkhudarov, L.S. (2003). *Language and translation*. M., 240 p.
- Barkhudarov, L.S. (2004). *Contextual meaning of the word and translation*. Sat. scientific tr. / Moscow. ped. in-t foreign languages, 365 p.
- Babarykin, V.S., Denisov, K.M. (1996). To the question of abbreviations in the modern American version of the English language. *Questions of linguistics and teaching of foreign languages. Ch. 1. Kursk*, 187-188.
- Borisov, V.V. (1972). *Abbreviation and acronyms*. Military and scientific and technical abbreviations in foreign languages. M.: Military Publishing, 319 p.
- Berkov, V.P. (2004). *About dictionary translations*. Mastery of translation. M, 200 p.
- Eliseeva, V.V. (2003). *Lexicology of the English language* [Text]. M., 226 p.
- Ermolovich, D.I. (2004). *Fundamentals of professional translation*. M, 188 p.
- Ermolovich, D.I. (2011). *English-Russian and Russian-English dictionary* [Text]. M.: AST, Astrel, Harvest, 1135 p.
- Eldyshev, A.N. (1984). *Motivation of initial contractions and methods of their research*. M.: MGPIIYa, – p. 12.
- Ivanov A.O. (2005). *English non-equivalent vocabulary and its translation into Russian*. St. Petersburg, 189 p.
- Kubryakova E.S. (1981). *Types of linguistic meanings*. M.: Nauka, 200p.
- Kuznetsova V.O. (1978). *The system of semantic word-spheres of homonymy* [Text]. M., 305 p.
- Lopatnikova, N.A. (1961). Abbreviation as one of the ways of word formation in modern French. *Proceedings of Gorky ped. Institute of Foreign Languages*. – Gorky, – Issue. 19. – P. 244p.
- Martinet, A. (1963). Fundamentals of General Linguistics *New in Linguistics*. M., Issue. 3. p. 532 – 533.
- Pukaliak, M. Zinchuk, I (2018). Theoretical aspects of the problem of homonymy in English. http://www.allbest.ru/UDC811.111.8.81*373.217
- Pyrikov, E G. (1984). *Abbreviated words in languages with hieroglyphic and alphabetic writing systems: dis. ... Cand. philol. Sciences*. M.: Military Institute, 182 p.
- Shirshikova. A.A. Specificity of external functional-grammatical homonymy of prepositions in Russian general language discourse. *Bulletin of the Chelyabinsk State University* 2018 No. 6(416). Philological Sciences. Issue. 113. p. 210-218.
- Sapogova, L.I. (1967). On the reasons for the reduction in the English language. *Collection of works of graduate students of the Voronezh state. un-that. Voronezh, Issue. 3. Part 2*. 183-186.
- Shevchuk V.N. (1985). *Military terminological system in statics and dynamics: dis. dr fi-lol. Sciences*. M.: Military Institute, 229 p.
- Tyshler, I.S. (1988). *Homonymy in modern English*. Saratov, 186 p.
- Voloshin, E.P. (1966). *Abbreviations in the lexical system of the English language: dis. ... cand. philol. Sciences*. M., 134 p.
- Varina, V.G. (2004). *Lexical semantics and the internal form of language units*. Principles and methods of semantic research: [sat. st.] / Editorial board: V.N. Yartseva and others [Text]. M.; 213 p.
- Vereshchagin, E.M., Kostomarov, V.G. (2003). *Linguistic and regional theory of the word*. [Text]. M.: Russian language, – 285 p.
- Vinogradov, V.S. (2004). *Introduction to Translation Studies* [Text]. M.; 2004. 224 p.
- Vlakhov, S., Florin, S. (2005). *Untranslatable in translation* [Text]. M.: International relations, 198 p.
- Zyabirova O.Yu. (2011). *Linguistic features of the language of television and radio announcements* [Text]. University readings. Materials of scientific and methodological readings of PSLU. Part V. Pyatigorsk, PSLU, – p. 163-168.

Experiences of Preservice Teachers on Online-Based Microteachings: New Insights for Initial Teacher Education (ITE) Programs

Bilge Aslan Altan¹

¹ Faculty of Education, Educational Sciences, Muğla Sıtkı Koçman University, Muğla, Turkey

Correspondence: Bilge Aslan Altan¹, Faculty of Education, Educational Sciences, Muğla Sıtkı Koçman University, Muğla, Turkey. E-mail: bilgeaslan@mu.edu.tr

Abstract

Practicing online teaching activities has been favored quite some time, and it continues to gain popularity with the evolving technology as well as global dynamics (as COVID). Online-Based Microteachings (OBM), in this sense, can enforce preservice teachers to practice digitally-saturated new, possibly an ongoing, set of skills that will contribute to their teaching behaviors in future. Leaning on this idea this paper outlines the experiences of preservice teachers on online teaching activities that are inspired by microteaching strategy, which may initiate a discussion point for teacher trainers and trainees to practice more online-saturated teaching activities that can be developed as online-based microteachings in initial teacher education (ITE) programs. Doing so, the study was built upon case study design including 50 (32 females, 18 males) participants of preservice teachers from different fields. Findings indicate that preservice teachers had many new experiences that may reinforce their existing and future teaching skills as well as many challenges that resulted from digital-based drawbacks. The documented experiences can be used as evidences for international researchers and teacher educators to empower preservice teachers' online teaching skills because apparently, they had real challenges to design and practice online teaching activities in this local-context. Implications of the study suggest that ITE programs may need additional contents in which necessary online pedagogy and skills are harmonized to enable preservice teachers to be much more-ready for future circumstances and to be familiar with online teaching qualifications.

Keywords: Online Teaching Activities, Online-Based Microteachings, Preservice Teachers, Teacher Education, Online Pedagogy

1. Introduction

Teaching is a dynamic process in which teachers continuously experience new challenges and practice new skills. Digital transformation, which can be challenging transferring period of set of skills into teaching (Flores, 2020), is one of the hot topics in teaching excellence and profession (Falloon, 2020). Very recently, during pandemic period many teachers and educators have had to use digitally-saturated teaching skills and learning environments

to continue in instruction. This period has triggered to question what the teaching competencies should be for present and future teaching intentions (Cochran-Smith, 2021; Darling-Hammond, 2020) because there were certain drawbacks resulting from technical, pedagogical, and psychological reasons.

Although there is a continuous support for teachers that is wished to encourage in-service teachers to be more flexible in applying curriculum according to their local and emergent contexts (Sinnema & Aitken, 2013), preservice teachers are empowered in teaching skills in initial teacher education (ITE) programs. To do so, ITE programs are structured with necessary and fundamental pedagogy knowledge and congruent teaching practices. Therefore, to a greater extent, preservice teachers are trained to be ready in real classroom environments, to overcome (un)expected challenges, and to increase in teaching excellence. Still, ITE programs are frequently criticized due to having risks of limited applied courses or contexts for teaching practice (Cochran-Smith, 2021; Loughran, 2006).

In order to deliver pertinent teaching practices during training, microteaching can be used as a viable agent for preservice teachers' systematic progress in the act of teaching (Karlström & Hamza, 2019; Merc, 2015). Concurrently, microteachings, as early practices for preservice teachers in ITE programs, can be particularly favored by many teacher educators (Görge, 2003; Sevim, 2013) to experience different teaching contexts before facing real school environments and classrooms. However, to answer the need for digital transformation and to proceed with different experiences in teaching practices, this study tends to combine the notion of microteaching and online teaching. Eventually, the study proposes an understanding in which preservice teachers can practice online-based microteaching through the eyes of preservice teachers and their experiences.

1.1 Microteaching vs. Online-Based Microteaching

Microteaching, firstly proposed by Dwight W. Allen and his associates from Stanford University in 1960s, is meant to improve practice in teaching, guide to preservice teachers in their teaching journey, and discuss the teaching quality with teacher educators in a controlled area (Allen, 1967). Microteaching is assumed as a method to provide opportunity for preservice teachers through which they can experience individually designed teaching activities in a given time (Görge, 2003), in a relatively less stressful environment (Amobi, 2005), and with the concerns of demonstrating addressed teacher behaviors. Microteaching strategy is also an advantageous way to enable pre-service teachers to be more adaptive in teaching behaviors before starting the profession (Özdemir, 2019). Such experiences are very important for preservice teachers to make critical reflections on numerous mindsets while advancing in their career (Kusmawan, 2017).

Although it has mighty assets in teaching practicum, microteaching surely carries out certain units for fruitful results (Innocent, 2017). Compiled studies suggest that (Allen, 1967; Karlström & Hamza, 2019; Koech & Mwei, 2019; Zalavra & Makri, 2022) microteaching, should include three main stages and it initially starts with a planning/organization for the intended activity. The planning of the teaching activity should include set of information as outlined in a lesson plan. In other words, preservice teachers should design a micro version of an instruction, which is similar to real-time teachers' instructional designs. Secondly, the intended activity should be delivered in a teaching practice, which has limited time. Here, the planned activity is performed by the preservice teacher(s). Thirdly, the completed teaching performance is discussed and evaluated by peers and supervisors (teacher educators/instructors) so that necessary reflections and suggestions are indicated. Eventually, microteaching employs individual and collaborative teaching activities bridging theory and practice, accumulates more experiences for a better understanding of teaching and learning processes (Reddy, 2019), and encourages preservice teachers to properly use instructional strategies according to different contexts.

Even though microteaching is mostly performed as a traditional class-based practice, its concept has been extended due to the recent and unwelcomed global phenomenon: COVID-19. This intruder has turned many routines upside down, and teaching activities at all levels have had to continue online in worldwide (Kim, 2020). The pandemic has influenced structures of teacher education programs as well as teacher educators' way of delivering the program and reaching an outcome (Flores & Swennen, 2020; Kidd & Murray, 2020; Moyo, 2020). Online teaching, which has shined in the emergency distance education due to compulsory reasons, could produce digital

solutions for learning and teaching practices (Bayındır, 2021). Therefore, switching to online-based microteaching can enable preservice teachers and teacher educators to continue in adapting new circumstances (Zan & Zan, 2020) as well as evolving collaboratively with the educational technology.

Online teaching action, surely, has been performed in different teacher education programs by academics for variety of reasons such as a student-directed assessment tool (Zhang, Yan & Gronseth, 2020), and/or as a replacement for lost practicum courses (Monroe, Mendez & Nutta, 2020). Although online-based teaching intentions are appreciated in literature, Dymont and Downing (2020) make an emphasis on the disintegration of online teaching activities and pedagogical concerns of ITE programs in their systematic review study of pre-pandemic period. At this point, studies (Kidd & Murray, 2020; Zalavra & Makri, 2022) underline the idea of teachers as designers in online teaching activities, and they add that preservice teachers should design their original online context by pursuing the necessary steps of an instruction (gaining attention, delivering the content, evaluation etc.).

In such a background, microteaching can be reorganized with online-based microteaching. Researchers (Sarimanah, Efendi, & Dewi, 2020; Zalavra & Makri, 2022) tried to encourage preservice teachers to practice online-based microteaching (OBM) activities both to make up the negative side-effects of COVID-19, and to map out new horizons to improve (digital) teaching skills. Online-Based Microteaching experiences in teacher education can enforce preservice teachers to practice digitally-saturated new, possibly an ongoing, set of skills that will contribute to their teaching behaviors in future. Within OBM, preservice teachers can organize their teaching activities, and design their materials as they do in microteaching, but they should re-organize their activities respecting necessary online fundamentals and pedagogies, and deliver the performance online. Doing so, they can have more experiences with distance education, interactive teaching-learning environments, opportunities to teach in front of a camera, digital skills they are wished to have, and feedback on their performance and capabilities in an online manner.

1.2 Relocating microteaching as online-based microteaching

Educational ecosystem is full of surprises and Mishra (2020) reminds educators to be sincerely adaptive when technology is concerned. Besides COVID, there are unprecedented events as well as global changes that trigger using technology-enhanced teaching activities and online pedagogies. Here, as a very starting point, ITE programs are expected to take responsibilities to upgrade preservice teachers' skills to transfer them to future conditions. Connectedly, the study is inspired by the idea of both empowering online teaching skills of preservice teachers and examining their experiences to start a discussion point to make better decisions in teacher education.

In particular, teaching activities mostly comply with variety of pedagogical methods and strategies. In this respect, preservice teachers are expected to be qualified in many skills to deliver a specific content via an effective channel. Microteaching, which has been emphasized to be a powerful strategy for preservice teachers to experience combined teaching activities and pedagogies (Baştürk, 2016; Karlström & Hamza, 2019; Reddy, 2019), should ally with new circumstances of educational ecosystem. Online-based microteaching can be an alternative way to make preservice teachers much more ready to design digitally-enhanced teaching activities for future learning environments as well. Therefore, preservice teachers, also as online learners, may not be left under-prepared to design and practice online context.

To sum up, teaching competencies and skills of today's and future teachers continuously change because teaching contexts and roles of schools are formed in consonance with the century we live in (Darling-Hammond, 2017). Teaching, as a sophisticated profession, requires active disposition of knowledge and practice to meet the emergent needs of learners. To collaborate, teacher education bodies and actors can play a key role in empowering online teaching activities and pedagogies through favoring strategies, as online-based microteaching, which guide preservice teachers both to associate their theoretical knowledge with a reality and to transfer the acquired skills to teaching performances. Accordingly, this study intends to ally with empowering preservice teachers to design and deliver online context by sharing their underexplored experiences in the procedure of transferring the teaching skills into online teaching environments.

Leaning on the accentuated literature and a globally new trend, this paper aims to report preservice teachers' experiences and reflections on online-based microteachings. To better describe, the study is addressed to answer following questions:

1. How do preservice teachers evaluate OBM experiences?
2. What are the strong parts of OBM in promoting teaching skills?
3. What are the experienced challenges in OBM that need to be assisted?
4. What are the implications of OBM on preservice teachers' online teaching skills?

2. Method

2.1 Design and Context

This study followed a case study of qualitative research approach to capture rich and depth data on preservice teachers' experiences on online-based microteaching. Creswell (2015) basically offers case study design when researchers seek for a deeper understanding and exploration of an activity, process etc, and eventually encourages to collect extensive data. Also, Meriam (2009) reminds researchers that case study is eligible for limited system of a research nature and effective for detailed description of this limited system. Building upon these background, to describe and explore preservice teachers' gaining and challenges in online-based microteaching procedure, and to reflect on the implications for ITE programs and future teaching practices, the study employed the case study design.

In the study, preservice teachers were requested to perform online-based microteaching sessions as a partial fulfilment of an elective course, Open and Distance Learning. This course is offered to improve preservice teachers' online teaching skills through fundamental theoretical background (concepts, definitions, approaches, modules, teachers' roles and responsibilities etc.) and available digital agents, resources and environments to design effective online teaching activities. The course lasts for 14 weeks.

The referred course of the study was administered online during 2021-2022 fall semester. At the end of the course period, preservice teachers individually designed 20-minutes long teaching activities, presented a lesson plan, practiced their activities online (synchronously), and were evaluated by peers and the instructor (author at the same time) through discussion sessions, which reflects the units of microteaching. More, they evaluated themselves through semi-structured interview forms. The microteachings were appraised in terms of adhered theoretical background and digital resources of distance learning.

2.2 Participant (Subject) Characteristics

The study was supported by 50 preservice teachers (32 females, 18 males) that registered in the course. Participants were comprised via convenience sampling since they were the students of the course at the same time. The participants study in different subject fields such as science education, mathematics education, music education, art education, primary school education, English language teaching and etc. Their grade levels range from sophomore to senior, which may mean they have dissimilarities in terms of their digital capabilities and teaching skills.

In line with the course objectives, the participant preservice teachers were equipped with theoretical background of Open and Distance Learning for 7 weeks including basic concepts and definitions, historical backgrounds, approaches, systems etc., and then, in the following 7 weeks, they were introduced with applicable digital agents and resources which can be used during online teaching and learning. The introduced digital tools and environments were actively practiced by preservice teachers as well. Finally, they were asked to design and practice an individual microteaching which was to last 20-minutes and to include at least two digital agents or resources. Participants were required to share their lesson plans beforehand so that discussion sessions and evaluations were correspondingly managed.

Preservice teachers were informed about the research intentions and invited to participate voluntarily. They were eager to contribute to study with their responses. They were asked not to share any personal information and/or clue about their identity. Their answers were coded as P1, P2,...P50 to keep anonymity.

2.3 Data Collection

The core of the study relies upon preservice teachers' OBM experiences and their reflections on online teaching skills. Accordingly, semi-structured interview forms, which were assumed as effective data collection tools for qualitative studies because they encouraged the participants to express the perceived issue through their own perspectives and words (Meriam, 2009), were employed as data collection tools. The forms were developed by the researcher referring to existing literature of online teaching, online pedagogy, course objectives as well as research questions.

Semi-structured interview forms, first of all, were given student teachers to decide on their experiences of online microteachings. The forms included questions that were consistent with research questions as well as experience based, perception based, demographic-based questions, which were suggested to be involved in "a good data interview form" according to Patton (2002). For example, the forms consisted of questions such as:

- What is your subject area?
- What do you think about online microteaching processes?
- How do you evaluate your OBM experiences?
- What can you say about the strong parts of OBM experiences?

Preservice teachers were notified about the course syllabus, learning outcomes as well as research intentions. In order to achieve one of the course requirements, they designed and practiced 20-minutes long online microteaching session synchronously. After the completion of whole OBM practices, preservice teachers were asked to fill the semi-structured interview forms considering their experiences. The forms were shared and collected online. Preservice teachers were reminded not to give any personal information/names/nicknames to keep privacy and anonymity. The forms were saved anonymously.

2.3 Data Analysis

Data analysis procedure is defined as the act of answering research questions and presenting the whole picture of what the research intends (Meriam, 2009). Here, Lincoln and Guba (1985) stress two core criteria: the data should reveal what is about the nature of the study, and data should be interpretive. However, to pursue, the data should be divided into pieces, similarities and discrepancies should be identified, then categorized accordingly.

Under the light of the references, the data analysis followed open coding strategy and inductive approach during content analysis. First of all, the downloaded semi-structured interview forms, as raw data, were read thoroughly, then scanned. During this procedure, the relevant responses through words were noted down and matched with research questions. In the second round, the notes and the highlighted codes from the participants' responses were gathered according to their similarities. The grouped codes were unified under themes that represented the codes with an umbrella term and in which codes had no other meaning. Finally, after controlling the raw data not to miss any interpretive code, the themes were unified under categories that covered the general sense about the research questions and findings.

To approve internal validity and reliability, the triangulation strategy was employed, and the data were analyzed by an expert that was not involved as a researcher in the study. The list of themes and codes, obtained after treating the data by two coders, were contemplated upon commonalities and discrepancies. The reliability percentage was found as .89. To increase credibility, the categories and themes were supported with direct references of participants' answers. The results were presented in the following section in details.

3. Results

The findings were presented following research questions' sequence under each sub-title below.

3.1 Preservice Teachers' Evaluations on OBM Experiences

Participant preservice teachers evaluated OBM experiences based on optimistic and pessimistic points of views. These views are illustrated in Table 1.

Table 1: Preservice teachers' evaluations on OBM experiences

Categories	Themes	Quotations
Optimistic views	New vision	"I believe that this experience is advantageous since it directs new teaching skills and intentions for teachers-to-be." (P22)
	Enriched digital materials	"It contributes to prepare many materials which are rich and easy to use. Teaching can be very effective with enriched materials and activities practiced online." (P14)
	Practicality	"There is no physical attendance problem for crowded classrooms and very time saving. We can participate in microteachings anywhere we want. It is also recordable to re-watch our experiences." (P6)
Pessimistic views	Physical limitations	"Actually, it has certain limits. For example, I wished to illustrate how to play a flute with my body poses, but I could not perform it in front of a camera." (P15)
	Less interaction	"It is hard to follow participants' modes during teaching because we could only see their faces. I am not sure if they were bored or not. I could not interactively manage the teaching session." (P38)
	Technical dependence	"OBM is effective if all the technical structures work accordingly. However, there were some misfortunes for some peers due to internet connection, and/or personal computers." (P27)

Table 1 summarizes that preservice teachers appreciate OBM experiences based on the assumptions as; it is contemporary and facilitating for future teaching visions and capabilities; it is very flexible to prepare and use digital materials in a relatively less time; and it is practical to be a participant without being in a same physical environment. On the other hand, preservice teachers draw attention to certain limits of OBM experiences such as unable to use body gestures, mimics, eye contact and etc.; unable to manage whole participants during teaching session; and unable to use alternative back-up plans when technical challenges occur.

3.2 Preservice Teachers' Experiences on Strong Parts of OBM in Promoting Teaching Skills

Preservice teachers mentioned individual and professional remarks in their OBM experiences while evaluating their improvement in teaching skills. These arguments are illustrated in Table 2 below.

Table 2: Preservice teachers' experiences on strong parts of OBM

Categories	Themes	Quotations
Individual arguments	Physical/emotional comfort	"Personally, I was much more comfortable in front of the camera while practicing the microteaching. I did not have to use my body postures, which would make my anxiety more apparent." (P33) "I was very comfortable with my physical appearance because nobody could see my whole body." (P42) "It was much less stressing to teach because my peers were not physically around me." (P49)

Profession-based arguments	Digital/technical flexibility	<p>“One of the strongest parts of the OBM is easy access to many digital resources that can be combined with my teaching intentions and contexts. It is relatively less available to use more than one Web 2.0 tools in a limited time. However, I could engage different web tools and digital materials in my teaching.” (P7)</p> <p>“I could share the access links of my materials with my peers during the practice so that they could easily follow and participate in my activities.” (P19)</p> <p>“I could teach using an online classroom with screen share, but if we had been in a real classroom, I could have faced with technical problems. Because we have one projector in our classrooms, and we have to connect it through Wi-Fi, we cannot use any digital resource in classrooms.” (P26)</p>
	Improvement in digital capacities	<p>“I discovered different digital agents and environments. I really liked it. More importantly, I feel more capable of designing an interactive lesson plan that is enriched with digital materials.” (P3)</p> <p>“Before this experience, I used to be familiar with basic presentations and web resources. Now, I can use an online classroom, prepare online activities and embed them into the online classroom. I could organize digital environments to assess. I can be digital teacher, I can say.” (P15)</p> <p>“After I practiced my OBM, my peers and instructor commented on it. However, I could record while I was teaching, and I could watch myself and observe how good I was. I found out my drawbacks.” (P9)</p>
	Self-reflections	<p>“We keep journals or diaries about our teaching journey in many courses, but in this experience I could watch myself and it was much more effective than writing opinions. I could evaluate my performance in teaching. Self-correction, I think, is more permanent.” (P22)</p>

In Table 2, preservice teachers’ arguments rely on both individual and professional justifications when their experiences on strong parts of OBM are underlined. Through individual explanations, preservice teachers stress the physical and emotional comfort they had while practicing online-based microteaching. Although these may not be directly related to empowering teaching skills, feeling comfortable in such experiences may help to overcome individual challenges during professional training. Profession-based arguments, on the other hand, may give some hints about preservice teachers’ digital capacities. According to their responses, preservice teachers claim that they have improved in their generic digital knowledge by practicing new digital agents and environments; and, they have felt more mature about designing digitally-enhanced teaching activities. Additionally, they had the chance of recording their microteachings and monitoring themselves. Through these self-monitoring and reflections, it is fair to say that they could evaluate their own skills and capacities.

3.3 Experienced Challenges of OBMs That Need to Be Assisted

All new experiences may result in challenges and contradictions. Therefore, preservice teachers have experienced different challenges during their OBM practices. These challenges are illustrated in Table 3 below.

Table 3: Experienced challenges of OBMs

Categories	Themes	Quotations
Technical challenges	Technical features	“My microphone did not function properly. It resulted in some voice problems while I was practicing. It was not the teaching practice I intended.” (P3)

	Design procedures	<p>“I had connection defaults some time. It kept me to practice my activity smoothly.” (P36)</p> <p>“Since there are vast variety of digital possibilities in designing an activity, I spent too much time while I was organizing my teaching.” (P13)</p> <p>“I could not predict that activities took less time in digital environments so that I could not manage my time properly.” (P44)</p>
Emotional challenges	Lack of interaction	<p>“Because I was alone in the room, I felt as I was speaking to myself. It was annoying.” (P27)</p> <p>“I was not very comfortable because I could not see my peers’ eyes, body poses etc., and I could not understand whether they were having fun or not. I prefer to have eye contact with them.” (P41)</p>
Other intruders	House/room mates	<p>“While I was practicing my teaching, my roommates were at home and they were making noises. It distracted me a lot.” (P11)</p> <p>“My parents sometimes made much noise. Especially, my mother had to come in to my room. It was hard to concentrate.” (P19)</p>

Detailed explanations of preservice teachers show their challenges which mainly indicate technological and psychological drawbacks. Connectedly, preservice teachers could face with technological problems that might affect their OBM practices. Such problems can be encountered in digitally-enhanced activities and/or practices. The generic digital knowledge and digital teaching competencies may be determinant of technical drawbacks and/or overcomes. Mutually stated, lack of interaction can be accounted as a dissatisfying issue in distance teaching and learning procedures. Most of the students and teachers can, habitually, feel more secure when they are physically together. Class atmosphere can be more positive and effective when everybody can have eye contact, interact, communicate and etc. The social distance can be a consequence of physical distance so that teaching may not be fulfilling for their actors.

As one of the natural challenging outcomes of online teaching and learning, unexpected intruders can disrupt the progress we are in. In this very specific context, preservice teachers, also as students, share their rooms and houses with others, as a result, they can be exposed to abrupt noises, interruptions, distracting conditions. Thus, responses show this reality of unwelcomed interventions on OBM procedures.

3.4 Implications of OBMs on Online Teaching Skills

Regarding the aim of the study, preservice teachers’ experiences were examined regarding their implications on OBM practices and future online teaching skills. Based on their claims, online microteachings can provide new experiences for teaching skills; improve digital capacities for teaching; and develop new visions in future directions of teaching. Preservice teachers’ arguments are demonstrated below.

Table 4: Implications of OBMs on online teaching skills

Categories	Themes	Quotations
New experiences	Theory into practice	<p>“We have gone through so much theoretical foundations about distant education. However, we had chance to practice all these theories and necessary knowledge in OBMs. I could apply my knowledge into practice before I actually started to teaching.” (P6)</p> <p>“Although we had many challenges, we found answers for how to teach online, how to make online teaching possible.” (P15)</p>
	Sense of being a teacher	<p>“OBM experience flashed me on a new issue: empathy. For a while, many teachers and our instructors were dealing many complicated tasks to keep teaching distantly. It is very difficult to teach without interaction, feedback, etc. I developed a new sense of being a teacher.” (P4)</p>

	Adapted teaching practice		“I really appreciate what we did so far, I really do. Because we had to continue with our training, we could practice microteaching no matter what the conditions were. It was an opportunity to speak in front of my peers and instructor.” (P36)
Improved digital capacities	Digitally confident		“OBM practices were useful, I think. I have learnt new digital agents for my future teaching. Besides, I feel more confident to search and select new digital resources and environments. I was prejudiced while integrating technology in my lesson plans. Now, I started to understand the power of technology in teaching and learning.” (P21)
	Digitally progressed		“Once my instructors talked about something called TPCK. I know understand what it means. Indeed, technology used to be limited to using web servers to watch videos, make presentations, and play games, according to me. However, it is no longer limited. I can search for digital tools and adapt them into my teaching intentions.” (P32)
	Change perception	in	“I think, my OBM practice made me realize if a teacher designs a proper teaching activity, s/he can continue facilitating learning no matter which teaching environment is preferred. I used to think that virtual classrooms are not effective in learning, but it is not true.” (P47)
New visions	Teachers’ roles		“As far as I regard the whole OBM procedure, I can honestly say that teachers do not only teach, they also do a lot of research. I had to look for many digital agents, I had to examine them, select the most suitable ones and many other work. I read articles about varying my materials and teaching activities. Teaching, particularly online teaching, is not very easy.” (P1)

Based on the Table 4, preservice teachers experienced a new challenge through online microteaching practices, and they combined these practices with their existing teaching skills. It is utterly reasonable for preservice teachers to have certain challenges in practice, yet such experiences seem to reinforce online teaching skills of participant preservice teachers. During their training, they are mostly exposed to advancing in pedagogy, however, unexpected situations, as COVID, enforced them to be active users and participants of distance education. Turning the unfamiliar conditions into an opportunity, OBMs could assist preservice teachers to be able to use online teaching and its components somehow. The procedure is assumed to strengthen preservice teachers’ digital teaching skills, sense of being a teacher in every condition, and getting perceptively ready for teaching in different environments.

4. Discussion

Teaching, as a demanding profession, is continuously influenced by human-driven needs and changes. Recently, pandemic results have directed new visions for teaching activities that are particularly combined with online designs. Accordingly, ITE programs also deliver online instructions for preservice teachers both to continue in training and to assist them in developing digital teaching skills. This paper, in particular, concerns the online microteaching experiences of preservice teachers with their self-reflections and implications on online teaching skills. Accompanying results on common evaluations indicate individual reflections which elicit supporting components of OBM practices and remind hindering issues of online teaching. Preservice teachers explain the assisting parts of OBM experiences by favoring the physical comfort, enriched digital sources and flexibility, opportunity in improving digital capacities, and chance to monitor their practices. Microteachings, actually and traditionally practiced, are appreciated with varied opportunities such as progressing professionally, designing a lesson, managing a classroom, communicating effectively (Kılıç, 2010) to support teaching behaviors. In this context, online microteachings are reinforced with supporting insights for teaching skills, yet in an online manner, which is also advised and mentioned in Bozkurt’s (2020) study.

As expected in new and firstly experienced circumstances, OBM practices are still need to be assisted. Preservice teachers mention certain challenges in their responses. These challenges address the technical deficiencies and emotional effects of online teaching as we encounter in the related literature (Badia, Garcia, & Meneses, 2018; Gülbahar & Kalelioğlu, 2015; Naylor & Nyanjom, 2021). Teaching is profoundly attached to emotions because teaching profession requires personal commitments which are shaped by teachers' beliefs, values, relationship with students and etc. (Bayındır, 2021; Naylor & Nyanjom, 2021). Participants of the study, as very novice future teachers, have expressed their incompleteness due to the lack of interaction through online microteaching practices. The social distance and physical distance resulted in feeling lonely for the preservice teachers in this study. Similarly, Jones and Issroff (2005) reminds the effects of emotions on learning by referring to social presence that may not be completed during online learning. Therefore, designing an online teaching activity should follow emotional implications of online learning to advance in commitment.

Continuously, shifting from traditional way of teaching to online one also needs technical support and capacity to manage an effective online instruction (Stavredes, 2011). However, digital skills may not be enough when computer hardware and/or internet access fail to run. The paper also outlines the related findings indicating preservice teachers' technical challenges which mostly result from hardware and internet problems. Additionally, digital teaching skills require the knowledge and practice on what digital agents, sources and environments are appropriate; and how to use all this digital world in an effective teaching design (Howard et. al, 2021). Still, there are study findings that imply design-based challenges in an online environment (Amiel & Reeves, 2008; Burchum et. al, 2007; Zalavra & Makri), so that it is fair to say that preservice teachers, though they may be aware of variety of digital tools and environments, they may need further assistance in selection of relevant tools and environments to save much time and effort in design procedures.

The design-based challenges, however, brings the idea of TPACK as an alternative strategy that should be infused into ITE programs. As Mishra and Koehler (2006) propose in their model, in which preservice teachers should be capacitated with technical, pedagogical and content knowledge collaboratively to use digitally-enhanced teaching activities effectively, this study also calls teacher educators both to help preservice teachers improve in online teaching skills, and to guide by integrating TPACK in their own course delivery. In Karalar and Aslan-Altan's (2018) study, they applied Web 2.0 tools and encouraged preservice teachers to use these tools in microteaching, and finally they found that preservice teachers improved in Web-TPACK scale and self-efficacy. Therefore, it is possible to contribute in different teaching skills and behaviors as long as preservice teachers are led exclusively. Following, implications of OBMs on online teaching give some clues about preservice teachers' progress in ITE programs. According to the provided responses, preservice teachers are contented with the new experiences since they affirm that they had chance to combine theory and practice. In other words, they could both be engaged in necessary theoretical background and apply actively what they have acquired into practice. Along with teaching practices, they also appreciate the practice because all courses in their training program were offered online and they had to track applied courses with theory-based instructions. Therefore, they may feel relatively more as a teacher while designing and teaching (Kidd & Murray, 2020). It can also be assumed as a road map for ITE programs to find a better way to continue progressing in unwelcomed conditions. These implications can also be a starting point to change teaching visions and perceptions to be much more ready and responsive for future generations and dispositions. To achieve, ITE programs can increase online practice for preservice teachers to experience design-based procedures realizing what and how to organize.

Considering what Darling-Hammond (2017) suggests about ongoing roles and skills of teachers and their harmony with present world, online-based activities can be encouraged in microteaching performances. It may start with the integration of digitally-enhanced activities that are planned for any part of an instruction, then continue with progressing in online-based instructions as tried and found effective in the literature (Monroe, Mendez & Nutta, 2020; Zhang, Yan & Gronseth, 2020). Within this study, it is also hoped to make connections between teaching skills and online instructions through the reflections of preservice teachers on the contrary to what Dymont and Downing (2020) conclude in their systematic review study.

Further, ITE programs are criticized about not involving consistent content to respond needs of teaching competencies (Berkovich & Benoliel, 2020; OECD, 2019) as well as are invited to make reforms to include

innovative and inclusive pedagogies (Darling-Hammond, 2020; OECD, 2019). These calls to advance in ITE programs can be international, yet, mostly, the followed steps are revolved around national contexts (Cochran-Smith, 2021). As one of the national contexts, Turkey, recently taking action on the revision of ITE programs by given the autonomy to the faculties of education, can be an example to re-arrange ITE programs concerning online and digital based teaching practices through the given autonomy.

Although this study is limited to a local context with its practices, the reflections and implications can contribute to ITE programs in international contexts. The paper wishes to discuss different perspectives and insights which may elaborate meaningful practices in initial teacher education programs. Online microteaching can be offered as an alternative practice to empower preservice teachers in their digital teaching capacities, in their practice-based teaching skills, and to enrich their future teaching visions and adaptability. This study can be embellished with different contexts, participants, and research methods in future studies.

References

- Allen, D. W. (1967). *Micro-teaching: A description*. Stanford University. Retrieved from <https://files.eric.ed.gov/fulltext/ED019224.pdf>
- Amiel, T., & Reeves, T. C. (2008). Design-based research and educational technology: rethinking technology and the research agenda. *Educational Technology & Society*, 11(4), 29–40. Retrieved from <https://www.jstor.org/stable/pdf/jeductechsoci.11.4.29.pdf>
- Amobi, F. A. (2005). Preservice teachers' reflectivity on the sequence and consequences of teaching actions in a microteaching experience. *Teacher Education Quarterly*, 32(1), 115-130. Retrieved from <https://www.jstor.org/stable/pdf/23478692.pdf?refreqid=excelsior%3A1ef41631c57f21c82feb69c689fb7b17>
- Badia, A., Garcia, C., & Meneses, J. (2018). Emotions in response to teaching online: Exploring the factors influencing teachers in a fully online university. *Innovations in Education and Teaching International*, 56(4), 446-457. <https://doi:10.1080/14703297.2018.1546608>
- Baştürk, S. (2016). Investigating the effectiveness of microteaching in mathematics of primary pre-service teachers. *Journal of Education and Training Studies*, 4(5), 239-249. <https://doi:10.11114/jets.v4i5.1509>
- Bayındır, N. (2021). Çevrimiçi öğretim sürecinde motivasyon faktörü (Motivation factor in online teaching procedure). *Gaziantep Üniversitesi Eğitim Bilimleri Dergisi*, 5(2), 291-303. Retrieved from <https://dergipark.org.tr/pub/guebd/issue/67489/960254>
- Berkovich, I. & Benoliel, P. (2020). Marketing teacher quality: critical discourse analysis of OECD documents on effective teaching and TALIS. *Critical Studies in Education*, 61(4), 496-511. <https://doi:10.1080/17508487.2018.1521338>
- Bozkurt, A. (2020). Koronavirüs pandemi süreci ve pandemi sonrası dünyada eğitime yönelik değerlendirmeler: Yeni normal ve yeni eğitim paradigması (Evaluations on education in and after pandemic period: new normal and new education paradigm). *Açıköğretim Uygulamaları ve Araştırmaları Dergisi (AUAD)*, 6(3), 112-142. Retrieved from: <https://dergipark.org.tr/en/download/article-file/1215818>
- Burchum, J. L. R., Russell, C. K., Likes, W., Adymy, C., Britt, T., Driscoll, C., Graff, J. C., Jacob, S. R., & Cowan, P. A. (2007). Confronting challenges in online teaching: the webquest solution. *MERLOT Journal of Online Learning and Teaching*, 3(1), 40-57. Retrieved from <https://jolt.merlot.org/vol3no1/burchum.pdf>
- Cochran-Smith, M. (2021) Exploring teacher quality: International perspectives. *European Journal of Teacher Education*, 44(3), 415-428. <https://doi:10.1080/02619768.2021.1915276>
- Creswell, J. (2015). *Educational research: planning, conducting, and evaluating quantitative and qualitative research*. New York: Pearson.
- Darling-Hammond, L. (2020). Accountability in teacher education. *Action in Teacher Education*, 42(1), 60-71. <https://doi:10.1080/01626620.2019.1704464>
- Darling-Hammond, L. (2017). Teacher education around the World: What can we learn from international practice? *European Journal of Teacher Education*, 40(3), 291-309. <https://doi:10.1080/02619768.2017.1315399>
- Dymont, J., & J. Downing. 2020. Online initial teacher education: a systematic review of the literature. *Asia-Pacific Journal of Teacher Education*, 48(3), 316–333. <https://doi:10.1080/1359866X.2019.1631254>.
- Falloon, G. (2020). From digital literacy to digital competence: the teacher digital competency (TDC) framework. *Education Technology, Research and Development*, 68, 2449-2472. <https://doi:10.1007/s11423-020-09767-4>

- Flores, M. A. (2020). Feeling like a student but thinking like a teacher: a study of the development of professional identity in initial teacher education. *Journal of Education for Teaching*, 46(2), 145-158. <https://doi:10.1080/02607476.2020.1724659>
- Görgeçen, İ. (2003). Mikroöğretim uygulamasının öğretmen adaylarının sınıfta ders anlatımına ilişkin görüşleri üzerine etkisi (The effect of microteaching practices on student teachers' views of giving lessons in the classroom). *Journal of Hacettepe University Education Faculty*, 24, 56-63. Retrieved from <http://www.efdergi.hacettepe.edu.tr/yonetim/icerik/makaleler/862-published.pdf>
- Gülbahar, Y. & Kalelioğlu, F. (2015). Competencies for e-instructors: how to qualify and guarantee sustainability. *Contemporary Educational Technology*, 6(2), 140-154. Retrieved from <https://dergipark.org.tr/en/pub/cet/issue/25740/271530>
- Howard, S. K., Tondeur, J., Ma, J., & Yang, J. (2021). What to teach? Strategies for developing digital competency in preservice teacher training. *Computers & Education*, 165, 1-12. Retrieved from: <https://reader.elsevier.com/reader/sd/pii/S0360131521000269?token=6EFADA4755B199D070ADC9E7C448B589B5E8655750467118970957C0BA398CDA7036C1DFE1E54384ECE7C1FA8F9FFA1B&originRegion=eu-west-1&originCreation=20220207122222>
- Innocent, D. C. (2017). Designing micro-teaching sessions for an initial teacher training course. *International Journal on Studies in English Language and Literature*, 5(5), 57-68. <https://doi:10.20431/2347-3134.0505006>
- Jones, A. & Issroff, K. (2005). Learning technologies: Affective and social issues in computer-supported collaborative learning. *Computers & Education*, 44(4), 395-408. <https://doi:10.1016/j.compedu.2004.04.004>
- Karalar, H. & Aslan Altan, B. (2018). New technologies in microteaching: Is it possible for web 2.0 tools to affect prospective teachers' web pedagogical content knowledge and teacher self-efficacy? *International Online Journal of Education and Teaching (IOJET)*, 5(3), 535-551. Retrieved from <http://iojet.org/index.php/IOJET/article/view/353/252>
- Karlström, M., & Hamza, K. (2019). Preservice science teachers' opportunities for learning through reflection when planning a microteaching unit. *Journal of Science Teacher Education*, 30(1), 44-62. <https://doi:10.1080/1046560X.2018.1531345>
- Kılıç, A. (2010). Learner-centered micro teaching in teacher education. *International Journal of Instruction*, 3(1), 77-100. Retrieved from <https://dergipark.org.tr/en/download/article-file/59794>
- Kidd, W. & Murray, J. (2020) The Covid-19 pandemic and its effects on teacher education in England: how teacher educators moved practicum learning online. *European Journal of Teacher Education*, 43(4), 542-558. <https://doi:10.1080/02619768.2020.1820480>
- Kim, J. (2020). Learning and teaching online during covid-19: experiences of student teachers in an early childhood education practicum. *International Journal of Early Childhood*, 52, 145-158. <https://doi:10.1007/s13158-020-00272-6>
- Koech, H. C., & Mwei, P. K. (2019). How secondary school mathematics teachers perceive the effectiveness of microteaching and teaching practice in their preservice education. *Humanities and Social Sciences Letters*, 7(1), 46-55. <https://doi:10.18488/journal.73.2019.71.46.55>
- Kusmawan, U. (2017). Online microteaching: a multifaceted approach to teacher professional development. *Journal of Interactive Online Learning*, 15(1), 42-56. Retrieved from <https://www.ncolr.org/jiol/issues/pdf/15.1.3.pdf>
- Lincoln, Y. S. & Guba, E. G. (1985). *Naturalistic inquiry*. Thousand Oaks, CA: Sage
- Loughran, J. (2006). *Developing a pedagogy of teacher education – understanding teaching and learning about teaching*. Oxon, UK: Routledge
- Merc, A. (2015). Microteaching experience in distance English language teacher training: A case study. *Journal of Educators Online*, 12(2), 1-34. Retrieved from <https://files.eric.ed.gov/fulltext/EJ1068376.pdf>
- Meriam, S. B. (2009). *Qualitative research. A guide to design and implementation*. John Wiley & Sons.
- Mishra, P. (2020). Tipping point for online learning? on questioning the right assumptions. *ECNU Review of Education*, 3(4), 735-738. <https://doi:10.1177/2096531120934492>
- Mishra, P., & Koehler, M. J. (2006). Technological pedagogical content knowledge: A framework for teacher knowledge. *Teachers College Record*, 108, 1017–1054. <https://doi:10.1111/j.1467-9620.2006.0068>
- Monroe, L. E., Mendez, L., & Nutta, J. (2020). Virtually remote: how interrupted internships continued in a virtual classroom. In *Teaching, Technology, and Teacher Education during the COVID-19 Pandemic: Stories from the Field* (Eds. Richard E. Ferdig, Emily Baumgartner, Richard Hartshore, Regine Kaplan-Rakowski, & Chrystalla Mouza) (pp: 303-309). AACE-Association for the Advancement of Computing in Education. Retrieved from <https://www.learntechlib.org/p/216903/>
- Moyo, N. (2020). Covid- 19 and the future of practicum in teacher education in Zimbabwe: Rethinking the 'new normal' in quality assurance for teacher certification. *Journal of Education for Teaching*, 46(4), 536-545. <https://doi:10.1080/02607476.2020.1802702>

- Naylor, D., & Nyanjom, J. (2021). Educators' emotions involved in the transition to online teaching in higher education. *Higher Education Research & Development*, 40(6), 1236-1250. <https://doi:10.1080/07294360.2020.1811645>
- OECD (2019). *A flying start: improving initial teacher preparation systems*. Paris: OECD Publishing, <https://doi:10.1787/cf74e549-en>.
- Özdemir, Ö. (2019). Mikro öğretim ve video-örnek olay etkinliklerinin öğretmen adaylarının genel ve özel alan eğitimi yeterliklerine katkısı (Contribution of micro-teaching and video-sample event activities to teacher candidates general and private field education qualifications (Unpublished Master Thesis). Pamukkale University, Denizli, Türkiye.
- Patton, M. Q. (2002). *Qualitative research and evaluation methods* (3rd ed.). Thousand Oaks, CA: Sage.
- Reddy, K. R. (2019). Teaching how to teach: microteaching (a way to build up teaching skills). *Journal of Gandaki Medical College-Nepal*, 12(1), 65-71. Retrieved from <https://www.nepjol.info/index.php/JGMCN/article/view/22621>
- Sarimanah, E., Efendi, R., & Dewi, F. I. (2021, July). *The development of online-based microteaching learning in improving the teaching basic skills in the covid era 19*. Paper presented at the 5th Asian Education Symposium. <https://doi.org/10.2991/assehr.k.210715.070>
- Sevim, S. (2013). Mikro-öğretim uygulamasının öğretmen adayları gözüyle değerlendirilmesi (Evaluation of microteaching applications through student teachers' views). *Journal of Dicle University Ziya Gökalp Education Faculty*, 21, 303-313. Retrieved from <https://dergipark.org.tr/en/download/article-file/786885>
- Sinnema, C., & Aitken, G. (2013). Emerging international trends in curriculum. In *Reinventing the curriculum: New trends in curriculum policy and practice* (Eds: M. Priestley & G. J. J. Biesta) (pp: 141-163) London: Bloomsbury Academic.
- Stavredes, T. (2011). *Effective online teaching: foundations and strategies for student success*. San Fransico, CA: John Wiley & Sons.
- Zan, N., Zan, B. U. (2020). Koronavirüs ile acil durumda eğitim: Türkiye'nin farklı bölgelerinden uzaktan eğitim sistemine dahil olan Edebiyat Fakültesi öğrencilerine genel bakış (Education in emergency at coronavirus: overview of faculty of letters students included to distance education system from different regions of Turkey). *Turkish Studies*, 15(4), 1367-1394. <https://doi:10.7827/TurkishStudies.44365>
- Zalavra, E., & Makri, K. (2022). Relocating online a technology-enhanced microteaching practice in teacher education: challenges and implications. *The Electronic Journal of e-Learning*, 20(3), 270-283. <https://doi:10.34190/ejel.20.3.2180>
- Zhang, H., Yan, Y., & Gronseth, S. L. (2020). Adding flexibility to curriculum: a practical guide for student-directed assessment. In *Teaching, Technology, and Teacher Education during the COVID-19 Pandemic: Stories from the Field* (Eds. Richard E. Ferdig, Emily Baumgartner, Richard Hartshore, Regine Kaplan-Rakowski, & Chrystalla Mouza) (pp: 113-119). AACE-Association for the Advancement of Computing in Education. Retrieved from <https://www.learntechlib.org/p/216903/>



“Primary School Curriculum is like a Matryoshka”: Teacher Candidates’ Perceptions of the Curriculum

Figen Yıldırım¹

¹ Kilisli Muallim Rifat Faculty of Education, Kilis 7 Aralık University, Kilis, Turkey

Correspondence: Figen Yıldırım Department of Elementary Education, Kilisli Muallim Rifat Faculty of Education, Kilis 7 Aralık University, Kilis, Turkey Tel: +90 348 814 26 62 Ext. 1716.
E-mail: figenyildirim@kilis.edu.tr

Abstract

The curriculum is an important guide for a country's education system. It covers the objectives, teaching and learning process, content, and evaluation process. The primary school curriculum was updated in Turkey in 2018 and made simpler compared to the 2006 curriculum. The purpose of this research was to explore the perceptions of primary school teacher candidates about the primary school curriculum through conceptual metaphor theory. For this purpose, teacher candidates completed the prompt "Primary school curriculum is like/similar to Because" The data in this qualitative research was analyzed using content analysis techniques. The characteristics of the curriculum guided the analysis process. According to the findings, eight themes were identified: Primary school curriculum as being systematic, being the foundation of education, being a guide, being individual foundations, being purpose-oriented, being applicable, being the foundation of life, and others. The findings indicate that the pre-service teachers mostly produced positive metaphors for the primary school curriculum. According to the results of the research, it was determined that the pre-service teachers emphasized the basic features of the program and their level of knowledge was high. It is expected that the research will contribute to primary school teacher education.

Keywords: Curriculum, Perceptions, Pre-Service Teachers, Primary School Curriculum

1. Introduction

Education is a determinant phenomenon for the development of society, which maintains its importance today as it is in every period, and contributes to the self-realization of individuals. Education is given formally in schools. For this, states develop curriculum, implement it in the context of the characteristics that thought the citizens should have and the needs of the country, and make changes when necessary. In Turkey, a new curriculum has been developed to be implemented at all schools and classroom levels in 2018, and almost all curricula at all education levels have been renewed by the Ministry of National Education [MoNE]. In line with the opinions of a wide range of participants and experts, the curriculum was simplified compared to the 2005 curriculum and

started to be implemented in schools (Gültekin, 2020). Values and competencies were added and the characteristics of the type of person that the curriculum aims to raise are stated.

Evaluation of curriculum is important because the evaluation results serve the purpose of “curriculum design, adaptation, revision and informing the management levels” (Kara & Akdağ, 2017, p. 470). According to Ertürk (1993), evaluation in curriculum development is “the process of determining the degree of realization of educational goals as the final and complementary link of Yetişek [curriculum] development” (p. 107). According to Erden (1998), evaluation of curriculum is “the process of gathering information about the effectiveness of the curriculum using various measurement tools, comparing and interpreting the information obtained and making a decision about the effectiveness of the curriculum” (As cited in Demirtaş, 2017, p. .758). According to Oral and Süer (2017), in the evaluation process of curriculum development, qualitative and quantitative methods are used. After analyzing the data, the evaluation of the curriculum can be achieved (Baş, 2016). Thus, a decision can be made about the effectiveness of the curriculum.

With the 2018 primary school curriculum (PSC), the course catalogs of the institutions that educate future teachers were also renewed following the new curricula. Thus, it is aimed to prepare primary school teachers for the necessary competencies to implement the curriculum developed by the MoNE.

Compulsory and elective courses were included in the 2018 initial teacher education catalog to increase the knowledge and skills of teacher candidates who would teach in primary schools. For example, courses such as curriculum development in education and PSC serve to educate teacher candidates as curriculum literate. While the concept of the curriculum in the education system is understood in a broader sense, the PSC is used as an umbrella term and consists of lessons (Subjects) such as Turkish, Mathematics, and Social Studies taught at the primary level. It is important to explore the perceptions of the prospective teachers about the 2018 PSC because they will implement the curriculum when they start teaching in primary schools. Thus, it may be possible to develop and improve both the PSC and teacher education programs. In addition, it may become possible to train primary school teacher candidates more equipped, to increase the applicability of the curriculum, and to provide a more qualified education. In addition, the opportunity to evaluate the program is obtained by receiving feedback about the PSC. This, in turn, may enable existing programs to be eliminated and developed, and future programs to be prepared more qualified (Kara & Akdağ, 2017; Oliva, 2012).

1.1 Curriculum

A curriculum is defined as “a desirable goal or set of values that can be activated through a developmental process that results in experiences for students” (Wiles & Bondi, 2015, p. 5). Oliva (2012), on the other hand, defines curriculum as “a systematic lesson group or series of subjects required for graduation or certification in a major field of study” (p. 18). Gültekin (2017) considers the curriculum as a multidimensional concept that covers the experiences students have in and out of school. The curriculum is created by the state and it includes aims, objectives, content, method, and evaluation elements (Gültekin, 2017). The curriculum is prepared by the philosophy and policies of the state and is an official document reflecting this. The curriculum is at the theoretical level. When viewed from a broad perspective, the curriculum covers students' in-school and out-of-school lives and this takes place under the leadership of the school and the teacher (Ertürk, 1993). According to Ornstein and Hunkins (2018), our approach to the education program; reflect our perceptions, values, and knowledge. Therefore, the approach of the executive teachers of the program to the program is a special and subjective process.

1.2 Characteristics of the Curriculum

The curriculum must have certain features to serve its purposes and be successful in practice. Gültekin (2017) and Hesapçioğlu (1994) explain these features as follows:

1. **Functionality:** It is related to the fact that the curriculum works, in other words, it works in real life, and it responds to the needs of society and students.
2. **Flexibility:** It is about adapting the content of the curriculum to the interests, needs, and conditions of the school environment according to the schools, teachers, and students.

3. Curriculum as a framework: The subjects in the curriculum are determined in general terms and do not contain details. Therefore, the curriculum is a framework for its practitioners.
4. Constancy and generality: This feature is related to the fact that certain important subjects and achievements should be covered in all schools in the country.
5. Practitioner-friendly: This feature is related to being able to guide teachers who are practitioners of the curriculum.
6. Scientificity: It is about the preparation of the curriculum following contemporary developments, that is, developments in education, learning-teaching methods, and techniques.
7. Purpose-oriented: This feature is related to the preparation of the curriculum by the purposes on which it is based. The curriculum should be prepared to achieve these goals.
8. Applicability: It is related to the functionality and flexibility of the curriculum. It's about being applicable in real school settings.
9. Affordability: This feature is related to the practical and economic nature of the curriculum. Its objectives, content, methods, and techniques should be applied in real schools and be affordable by the education system, schools, teachers, and students.
10. Compliance with the expectations of the state and society: The curriculum should be prepared by the expectations of the country and the society in which they are prepared, and the values and ideals of the society.

These features cover the curriculum development stages and these features are taken into account by the curriculum makers and implemented in schools after necessary pilot studies.

1.3 Primary School Curriculum

The PSC in Turkey covers the concepts that need to be developed in children between the ages of six and ten, the teaching-learning process, assessment methods and techniques, values, and skills. According to Korkmaz (2021), the PSC includes learning experiences for the psychological, emotional, social, moral, mental, and physical development of children through their capacities. It would not be wrong to conceptualize the PSC as the whole of the curriculum of the lessons taught in primary schools.

In this context, the PSC shows the lessons to be taken by the students at the primary school level (1-4 grades and 6-10 years old). The main lessons are Turkish, Mathematics, Social Studies, and Science. The others are English, Religious Culture and Morals, Visual Arts, Music, Physical Education and Play, Traffic Safety, and Human Rights, Citizenship and Democracy. In addition to these, a lesson titled Free Activities is taught in primary schools (Ministry of National Education [MoNE], 2018). Among these, only the Free Activities lesson does not have a formal curriculum and the teachers are expected to develop one based on the needs of the kids. The remaining lessons have a formal written curriculum.

The MoNE published a curriculum book for each lesson in the PSC in 2018. Accordingly, the curriculum book has two sections. In the first section, the goals/objectives, perspective, values, and competencies under the perspective title, assessment, and evaluation approach in the curriculum, and individual development titles are included, being the same in all curricula (MoNE, 2018). In this section, the curriculum is introduced in general. In the second part, there is various information about each lesson. For example, the following information is included in the Life Studies curriculum:

1. Specific learning objectives of the curriculum,
2. Skills in the curriculum,
3. Suggestions for the implementation of the curriculum,
4. Structure of the curriculum,
5. Criteria for textbooks, and
6. Grade-level objectives and explanations

Under these headings, the purpose of the PSC, the skills, the structure, information for the implementation of the curriculum, and short explanations of objectives are included to guide the teachers. Explanations of objectives indicate the limitations of the acquisition. In the sub-heading of the implementation, how the teachers can apply

the curriculum, the teaching and assessment-evaluation methods they can use, and the information reflecting the philosophy of the curriculum are provided. According to MoNE (2018), the purpose of the PSC is to enable students to have self-confidence and self-discipline. In addition, educating individuals who have verbal, numerical, and scientific reasoning skills used in daily life at a basic level is aimed to achieve through PSC. Moreover, raising individuals with social skills and aesthetic values is among the objectives of the PSC. The PSC is structured within the framework of these purposes.

Various studies in the literature reflect the views of teachers about the national curriculum. Yurdakul (2015) determined that teachers of primary schools thought of the curriculum as a theoretical and political text. In addition, the teachers thought of the curriculum as a guidebook. In some studies, teachers approach the curriculum positively (Erdamar & Akpunar, 2020), and teachers have a medium level of curriculum literacy (Kahramanoğlu, 2019; Demir, Yücesoy, & Sertaş, 2020). Steiner (2018) states that curriculum literacy is an important topic in teacher education and teacher education programs should improve the curriculum knowledge of teacher candidates by paying special attention to it.

1.4 Metaphors and Conceptual Metaphor Theory

Metaphors are frequently used in daily life. For example, a person who says "you are my sun" to a loved one does not mean the sun physically, but to express that the sun guides her/him and illuminates her/his path based on its characteristics. A person who says "mothers are angels" means that mothers are loving, caring, and good-hearted like angels. According to Saban (2004), metaphors structure our thinking about the forming and processing of facts and events. Metaphors guide and often control us. As powerful mental tools, we use metaphors to express our perceptions and experiences about an event, phenomenon, or concept. Conceptual metaphor theory informs us that metaphors play an important role in our lives and we use them to think and conceptualize the world. People express their perceptions, experiences, and beliefs through metaphors (Lakoff & Johnson, 1980). Metaphors used by individuals on various subjects are a powerful method for revealing their perceptions and experiences about that subject (Lakoff & Johnson, 2003). Metaphors "provide to see through something" (Akyol, 2021, p. 80). On the other hand, Moser (2000) inserts that metaphor analysis can be used to access hidden knowledge and to make sense of and explore experiences. Kasoutas and Malamitsa (2009) contend that since representations are briefer than exacting dialect, they offer assistance us express troublesome thoughts and things in genuine dialect and capture the complexity and differences of encounters and concepts.

1.5 Metaphors in Educational Research

Recently, metaphors are used extensively in educational research, mostly in qualitative research designs (Kılcan, 2021). Saban, Koçbekir, and Saban (2006) state that to explore teacher candidates' perceptions, beliefs, or views on related topics, metaphors can be used. There are metaphor studies on different subjects at various levels of education and with different participants in the literature. Academicians' perceptions of distance education (Alan, 2021), teachers' perceptions of lesson planning (Alarcón et al., 2019), teacher and school administrators' perceptions of values (Yazar, Özekinci & Lala (2017), pre-service teachers' perceptions of aesthetic (Özalp, 2018), distance education (Atik, 2020), Kemalism (Faiz & Karasu Avcı, 2019), mathematics (Kuzu, Kuzu, & Sıvacı, 2018), reading and writing concepts (Özenç & Özenç, 2018), refugee students (Burak & Amaç, 2021), the role of teachers (Alarcón, Díaz, & Vergara, 2015), school administrators and the education system (Kavracıyıcı, 2021) and universal values (Çelikkaya & Seyhan, 2017) were investigated via metaphors.

Metaphorical perceptions about the curriculum have been investigated in various ways. For example, Kliebard (1982) characterizes the curriculum with three metaphors: Production, travel, and growth. According to the production metaphor, the curriculum is considered a technical structure, and students are seen as raw materials to be transformed into a product. The travel metaphor, on the other hand, emphasizes the guided travel of the students in the company of an experienced guide (teacher). Curriculum as growth refers to a structure in which students grow and develop in the company of a smart and patient teacher, similar to the gardener responsible for growing a plant (Ibrahim, 2016). Çırak Kurt (2017) investigated the perceptions of teachers in secondary schools about curriculum and collected data from 73 teachers. The analysis showed that teachers' perceptions were generally

negative. Gültekin (2013) concluded in his research that teacher candidates produced 84 metaphors and the results showed that teacher candidates approached the curriculum positively. The studies conducted on pre-service teachers have determined that they do not have sufficient knowledge about the curriculum and generally have positive attitudes and perceptions of the curriculum.

1.6 Importance and Purpose of the Research

The faculty where the study was conducted has been educating primary school teachers since 1998. The teacher education course catalog was updated in cooperation with the Council of Higher Education and the purpose was to prepare teachers better for the needs of the country. In 2018, the primary school education catalog at the university was renewed following the national curriculum of the MoNE; accordingly some courses were added and some were removed. The new catalog has intense elective courses related to different subjects.

The literature lack studies about how primary school teacher candidates percept the PSC. Exploring the perceptions of teacher candidates, who are to implement the PSC in the future, may have two benefits: First, it can form a basis for the effective implementation of the PSC. Secondly, it can be ensured that feedback is received from the prospective teachers about the 2018 PSC and thus the curriculum can be evaluated by the prospective teachers as a stakeholder (Gültekin, 2013). In other words, data can be provided to the curriculum and education policymakers to evaluate the PSC in terms of its practitioners and to eliminate any perception differences. For these reasons, it is expected that this study will contribute to the literature on curriculum and curriculum development.

The purpose of this study was to explore the metaphoric perceptions of the 3rd and 4th-year primary school teacher candidates about the PSC. The following research questions guided this study:

1. How do prospective primary school teachers perceive the primary school curriculum?
2. Which metaphors do prospective primary school teachers explain the primary school curriculum?

2. Method

This research is qualitative based and contrary to quantitative methods, more holistic methods are used in qualitative research and focus on human nature and behaviors. This is a phenomenology (Merriam & Tisdell, 2016) study design and in phenomenological studies, participants who have experienced the phenomenon have the opportunity to reflect on the phenomenon as a data source (Yıldırım & Şimşek, 2011). In this study, the criterion sampling technique (Burak, 2022; Yazar & Keskin, 2020) was used. The criteria used to select participants were:

- Being a student at the university,
- Being a student of the primary school department,
- Being a 3rd or 4th-year student and
- Volunteering to participate in the study.

The reason for selecting participants from teacher candidates who are in their 3rd and 4th year in the teacher education program is that 3rd-year students all finished methods courses, learn more about PSC, and are ready for field placements in the following semester. The 4th year students are in their last semester and they will be graduating in a couple of months. It is thought that these two cohorts of students would give rich data for the research.

2.1 Participant Characteristics

A Google Forms link was prepared and shared in Whatsapp groups that were previously created for each class to facilitate communication with teacher candidates. Nine metaphors and explanations were removed from the data pool because they were the same. In addition, three metaphors were removed as the "because" part contained meaningless explanations. An example of the removed metaphor was: "Primary school curriculum is like lactose milk. Because it is the foundation of planning." As a result, 84 valid metaphors were added to the analysis pool. The study's participants were 23 males and 59 females. 44 of these participants were on the 3rd and 38 were 4th-year teacher candidates.

2.3 Procedures

The data were collected after obtaining the ethics committee approval from primary school teacher candidates who were 3rd and 4th-year students in Kilis 7 Aralık University Primary School Education Department and participated in the study voluntarily in the spring semester of the 2021-2022 academic year. To collect the data, a semi-structured form was prepared and asked an expert in the field of curriculum and instruction to reflect on it. After getting an expert opinion, the form was updated. There are two sections in the form. In the first part, information about the purpose, volunteerism, and information about the researchers [e.g. researchers' email and phone number.] were provided, and the year in the department and gender of the participants were asked to fill out. In the second section of the form, the prospective primary school teachers were asked to create a metaphor for PSC by completing the following prompt: "Primary school curriculum is like/similar to Because....." The form has been transferred to Google Forms and as a result, an online form link was created. In the first part of Google Forms, information about the research (Purpose of the Researcher, Ethics committee permission, Researchers' contact information, etc.) was given and a button about voluntary participation in the study was added within this framework. Those who want to participate in the study voluntarily clicked the Yes button then the form was directed to the second part of the research. Those who did not want to participate in the study clicked the No button and thus the survey ended. 99 primary school teacher candidates clicked on the online survey link, four of them did not fill out the form because they did not want to participate in the research, and the other 95 students participated in the survey. Identity information of the participants or any data identifying them was not collected because of this during the analysis and reporting phase, the participants were coded as P-1, P-2, P-3, P-4, and such.

2.3 Analysis and Interpretation of Data

In this study, metaphors of pre-service primary school teachers about the PSC were investigated. The analysis and interpretation of the data were done in stages suggested by Saban, Koçbekir, and Saban (2006) as follows:

1. Naming: The first step was naming the metaphors. In this step, the metaphors were examined, sorted alphabetically, and listed in this stage.
2. Sorting (Sieving and refinement): The metaphors of the participants were read and the metaphors whose "because" part was not sufficiently explained or illogical/irrelevant/inappropriate were eliminated in this sorting stage. As a result of this process, 84 metaphors were qualified as valid and added to the analysis pool.
3. Category development: The metaphors were read again and examined in terms of their features and similarities. As a result of this examination, descriptive categories were created related to the conceptualization of the PSC by the participants, and the themes were created as a result of the categories.
4. Ensuring validity and reliability: Validity and reliability issues were checked in this stage by asking field experts to examine the categories and themes. In the fields of primary education, curriculum, and educational research shared their opinions about the categories and themes. Corrections were made based on the evaluations of the experts and then the themes were finalized.
5. Transferring data to computer environment: Data (Participants, metaphors, categories, and themes) were transferred to MS Excel and the percentages and frequencies were calculated.

2.4 Researcher

The researcher in this study graduated from a primary school teacher education program and has two-year teaching experience. She holds a Ph.D. in curriculum and instruction. She has been working as an academican for 19 years and teaches various courses related to the curriculum at the undergraduate and graduate levels. She is doing both qualitative and quantitative studies related to curriculum and instruction.

3. Results

This research was carried out to explore the perceptions of prospective primary school teachers about PSC using metaphors. The metaphors and their frequency are provided in Table 1.

Table 1: The Metaphors created by teacher candidates for PSC

No	Metaphor	f	No	Metaphor	f
1	Pomegranate	5	31	Frame	1
2	Tree root	4	32	Fruit garden	1
3	Water	4	33	Gasoline	1
4	Seed	3	34	Grape	1
5	Sun	3	35	Helical spring	1
6	Tree	3	36	Justice	1
7	Breath	2	37	Key	1
8	Chain	2	38	Lab	1
9	Compass	2	39	Ladder	1
10	Flower	2	40	Life	1
11	Game	2	41	Machine	1
12	Puzzle	2	42	Matryoshka	1
13	Sapling	2	43	Mirror	1
14	The bedrock of a building	2	44	Mother-father	1
15	Justice	1	45	Motorway	1
16	Adventure book	1	46	Nature	1
17	Atom	1	47	Navigation	1
18	Basis	1	48	Nothing	1
19	Blank paper	1	49	Orange	1
20	Building	1	50	Playground	1
21	Cabbage	1	51	Roof	1
22	Cake	1	52	School	1
23	Clearwater	1	53	Sculpture's clay	1
24	Construction project	1	54	Spiral system	1
25	Diamond	1	55	Stair step	1
26	Directory	1	56	Sunflower seed	1
27	Embroidery	1	57	Teacher	1
28	Flower garden	1	58	The bedrock of a house	1
29	Fork-spoon	1	59	Tree leaves	1
30	Foundation of construction	1	60	World	1

According to Table 1, the participants produced 60 different metaphors regarding the PSC. The participants mostly associated the PSC with the metaphors of pomegranate, tree root, water, seed, sun, and tree. The metaphors produced by at least two participants are as follows: Bedrock of a building, breath, chain, compass, flower, game, puzzle, and sapling. The remaining 46 metaphors were used once by the participants.

Eight themes were created for the participants' metaphors for PSC. While creating the themes, the characteristics of the curriculum listed by Gültekin (2017) and Hesapçioğlu (1994) are used. These features are functionality, flexibility, framework, immutability, and generality, practitioner-friendliness, scientificness, purposefulness, applicability, conformity with the structure of the economy, compliance with the expectations of the state and society. The metaphors were grouped by these characteristics.

There are eight themes created based on the curriculum's characteristics as follows: PSC as being systematic f: 21, being the foundation of education f: 18, being a guide f: 13, individual foundations f: 9, purpose-oriented f: 7,

"Primary school curriculum is like the foundation of a building because, without foundations, a building cannot have upper floors. The curriculum is very important because the student is placed in a school for the first time and they learn everything as it should be through school. If the primary school curriculum is not robust and is not implemented well, the student cannot succeed in either middle, high school, or university." (P: 16)

"The primary school curriculum is like a building's foundation because before a building is built, a foundation is laid. If this foundation is not well laid, the building will not be strong. So is education." (P: 17)

"Primary school curriculum is like the foundation of construction because a reliable building is erected on a solid construction"(P: 40)

"The primary school curriculum is like a tree's root because the primary school curriculum determines the entire academic career of individuals, so the curriculum, that is, the foundation, must be solid." (P: 2)

"The primary school curriculum is like the root of the tree because the stronger the root, the more efficient, healthy, and orderly its functioning." (P: 4)

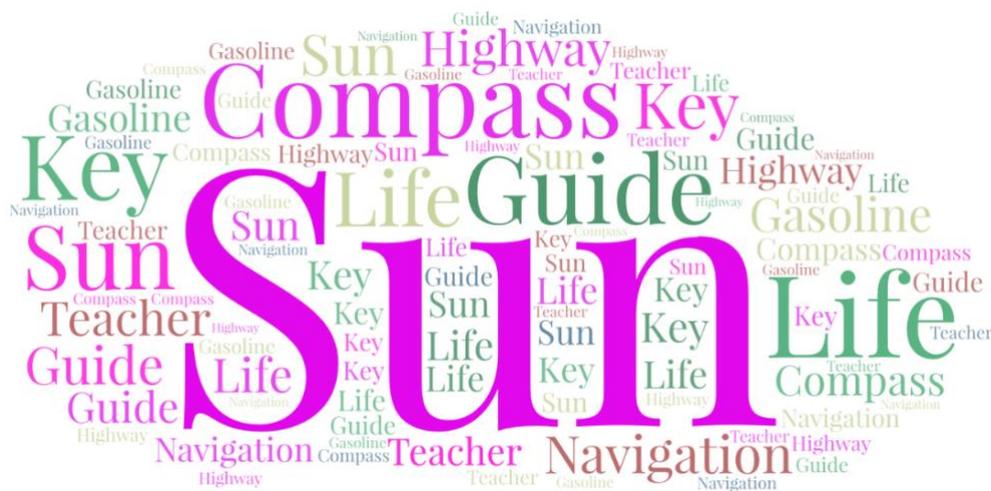


Figure 4: Metaphors Related to PSC as Being a Guide

There are metaphors under the theme of 'being a guide' in the PSC in Figure 4. In this theme, 12 metaphors were identified. Accordingly, it is observed that the participants perceive the PSC as a guide. Among the metaphors identified in this theme; are the sun, compass, guide, teacher, highway, navigation, and key draw attention. According to this theme, it has been determined that the participants think that the PSC is a prospectus as a pathfinder, guides its implementers, and facilitates the work of teachers as a guide. The sample expressions regarding the metaphors for the PSC as being a guide are given below:

"The primary school curriculum is like a guide because it guides primary school teachers." (P: 68)

"Primary school curriculum is like a compass because if we are on an unknown path, I think we need to take a compass with us in order not to get lost or go the wrong way. It is the same in education, primary school curriculum organizes and guides us on the path we will go" (P: 66)

"The primary school curriculum is like a compass because the pre-set goals are realized by looking at the curriculum. The desired goal is achieved through a plan with the help of the curriculum. That's why the primary school curriculum is our compass. It helps us find our way. It saves us from complexity." (P: 67)

"Primary school curriculum is like a highway because the road is a tool that will take us from one place to another like education and curriculum" (P: 59)

"A primary school curriculum is like navigation because it guides you to the outcomes and it allows you to plan." (P: 55)

"Primary school curriculum is like the sun because it illuminates us like the sun and it lights our way. The curriculum lights our journey toward becoming a good teacher" (P: 35)

"The primary school curriculum is like a key because it facilitates the lesson plan and generally this curriculum is a key to all educational things" (P: 10)



Figure 5: Metaphors Related to the PSC as Individual Foundations

Figure 5 shows the metaphors under the "individual foundations" theme of the PSC. In this theme, nine metaphors were identified. Among the metaphors identified in this theme; analogies such as flower, orchard, adventure book, sculpture mud, sapling, and flower garden draw attention. According to this, it was observed that the participants thought that the applications included in the curriculum should meet the needs of the students, reveal the talents of the students, and have the features to develop their talents, that what was learned should be related to real life and that it should work in real life. In addition, the participants perceive the PSC as an element that develops individuals. The sample expressions of the pre-service teachers regarding this are given below:

"The primary school curriculum is like an orchard because each student is like the fruit of a different tree." (P: 48)

"The primary school curriculum is like an adventure book because as you read the book, new excitements, feelings of curiosity, the ability to ask questions, and the ability to think arise. It is good to be curious about something, it develops people. Therefore, the primary school curriculum is like an adventure book for me." (P: 43)

"The primary school curriculum is like sculpture's clay because it covers the age ranges in which a person's character will be formed." (P: 37)

"The primary school curriculum is like a sapling because the curriculum's purpose is to water young children like saplings and turn them into trees, that is, adults.." (P: 31)

"The primary school curriculum is like a flower garden because the more we care for it, water it regularly, take care of each flower separately, the more beautiful that garden will be" (P: 25)

"The primary school curriculum is like atoms because everything is made of atoms. The foundations of the future profession of the student are laid at these times for the goodness or beauty of the character structure. Therefore, the primary school curriculum is like atoms" (P: 12)

"The primary school curriculum is like a flower because if we pluck the flower from the branch, it withers. If the primary school curriculum is not suitable for the students, it does not help the development of the students and the children at a young age." (P: 24)



Figure 6: Metaphors for the PSC as being Purpose-Oriented

In Figure 6, there are metaphors for the theme of the curriculum as purpose-oriented. In this theme, seven metaphors were identified. Among the metaphors identified in this theme; metaphors such as seed, ladder, school, and sunflower seed seem important. According to this, it is seen that the participants perceive the PSC as an element that achieves the goals. The participants stated that the seeds of whichever crop is desired to be collected are sown, that the goals set in the PSC and the goals to be achieved in the future have been reached, and that they have progressed step by step in line with the determined goals. The vignettes from the participants' views about the PSC being purpose-oriented are given below.

"Primary school curriculum is like a seed because you reap what you sow, it shapes the future" (P: 76)

"Primary school curriculum is like a seed because it provides the opportunity to correct the most changeable part of the society by sprouting" (P: 78)

"Primary school curriculum is like a seed because it is the basis for the ripening of the fruit like the curriculum has purposes like educating kids for the future." (P: 21)

"The primary school curriculum is like a ladder because it allows us to move forward and reach the goal of education." (P: 47)



Figure 7: Metaphors about the Applicability Theme of the PSC

Figure 7 shows the metaphors under the "applicability" theme of the PSC. Seven metaphors were identified in this theme. Accordingly, the participants thought that the PSC should be applicable in educational settings. Among the metaphors identified in this theme; analogies such as games, machines, and fork-spoon draw attention.

Gamification is necessary for activities for children to learn. It is observed that the candidates mostly use the game metaphor for PCS. According to this theme, it was determined that the pre-service teachers thought that the PSC should be applicable and that the activities in the curriculum should attract the attention of the child and be able to use it in their daily lives. The sample expressions of the participants regarding the metaphors of the applicability of the PSC are given below:

"Primary school curriculum is like a game because children learn by playing and the curriculum suggests using games in teaching activities." (P: 60)

"Primary school curriculum is like a game because it has simple acquisitions and fun and game-based activities can be done." (P: 61)

"The primary school curriculum is like a game because the curriculum contains many subjects to learn with fun and play that there is something from life for primary school children." (P: 62)

"Primary school curriculum is like a machine that works systematically because there are wheels in the system that makes up the machine, and to run this system positively, that is, in the desired direction, the wheels must be placed very meticulously for its purpose. The features and purposes that form the foundations of the curriculum are like the wheels in the same system. If these purposes are determined and determined meticulously in a correct and useful way, the curriculum (machine) can also have a regular and healthy system." (P: 44)

"Primary school curriculum is like a blank paper because it is the teacher who will fill it and will apply." (P: 18)

"Primary school curriculum is like fork-spoon because you cannot make a student eat with a fork something that should be eaten with a spoon. I think the curriculum was prepared according to the needs of children so they can learn easily." (P: 19)

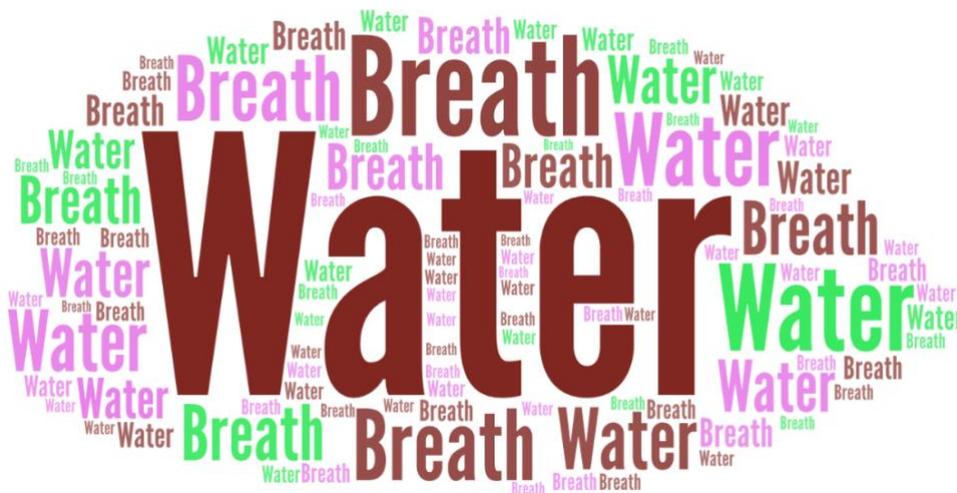


Figure 8: Metaphors for the PSC as the Foundation of Life

Figure 8 shows the metaphors under the theme of the PSC as the foundation of life. Five metaphors were identified in this theme. Accordingly, it is observed that the participants perceive the PSC as the basis of life. Among the metaphors identified in this theme; analogies such as water and breath draw attention. According to this theme, the participants think that the PSC is an indispensable element for education, as they compare the PSC to water and breath, which are necessary elements for the continuation of life. The sample expressions of the participants regarding the metaphors of the PSC as being the foundation of life are given below:

"The primary school curriculum is like water because just as water is the foundation of everything, elementary school curriculum is the foundation of education and people cannot continue their education without a primary curriculum as a start to their education." (P: 71)

"The elementary school curriculum is like water because the elementary school curriculum is just as important as water to us." (P: 72)

"The primary school curriculum is like water because water is the foundation of all humanity and the curriculum is essential to the education of people." (P: 73)

"The primary school curriculum is like water because water is indispensable for our basic life. The primary school curriculum is also indispensable as it is very important for our children, who are our future." (P: 74)

"Primary school curriculum is like breathing because we cannot maintain a healthy life without breathing. Without the curriculum the children cannot have a better education." (P: 57)



Figure 9: Metaphors in for the Other Theme

According to Figure 9, four metaphors were identified in the theme of Other. Accordingly, the candidate teachers created metaphors suitable for the categories of justice, social foundations, immutability, and generality, which are the elements of the PSC. Among the metaphors identified in this theme; analogies such as justice, mirror, roof, and frame draw attention. According to this theme, it was observed that the participants thought that the PSC determined the general goals, that teachers should be role models in achieving these goals, and that all students could benefit from equal rights. Sample expressions of prospective teachers regarding the metaphors of the other theme are given below:

In the social foundations' category:

"The primary school curriculum is like a mirror because they are a reflection of us. Because when we look at them, we see ourselves, we raise parts of us, they take us as role models in every way, whether we have affective, cognitive, or psychomotor skills, we transfer what is happening to us" (P: 13)

In the category of immutability and generality:

"Primary school curriculum is like a framework because it covers general lines for education and the teachers who implement the curriculum. Without a frame (curriculum) the teachers can be lost in the contents." (P: 22)

"The primary school curriculum is like a roof because, in general, it is always adhered to. Without a roof, the building is incomplete, without a curriculum, education is incomplete, and teachers have trouble deciding what to do." (P: 20)

In the justice category:

"Primary school curriculum is like justice because primary school curriculum has equal and democratic benefits for everyone. Education is a main human right and children should not be left without education that is the primary curriculum." (P: 1)

4. Conclusion and Discussion

In this study, the perceptions of teacher candidates as a stakeholder for the PSC were investigated through metaphors. There are 60 different metaphors related to the concept of PSC. The prospective teachers mostly created metaphors for the PSC with pomegranate, tree root, water, seed, sun, and tree. The metaphors such as breath,

chain, compass, flower, game, puzzle, sapling, and the bedrock of a building were produced by at least two participants. The metaphors such as justice, adventure book, atom, basis, blank paper; and key were created once by 45 different participants. The data were examined according to the characteristics of the curriculum and findings were reached in this direction. The metaphors created by the participants emphasize the different features of the PSC. Based on the findings eight themes emerged based on the curriculum's characteristics. The themes were PSC as being systematic, being the foundation of education, being a guide, individual foundations, purpose-oriented, applicability, being the foundation of life, and others. The themes of curriculum as being systematic, being the foundation of education, and being a guide have the highest number of metaphors.

The pre-service teachers in this study perceive the PSC as a pomegranate, spiral system, puzzle, matryoshka, and embroidery. Accordingly, it can be inferred that the candidates consider the PSC as being systematic and complex, containing a lot of information and forming the basis of all levels of education. The participants of this study think that the PSC is systematic and they state that the curriculum is interconnected, spiral, and complex. When the curriculum is evaluated in terms of its features, it can be inferred that the teacher candidates are aware of the general structure of the curriculum and its complex nature. This finding is in line with the research conducted by Gültekin (2013). According to his findings, prospective teachers emphasized the complex structure of the curriculum. A similar result was found by İzalan and Göğabakan-Yıldız (2018) that the curriculum is thought of as complex by teacher candidates. Aykaç and Çelik (2014) and Özkal (2020) also revealed that pre-service teachers had negative perceptions of the curriculum and saw it as complex. These findings are understandable because these researches were related to the 2006 curriculum, which was, according to some researchers (e.g. Gültekin, 2020), complex and loaded with lots of outcomes, explanations, and activity examples. Because of this complex nature, it was revised in 2018 and made simpler. In addition, the curriculum's complex nature was shown in a study that beginning teachers problematize the curriculum by expressing that they are subjects not objects to the curriculum because the curriculum is prepared externally and its rigid construction (Fisher-Ari & Lynch, 2015).

When the metaphors related to PSC as the foundation of education are examined it can be said that the participants compare the PSC with the foundation of the building and the root of the tree. According to this theme, primary school teacher candidates think that the curriculum is the foundation of education. This perception may be due to their emphasis on primary school education. Primary education is especially important for children's education because it is considered that success later in their life depends on the skills, values, and beliefs they gain at this basic education level. The findings of the studies done by Gültekin (2013), İzalan and Göğabakan Yıldız (2018), and Serhatlıoğlu (2016) are similar to this study. The participants in their study had a similar thought that the curriculum is important for primary education level students who are learning the basics of their future education life. Accordingly, it can be said that primary school teacher candidates are aware of the importance of the PSC in the education system.

The participants created metaphors related to PSC as being a guide in which they use the compass, navigation, guide, and the sun as metaphors in this theme. Accordingly, it can be inferred that pre-service teachers think of the PSC as a guiding and facilitating tool for teachers. This can mean that teachers can benefit from PSC to plan, implement, and evaluate educational activities. Just as the navigation and compass guide the person in need, the PSC guides the teacher in planning teaching activities and provides a more qualified teaching environment. It can be said that this finding is important in terms of the features and purpose of the curriculum. Because one of the most important features of the curriculum is to guide practitioners. Akınoğlu (2017), Fırat Durdukoca (2017), and Yıldız, Özen, and Yıldız (2018) concluded that teacher candidates perceive the curriculum as a guide for teachers while teaching. The findings of a study by Oyetero and Kareem (2022) and Yurdakul (2015) indicate that pre-service teachers perceive the curriculum as a guide to teachers. Similarly, the findings of the current study confirm that teacher candidates think of the curriculum as a guide for its practitioners, the teachers.

According to the metaphors related to the PSC as individual foundations, pre-service teachers compared the PSC to flowers and flower gardens. The participants draw attention to children's differences, interests, and needs. They think that the PSC should be based on individuals (children), and the curriculum should be prepared based on students' differences and interests. Because these important points are emphasized in the curriculum by the MoNE (2018), it can be said that teacher candidates are aware of these important issues. This finding contradicts

Özdemir's (2012) findings that prospective teachers see the curriculum as behaviorism oriented; their perceptions are close to Tyler's understanding of the curriculum and report that there are very few metaphors that reflect the constructivist understanding, which underscores children's individual differences and interests. This contradiction can be a result of the fact that Özdemir's (2012) study was related to the 2006 curriculum, which is different from the 2018 curriculum.

When the participants' perceptions are examined, it is seen that pre-service teachers mostly associated the PSC with a seed and a ladder. Just as a seed is planted and ladders are used for certain goals, it can be inferred that the participants think of the PSC as an element developed to achieve the determined goals. The curriculum is prepared based on the national goals that nations intend to have in their citizens. The first element of the curriculum is the objectives on which the curriculum is based. A quality curriculum should be related to the realization of the educational objectives (Gültekin, 2017). It can be inferred that the participants think of the PSC as a factor that shapes the future to achieve the determined goals. The finding related to this conflicts with the findings of Yeşilpınar Uyar (2017) because the researcher concluded that the knowledge level of teacher candidates about the curriculum is partially sufficient in his study.

When the participants' metaphors are examined, it is observed that they compared the PSC mostly to games, machines, and fork-spoon. Accordingly, it can be inferred that the PSC should be applicable in real classrooms. The content in the curriculum should be related to real life and they should be prepared to meet the children's individual needs and the needs of the society in which the curriculum was developed. It is also important to underscore the fact that the curriculum should be based on revealing the hidden talents of individuals and improving them. As the implementers of the curriculum, the teachers should be able to adapt the content in the curriculum according to the children's social characteristics. In addition, the teachers should be able to organize the teaching and learning activities based on the student's interests, needs, and environmental conditions. In short, the PSC should be implemented based on the different needs and interests of children.

According to the applicability theme, the participants drew attention to the applicability feature of the curriculum, which is one of the important features of the curriculum. When the curriculum is prepared functionally and flexibly, it may be possible to implement them in all schools of the country. A curriculum that is not viable, even if it is a perfect one, has no meaning and remains the "official" curriculum on policy papers. In this respect, the participants need to perceive the PSC as applicable. Because when pre-service teachers start teaching, they will have to apply the curriculum and it can be thought that if they find the curriculum applicable, it will positively affect the implementation of the curriculum.

For the PSC as the foundation of life theme, the participants compared the PSC to water and breath. The PSC is crucial to the student's ability to continue their education, just as oxygen and water are essential to life. It can be concluded that the teacher candidates emphasize the importance of primary school education. Primary school is the school level where individuals receive the most basic education, learn to read and write and acquire basic mathematical and social communication skills (Korkmaz, 2021). For this reason, it is a remarkable finding that teachers who will be teaching at this level, in other words, who are in the position of planning, implementing, and evaluating education for students, have grasped the importance of primary school and education.

In the "other" theme, the participants created mirror, frame, roof, and justice metaphors for the PSC. According to this, the PSC is seen as a general framework in educational practices. In addition to this, the values of society should be transferred through the curriculum by being a role model for future generations. Some of the participants in this study emphasized the objectives of the PSC and highlighted the concept of justice. According to this, the curriculum should be based on equality, which refers to the social basis of the curriculum that is unchanging and general. The immutability and generality principle of the curriculum refers that the contents of the curriculum should be taught in all schools. However, this does not mean that it is taught in the same way and at the same time in all schools. In other words, the content in the curriculum can be adapted or covered in depth according to the conditions of the school, class, students, teacher, and environment.

It is interesting to observe that the participants did not produce any metaphors related to the scientificity, economic compatibility, and compliance with the expectations of society and the state features of a quality curriculum. Because the curriculum as scientific emphasizes that it is prepared or should be prepared by contemporary educational psychology and teaching-learning theories. In 2018 curriculum documents, the MoNE (2018) explains this by outlining that the curriculum was prepared based on new developments in learning psychology, educational sciences, and the needs of the economy. However, the participants did not produce any metaphors related to these. It can be concluded that the participants are not aware of these features of the curriculum.

While previous studies in the literature examined the perceptions about the previous PSC, this study examined the perceptions about the new 2018 PSC. In this context, the differences in the findings obtained in the current study can be related to the structure of the curriculum and the change in teacher education. In the previous teacher education catalog the courses related to the curriculum were fewer however in the new catalog, more courses – compulsory and elective- related to PSC were added, and by doing so the candidates have more chances to examine the structure of the PSC and the curriculum development process, and to interact with the PSC.

In general, it can be concluded that primary school teacher candidates have perceptions that are suitable for most of the basic features and philosophy of the PSC. Although studies in the field of curriculum development have increased in recent years, it is observed that the perceptions of prospective teachers, who are among the important stakeholders of the curriculum, are not studied enough. It is believed that this research fills an important gap in the field. Within the framework of the results of the present study, it can be concluded that the results have provided curriculum development experts with some data.

5. Limitations of the Study and Recommendations

The results of this study are important in terms of teacher education and curriculum development. This cross-sectional study was conducted with students in an education faculty, and due to the nature of qualitative studies, there is very little opportunity to generalize. Although the findings allowed making inferences about the perceptions of prospective teachers about the PSC, there is a need for similar studies with different methods and tools. In the context of the results of this study, the recommendations are as follows:

- Activities can be designed to increase the curriculum literacy levels of prospective primary school teachers.
- Activities for teacher candidates who are in the position of applying the PSC to examine the current curriculum more deeply and critically can be carried out.
- PSC and curriculum development elective courses can be made compulsory and the teaching methods and techniques of the course can be improved.
- Curriculum development specialists can use the data from research done with pre-service teachers to update and renew the current curriculum.
- Qualitative and quantitative research with different participants and research designs can be conducted to examine the perceptions and attitudes of teacher candidates toward the PSC.

Acknowledgments

The author thanks the participants of this research for sharing their ideas.

References

- Akinoğlu, O. (2017). Pre-service teachers' metaphorical perceptions regarding the concept of curriculum. *International Journal of Instruction*, 10(2), 263-278.
- Akyol, C. (2021). Metaforların kullanım alanları ve faydaları [Uses and benefits of metaphors] In B. Kılcan (Ed.), *Metafor ve eğitimde metaforik çalışmalar için bir uygulama rehberi* [A guide for metaphor and metaphorical studies in education] (pp.49-87). Pegem Akademi.
- Alan, Y. (2021). Metaphors of academics in Turkey for distance education. *International Journal of Progressive Education*, 17(4), 171-187. <http://dx.doi.org/10.29329/ijpe.2021.366.11>

- Alarcón, P., Díaz, C., & Vergara, J. (2015). Chilean preservice teachers' metaphors about the role of teachers as professionals. In W. Wan, & G. Low (Eds.), *Elicited metaphor analysis in educational discourse* (pp. 289-314). Benjamins Publishing Company.
- Alarcón, P., Díaz, Ç., Tagle, T., Vásquez, V., Inostroza, M. J., Quintana, M., & Ramos, L. (2019). Map, foundations, recipe, burden: teachers' conceptual metaphors on lesson planning. *DELTA*, 35(4), 1-22. <http://dx.doi.org/10.1590/1678-460X2019350408>
- Atik, A. D. (2020). Pre-service science teachers' perception of distance education: A Metaphor analysis. *International Journal of Scholars in Education*, 3(2), 148-170.
- Aykaç, N., & Çelik, Ö. (2014). Comparison of methaphoric perception of teachers and pre-service teachers about curriculum. *Education and Science*, 39(173), 328-340.
- Baş, G. (2016). Curriculum evaluation scale: Validity and reliability study. *Turkish Journal of Educational Studies*, 3(1), 53-80.
- Burak, D. (2022). Örneklemeye yöntemleri [Sampling methods]. In H. Tabak, Aksu Dünya, B., & Şahin, F. (Eds.), *Eğitimde araştırma yöntemleri* [Research methods in education] (pp. 126-153). Pegem.
- Burak, D., & Amaç, Z. (2021). "Refugee students are like broken-winged birds" pre-service teachers' perceptions of refugee students. *Milli Eğitim*, 50(Special Issue), 221-247. <http://dx.doi.org/10.37669.milliegitim.955233>
- Çelikkaya, T., & Seyhan, O. (2017). Metaphor perceptions of social studies teachers and preservice teachers related to universal values. *E-Uluslararası Eğitim Araştırmaları Dergisi*, 8(3), 65-87. <https://doi.org/10.19160/ijer.342330>
- Çırak Kurt, S. (2017). Secondary school teachers' metaphoric perceptions of the concept of curriculum. *Dicle University Journal of Ziya Gökalp Faculty of Education*, 31, 631-641. <http://dx.doi.org/10.14582/DUZGEF.654>
- Demir, B., Yücesoy, Y., & Serttaş, Z. (2020). Program literacy levels of teacher candidates: The example of TRNC. *Uluslararası Türk Kültür Coğrafyasında Sosyal Bilimler*, 5(1), 28-37.
- Demirtaş, Z. (2017). A general view to program evaluation approaches in education. *Sakarya University Journal of Education*, 7(4), 756-768. <http://dx.doi.org/10.19126/suje.388616>
- Erdamar, F. S., & Akpunar, B. (2020). Analysis of classroom teachers' perceptions of curriculum literacy. *Journal of Education and Training Studies*, 8(3), 21-31. <https://doi.org/10.11114/jets.v8i3.4619>
- Erden, M. (1998). *Eğitimde program değerlendirme* [Curriculum evaluation in education] (3. Baskı). Ankara: Anı Yayıncılık
- Ertürk, S. (1993). Eğitimde "program" geliştirme [Curriculum development in education] (7. Baskı). Meteksan.
- Faiz, M., & Karasu Avcı, E. (2019). The metaphorical perceptions of social studies teacher candidates related to "Ataturkism". *Bayburt Eğitim Fakültesi Dergisi*, 14(28), 217-252. <https://doi.org/10.35675/befdergi.475283>
- Fırat Durdukoca, Ş. (2017). Metaphorical perceptions of prospective teachers related to curriculum development course. *SOBİDER The Journal of Social Sciences*, 4(11), 349-365.
- Fisher-Ari, T. R., & Lynch, H. L. (2015). Archeology, legos, and haunted houses: Novice teachers' shifting understandings of self and curricula through metaphor. *Journal of Curriculum Studies*, 47(4), 529-552. <https://doi.org/10.1080/00220272.2015.1049297>
- Gültekin, M. (2013). The metaphors that primary education teacher candidates use regarding curriculum. *Education and Science*, 38(169), 126-141.
- Gültekin, M. (2017). Program geliştirmeye ilişkin temel kavramlar [Basic concepts related to curriculum development]. In B. Oral ve T. Yazar (Eds.), *Eğitimde program geliştirme ve değerlendirme* [Curriculum development and evaluation in education] (pp. 2-42). Pegem Akademi.
- Gültekin, M. (2020). Cumhuriyet dönemi ilkököl programları [Primary school curriculum in republican era]. In M. Gültekin (Ed), *Cumhuriyet dönemi ilkököl programlarındaki gelişmeler* [Developments in primary school curriculum in republican era] (pp. 2-74). Pegem Akademi
- Hesapçioğlu, M. (1994). *Öğretim ilke ve yöntemleri: Eğitim programları ve öğretim* [Teaching principles and methods: Curriculum and instruction] (3rd ed.). Beta.
- Ibrahim, A. M. (2016). Curriculum metaphors. *The Eurasia Proceedings of Educational & Social Sciences (EPESS)*, 4, 385-390.
- İzalan, Z., & Gögebakan-Yıldız, D. (2018). A comparative study of classroom teachers' educational beliefs and metaphorical perceptions of curriculum, *International Online Journal of Educational Sciences*, 10(4), 199-214.
- Kahramanoğlu, R. (2019). A study on teachers' levels of curriculum literacy. *The Journal of International Social Research*, 12(65), 827-840. <http://dx.doi.org/10.17719/jisr.2019.3495>
- Kara, A., & Akdağ, M. (2017). Program değerlendirme modelleri-I [Curriculum evaluation models-I]. In B. Oral, & T. Yazar (Eds.), *Eğitimde program geliştirme ve değerlendirme* [Curriculum development and evaluation] (pp. 469-488). Pegem Akademi
- Kasoutas, M., & Malamitsa, K. (2009). Exploring Greek teachers' beliefs using metaphors. *Australasian Journal of Teacher Education*, 34(2), 64-83.

- Kavrayıcı, C. (2021). Metaphoric perceptions of pre-service teachers about the concepts of “school principal” and “education system.” *Turkish Online Journal of Qualitative Inquiry (TOJQI)*, 12(2), 89-115. <https://doi.org/10.17569/tojqi.833572>
- Kılcan, B. (2021). Eğitim bilimlerinde metaforların veri toplama aracı olarak kullanılması, örnek bir uygulama [Usage of metaphors in education science as a data collection tool, an example]. In B. Kılcan (Ed.), *Metafor ve eğitimde metaforik çalışmalar için bir uygulama rehberi* [A guide for metaphor and metaphorical studies in education] (pp.88-108). Pegem Akademi.
- Kliebard, H. (1982). Curriculum theory as metaphor. *Theory into Practice*, 21, 11-17. <https://www.jstor.org/stable/1476704>
- Korkmaz, İ. (2021). İlkokul programının özellikleri [Characteristics of primary school curriculum]. In İ. Korkmaz (Ed.) *İlkokulda öğretim öğretmen el kitabı* [Teacher handbook for teaching in primary schools] (pp. 1-16). Pegem Akademi.
- Kuzu, O., Kuzu, Y., Sıvacı, S. (2018). Preservice teachers’ attitudes and metaphor perceptions towards mathematics. *Çukurova Üniversitesi Eğitim Fakültesi Dergisi*, 47(2), 897-931.
- Lakoff, G., & Johnson, M. (1980). Conceptual metaphor in everyday language. *The Journal of Philosophy*, 77(8), 453-486.
- Lakoff, G., & Johnson, M. (2003). *Metaphors we live by*. University of Chicago Press.
- Merriam, S. B., & Tisdell, E. J. (2016). *Qualitative research: A guide to design and implementation* (4th ed.). Jossey.
- Ministry of National Education [MoNE]. (2018). *Öğretim programları* [Teaching curricula]. <http://mufredat.meb.gov.tr/ProgramDetay.aspx?PID=326>
- Moser, K. S. (2000). Metaphor analysis in psychology-method, theory, and fields of application. *Forum: Qualitative Research*, 1(2). Article 21. <http://dx.doi.org/10.17169/fqs-1.2.1090>
- Oliva, P. (2012). *Developing the curriculum* (8th ed.). Allyn & Bacon
- Oral, B., & Süer, S. (2017). Program değerlendirmede kullanılan araştırma yöntemleri ve veri toplama araçları [Research methods and data collection tools in curriculum evaluation]. In B. Oral & T. Yazar (Eds.), *Eğitimde program geliştirme ve değerlendirme yöntemleri* [Curriculum development and evaluation methods] (pp. 509-538). Pegem Akademi.
- Ornstein, A. C., & Hunkins, F. P. (2018). *Curriculum: Foundations, principles, and issues* (7th ed.). Pearson.
- Oyetero, O. S., & Kareem, A. O. (2022). Pre-service teachers’ metaphors of the relationship between curriculum and instruction. *International Journal of Curriculum and Instruction* 14(2), 1392–1418
- Özalp, H. K. (2018). Perception of elementary education and art education teacher candidates towards the aesthetic concept. *Universal Journal of Educational Research* 6(10), 2187-2198. <http://dx.doi.org/10.13189/ujer.2018.061017>
- Özdemir, S. M. (2012). Metaphoric perceptions of prospective teachers regarding the concept of curriculum. *Journal of Theoretical Educational Science*, 5(3), 369-393.
- Özenç, E. G., & Özenç, M. (2018). Classroom teacher candidates’ metaphoric perceptions regarding the concepts of reading and writing: A comparative analysis. *International Education Studies*, 11(1), 100-110. <https://doi.org/10.5539/ies.v11n1p100>
- Özkal, N. (2020). Teacher Candidates’ metaphorical perceptions for “curriculums applied in Turkey.” *Ekev Akademi Dergisi*, 24(81), 309-328.
- Saban, A. (2004). Entry level prospective classroom teachers’ metaphors about the concept of “teacher.” *The Journal of Turkish Educational Sciences*, 2(2), 131-155.
- Saban, A., Koçbeker, H. N., & Saban A. (2006). Öğretmen adaylarının öğretmen kavramına ilişkin algılarının metaforlar yardımıyla analiz edilmesi [Analyzing pre-service teachers’ perceptions about the teacher concept through metaphors]. *Educational Sciences: Theory & Practice*, 6(2), 509-522.
- Serhatlıoğlu, B. (2016). Metaphorical perceptions of prospective teachers of curriculum. *The 2016 WEI International Academic Conference Proceedings*. Prague, Czech Republic.
- Steiner, D. (2018). *Curriculum literacy in schools of education? The hole at the center of American teacher preparation*. <https://learningfirst.com/wp-content/uploads/2020/07/8.-Curriculum-literacy-in-schools-of-education.pdf>
- Wiles, J. W., & Bondi, J. C. (2015). *Curriculum development: A guide to practice* (9th ed.). Pearson.
- Yazar, T., & Keskin, İ. (2020). Nitel araştırmada örneklem [Sampling in qualitative study] In B. Oral, & A. Çoban (Eds.), *Kuramdan uygulamaya eğitimde bilimsel araştırma yöntemleri* [Research methods in education from theory to practice] (pp. 229-247). Pegem Akademi
- Yazar, T., Özekinci, B., & Lala, Ö. (2017). Metaphorical perceptions of teachers and school managers related to the concept of value education. *Journal of Qualitative Research in Education*, 5(3), 245-269. <http://dx.doi.org/10.14689/issn.2148-2624.1.5c3s11m>
- Yeşilpınar Uyar, M. (2017). Perceptions of students from the department of computer education and instructional technologies regarding the concept of curriculum. *International Education Studies*, 10(9), 9-22. <https://doi.org/10.5539/ies.v10n9p9>

- Yıldırım, A., & Şimşek, H. (2011). *Sosyal bilimlerde nitel araştırma yöntemleri* [Qualitative research methods in social sciences]. Seçkin Yayıncılık.
- Yıldız, S., Özen, R., & Yıldız, K. (2018). Basic education department preservice teachers and curriculum: A metaphor study. *International Journal of Social Sciences and Education Research*, 4(1), 165-184.
- Yurdakul, B. (2015). Perceptions of elementary school teachers concerning the concept of curriculum. *Educational Sciences: Theory & Practice*, 15(1), 125-139.

A Systematic Review of Empirical Literature with Reference to Financial Derivatives

Khurshid Ali Ganai¹, Khalid Ashraf Chisti², Irshad Ahmad Malik³, Numaira Showkat⁴

¹ Assistant Professor, Business Division, Higher Colleges of Technology, Abu Dhabi, The United Arab Emirates

² Assistant Professor, Department of Commerce, University of Kashmir, Srinagar, India

³ Assistant Professor, Department of Management Studies, University of Kashmir, Srinagar, India

⁴ Research Scholar, Department of Management Studies, University of Kashmir, Srinagar, India.

Abstract

The introduction of financial derivatives in capital markets took off so as to control the volatility, thereby, providing a more controlled environment to the investors which can result more investment in capital markets. Thus, financial derivatives, most notably forwards, futures and options came into spot-light in the post-1970s period by reason of growing instability in the financial markets which was the reflection of high volatility in exchange rates and interest rates. Through the use of derivatives, it has been possible to partially or fully transfer the risk by locking-in the asset prices. During the mid-eighties, financial derivatives became the most active derivative instruments, generating volumes many more than the commodity futures. Since their emergence, these products have become so popular that by 1990s, they accounted for two-thirds of the total transactions in derivatives products. In the recent years, the market for financial derivatives has grown tremendously in terms of the variety of instruments available, their complexity and also turnover. In the class of equity derivatives, the world over, futures and options on stock indices have gained significant popularity than on individual stocks, especially among institutional investors, who are major players of index-linked derivatives, even small investors find these useful due to high correlation of the popular indices with various portfolio.

Keywords: Systematic Review, Empirical Literature, Financial Derivatives

The level of efficiency of a market determines its level of liquidity and volatility. In an efficient market, all information relevant for determining the value of a product is reflected in the current market price. A liquid market reflects truer price values and gives investors confidence in the market place. In this regard derivatives products represent some of the basic tools necessary in the mechanics of efficient capital markets. The economic functions of these derivatives contracts is to allow risks that formerly had been combined to be unbounded and transferred to those most willing to assume and manage each risk component. Thus, by virtue of derivatives application, risks are reduced and profits are increased.

The derivatives products also play a significant role in the price discovery that brings about effective dissemination of price information. In the absence of price information, investors, consumers and producers cannot make informed decisions. Thus, the wider the use of derivatives, the wider the dissemination of the price information.

Therefore, one must underscore that futures exchanges are particularly adept at price discovery and dissemination of price information. This growing importance of derivatives in the present capital markets has made various researchers around the world to undertake the studies so as to determine its real impact on the various aspects of the capital market. It is against this backdrop that the researchers have undertaken a comprehensive review of various major studies so as to make a critical analysis of these studies. Thus, this study is a humble attempt to add some more resources to the existing literature.

Lee Sang Bin and Ohk Ki Yod (1992) investigate in their study the relationship between stock index futures listing and structural changes in time-varying volatility. They undertake five significant international index futures markets in their study, such as. All Ordinaries Share Index (Sydney), Hang Seng (Hong Kong), NIKKEI (Tokyo), FTSE- 100 (London) and VFCI (New York). The findings they come up with, demonstrate that there is an increase in the spot market volatility following the introduction of NIKKEI, FTSE- 100 and VFCI Futures Contracts. But, in case of AOI and Hang Seng there is no evidence that can indicate that index futures induce volatility in the spot market, instead, Index Futures decrease the persistence of volatility shocks in the spot market.

M. Thenmozhi (2002) in her study on futures trading, information and spot price volatility of NIFTY-50 investigate the impact of futures trading on the volatility of spot index returns. The main data for the study is the returns of the S&P CNX NIFTY index futures and spot NIFTY index. The study, undertaken, reveals that there is a decline in volatility since the inception of futures trading which may be attributed to increased trading in cash market, due to faster dissemination of information, making cash market more liquid and less volatile. The study validates the statement by providing, statistically, significant difference between the volatility before and after the introduction of futures. Khurshid Ali Ganai (2020), made a study to establish whether the introduction of stock futures trading influences the volatility of the underlying stock or not? The findings put forth by the study confirms increased volatility during the post-derivatives period compared to pre-derivatives period.

Bechetti, S. and Robert, D. J. (1999) in their study regarding index futures and spot market volatility come up with the findings that suggest that there exists a high correlation between Index futures and cash market volatility as the former (Index Futures) has had a significant impact on the latter (spot market) in controlling the level of volatility during the post-derivatives period as compared to the pre-derivatives period during which the level of volatility in the spot market used to remain at higher levels. Khurshid Ali Ganai (2019), Carried out an analysis on the dynamic relationship between Index Futures and Spot Index Volatility to ascertain the extent of influence that Index Futures hold over underlying (spot index). The findings put forth by the comparison affirms that there exists a significant correlation between index futures and underlying volatility (Spot Index) as the level of the volatility throughout the post-derivatives period has had a considerable decline.

Antonios Antonion and Phil Holmes (1995) undertake the study to examine the impact of trading in FTSE-100 stock index futures on the volatility of the underlying (spot market). They took daily closing prices of FTSE-100 Index, FTSE-500 Index and FT-30 Index for the period of November 1980 to October 1991, the results presented in the paper, suggest that there has been an impact of futures trading on the spot price volatility. In particular, the variance of price change pre-futures was integrated, suggesting shocks have a permanent effect on price change, whereas, post-futures sample is stationary which indicates that futures trading improves the quality and speed of information to spot markets as confirmed by the increase in the news coefficient. Hence, the evidence suggests that there has been an increase in spot price volatility on a daily basis, but that is due to increased information in the market and not due to speculative waves.

Narasimhan Jegadeesh and Avanidhar Subrahmanyam (1993) make the study so as to determine the liquidity effects of index futures contracts on the underlying. In this regard they made an observation of bid-ask spread in the stock markets around the introduction of Standard and Poor's (S&P) 500 Index futures contracts. The researchers take the sample of S&P 500 stocks which consists of all stocks that were included in the S&P 500 index throughout the sample period, traded on the NYSE. The controlled sample of non-S&P 500 stocks were selected randomly choosing an equal number of stocks that did not appear on the index in the sample period. They documented that there is evidence that the average proper time spread in the stock market increased subsequently on the introduction of the futures contracts. It was witnessed that the spread increased significantly in the S&P 500

sample and marginally in the non-S&P 500 sample. The researchers repeat the test by controlling the factors like price, return variance and trading volume. The results still suggested that the spread has remained at higher levels throughout the post-derivatives period. Thus, the overall results indicate that the onset of index futures did not reduce spreads in the spot market, besides, there also exists weak evidence that spread might have increased in the post-futures period.

Nicolas, P. Bollen (1998) in his study regarding the impact of options on the return volatility seeks to determine whether the introduction of options affects the return variance of underlying stocks. The final data sample taken includes 745 stocks from New York Stock Exchange (NYSE-AMEX) and 265 NASDAQ stocks, all with no missing observation of returns. A control group is constructed by matching each stock in the sample group one-for-one with another stock within the same trading location. The evidence that emerges out from the results indicates that the average impact of options introduction on variance is insignificant, since the control group exhibits change in variance that match the change in options stocks. Thus, this evidence supports the hypothesis that options listing has no significant effect on stock return variance. Khurshid Ali Ganai (2021), *Carry out an investigation to determining the impact of Stock options trading on the volatility of underlying stocks. The study affirmed an increase in the level of volatility in the post-derivatives period. Thus, the study concluded, on the basis of the comparative analysis of statistical scores that the introduction of stock options trading has a definite impact on the volatility of the underlying stocks as the volatility levels registered upward trajectory throughout the post-derivatives period as compared to pre-derivatives period.*

Benilde Maria Do Nascimento Oliveira and Manual Jose Da Rocha Armada (2001) investigate the impact of futures market on the volatility of spot market. The main data are in relation to Portuguese stock index-20 for the period under analysis is collected from the Oporto Derivatives Exchange. The results in relation to the analysis of the variance suggest an increase of the mean level of the volatility for the Portuguese stock market after the introduction of the Portuguese stock index-20 index futures market and it seemed that the Portuguese stock market became less efficient as the volatility shocks became more persistent after the inception of Portuguese stock index -20 index futures transactions.

Cao, H. Henry (1999) examines the effect of derivatives assets on information acquisition and price behavior in the rational expectation equilibrium. The results demonstrate that introduction of options contracts performs market completion function. However, additional options trading will have less effect on the price of underlying asset. It is also concluded that introduction of derivatives reduces price volatility as price becomes a less biased estimate of the asset payoff due to more information collection, regarding liquidity. He cautions that the effect on trading volume (liquidity) of underlying asset would depend upon the kind of derivatives asset introduced in the market. He expects the liquidity of the underlying asset to increase after the commencement of options trading.

Maberly, Edwin D; Davis, S. Gilberth and Roy, F. (1989) undertake the study to examine the influence of stock futures on cash market volatility. They use several different time sub-periods to emphasize the fact that the results are highly sensible to the selected time period. The selected post-futures sub-period is between the years 1987-1988 in which they witness a significant volatility for the year of 1987-1988 that simply reflects more accurate information diffusion process.

Bacha, O. and Villa, A. F. (1994) in their study put forth that the futures markets have had an influence over the volatility of the cash market. However, they argue, that the changes in the volatility may be ascribed erroneously to futures trading if changes in the economic factors induce concurrent changes in the volatility. Similarly, counter movements in these factors may obscure futures- related changes in volatility. Khurshid Ali Ganai and Ahmad Hayek (2020), made a study to determine if the onset of stock futures trading affects the liquidity level of the underlying assets. The analysis of the level of liquidity of both the reference periods is made separately, followed by a comparative analysis of both the periods that leads the study to the conclusion, affirming that the onset of stock futures has brought about a significant impact on the liquidity of the underlying stocks. Hence, the findings of the study have further strengthened the argument that the onset of futures trading has caused diversion of speculative interest towards the futures market. Thus, causing a decline in the level of liquidity in the spot market.

Kumar Raman, Atulya Sarin and Kuldeep Shastri (1998) undertake the study to find the impact of options trading on the market quality of the underlying security. After a comprehensive analysis in terms of liquidity, information asymmetry and price efficiency. The findings that they put forth are Consistent with the findings of earlier studies. They come to the conclusion that options listing do have a beneficial impact on the market quality of the underlying share, more specifically, they observe a decrease in the spread and an increase in quoted depth, trading volume, trading frequency and transaction size after options listing which simply indicates higher liquidity, lower information asymmetry and greater price efficiency.

Hodgson Allan and Nicholls Des (1991) undertake the study to estimate the impact of index futures markets on Australian share market volatility. After making a thorough analysis of the data, collected from the Australian Associated Stock Exchange AOI (All Ordinaries share index), the findings suggest that the introduction of index futures market in Australia has not brought up any increase in the stock market volatility that also strengthens the argument put forth by the United States of America studies.

Damodaran, Aswath and Joseph Lim (1991) in their study wherein, an attempt is made to investigate the effects of options listing on the underlying stocks return process. The potential explanation put forward for the observed variance decline after the listing of options contracts is that the option listing does not lead to shift in intrinsic variance rather it expedites the price adjustment process. It is also evident from the study that option listing leads to decline in the noise term that can be attributed to decline in either bid-ask spread or in noise in the information process as institutional activity increase in the optioned stocks. However, they were unable to find the relation of trading volume with the event of option listing. Khurshid et.al. (2020), Undertook a study to make an empirical investigation of volatility effects of index options trading on the underlying spot index. After the thorough analysis, the findings put forth by the study confirm that the introduction of index options contracts on the sample index has resulted into increased volatility throughout post-derivatives period compared to pre- derivatives period.

Skinner, Douglas J. (1989) undertakes the study to examine the relationship between options markets and stock return volatility. After the analysis of the data, he concludes that options listing is associated with a decline in stock return variances and an increase in trading activity in the underlying stock. But, he does not find any impact on non-diversifiable risk of the stock. However, he is unable to find the evidence whether the decline in the variance of observed returns is attributable to the changes in trading noise. Khurshid et.al. (2020), made a detailed study about the growth of derivatives in India and the findings of the study put forth that the derivatives has grown quite well over the years, despite, many economic turbulences.

Brenner, M; Subrahmanyam, M. and Uno Jo (1989) investigate in their study the behaviour of price of Nikkei spot market and futures market. They put forth that futures trading increases spot portfolio volatility but the volatility impact does not spill-over to stocks against which futures are not traded. Thus, it is concluded in the study that the absence of volatility spill-overs from Nikkei to non-Nikkei stocks suggest that the volatility impact is not spuriously caused by extraneous economic disturbances.

Hayes, Samuel L. and Michael, E. Tannenbaun (1979) investigate the impact of option listing on the volume of underlying shares traded in the cash market. They conclude that the listing does not result in increase in the volume of trading in the underlying shares. According to them, this effect is caused by the variety in option trading strategies and linking between cash market and option market as it results in continued feedback to each of these markets.

Whiteside, Mary M; William, P. Dukes and Patrick, M. Donne (1983) undertake the study to examine the short-term impact of option trading on underlying securities. The study do not find any clear evidence regarding the impact of options trading on the volatility of underlying security or average daily volumes. However, when results are evaluated by the year of trading, post-derivatives period witnesses a trend towards decreased variability in the number of shares traded daily.

Eric, C. Chang; Joseph, W. Chang and J. Michael Pinegar (1999) undertake the study to investigate whether futures trading increases stock market volatility or not. The data for the study is obtained from the PACAP DATABASE

prepared by the University of Rhode Island. Daily close-to-close returns are used to compute return variances and cross-sectional dispersions. The total sample consists of 122 firms listed on the first section of the Tokyo Stock Exchange. Ninety-five of these firms are in the Nikkei 225 stock index. After undergoing a thorough analysis, the tests decompose spot portfolio volatility into the expected cross-sectional dispersion and the average volatility of return on the portfolio's constituent securities.

The prediction of the model is tested with two groups of stocks traded on the Tokyo Stock Exchange. As for as Nikkei stocks are concerned, spot volatility increases and cross-sectional dispersion decreases relative to average volatility after NIKKEI futures began trading on the Osaka Security Exchange (OSE). The study witnesses no shift when the Nikkei future commences trading on the Singapore International Monetary Exchange (SIMEX), as for as non-Nikkei stocks are concerned, no shift occurs when futures began trading on either exchange. These findings held with both daily and monthly data. The evidence put forth by the findings is consistent with the hypothesis that, absent the trading restrictions, futures trading increases spot portfolio volatility but the volatility impact does not spillover to stock against which futures are not traded. The absence of volatility spillover from Nikkei to non-Nikkei stocks also suggests that the volatility impact of futures trading on Nikkei stocks is not spuriously caused by extraneous economic disturbances. However, most of the variation in spot asset volatility is attributed to disturbances in broad market factors, and the increase in volatility induced by futures can only be detected when tests properly control for disturbances in these other factors.

Kamara, A; Miller Junior, T. W. and Segel, A. F. (1992) investigate the effects of futures trading on the stability of the S&P 500 returns. They witness the change in the volatility of the S&P 500 index due to the introduction of futures trading for the period 1976 to 1987; the changes in the volatility are examined using parametric and non-parametric tests. The results show that the daily returns volatility is higher in the post futures period while the monthly returns remain unchanged. It is concluded that increase in volatility of daily return in the post-futures period is necessarily not related to the inception of futures trading.

Hang Chai and Subrahmanyam, A. (1994) undertake the study to investigate whether futures trading has any impact on the volatility and liquidity of spot market by measuring bid-ask spread. The main data are collected from S&P 500 and the major market index for the period of one year. After the analysis of the data, the findings that emerge out indicate that the average intraday bid-ask spread in post-major market index futures has increased while there is no significant change in the volatility. The trading volume has registered a rise in both S&P 500 and the major market index.

Bauldof Brad and Santoni, G. J. (1991) in their study regarding stock price volatility. After making a thorough analysis of the data, the results decompose that the index futures transactions have had a destabilizing impact on the underlying volatility of the spot market prices. Thus, the spot market has witnessed more volatility during the post-derivatives period as compared to the pre-derivatives period.

Gorton, G. and Pennacchi, G. (1991) in their study regarding, security baskets and index linked securities, come up with the findings that imply a reduction in trading volume in the individual stocks on the introduction of index futures because uninformed portfolio trades migrates to the futures market. Since there is a large degree of substitutability between diversified portfolios and uninformed traders with portfolios that do not correspond to the underlying index may also switch to the futures market. The migration of uninformed traders to the futures market may, therefore, occur both from S&P 500 stocks and many widely held non-S&P 500 stocks. Moreover, uninformed speculative trades from stocks in general may also shift to the futures market. Thus, *Ceteris Paribus*, one predicts a reduction in the trading volume of the underlying stocks not on the index, following the introduction of futures market.

Mark Fedenia and Theohary Grammatikos (1992) undertake the study with the purpose of investigating the impact of options listing on the bid-ask spread of the underlying stock. The main data were collected from five options exchange. Chicago Board of Option Exchange (CBOE), American Stock Exchange (AMEX), Pacific Stock Exchange (PSF), Philadelphia Exchange (PHLX) and New York Stock Exchange (NYSE). The sample for the study contains 340 NYSE stocks and 98 OTC stocks that traded call options for various periods of time on at least

one of the five option exchanges. The findings of the study witness that options listing do significantly affect the spread of the underlying stock. The empirical findings show an average decline in spreads of NYSE traded stocks associated with the options trading. The firms selected for options listing exhibit changing volatility that may actually cause the option exchange to list the stock. The findings show that, although volatility changes affect spreads around options listing. There appears to be a distinct effect on stock spreads due to the options listing. The listing effect apparently co-exists with volatility changes surrounding options listing. Average volatility in the stock appears to be enhanced by options listing.

Mckenzie Michael, D; Brailsford, T. J. and Robert, W. Faff (2001) in their study examine the impact of the introduction of stock index futures trading on the daily returns seasonality of the underlying index for seven national stock market indices. Specifically, the markets analysed are Australia, Spain, Germany, Japan, Switzerland, The United Kingdom and The United States. Daily stock market index data are collected from the DataStream data base from the earliest available data to the end of January 1999. The findings that the study comes up with generally, suggest that the introduction of futures trading has been associated with reduced seasonality of mean return.

Harris, L. M. (1989) undertakes the study to investigate the impact of index futures on the volatility of spot market. It is observed that there emerges increased volatility after the introduction of index futures by comparing daily return volatility during the pre-futures (1975-1982) and post-futures (1982-1987) between S&P 500 and non S&P 500 group of stocks controlling for differences in firms attributes. It is noted that increase in volatility is a common phenomenon in different markets and index futures by themselves may not bear the sole responsibility. The researcher points out other related instruments and developments such as growth in index funds and increase in foreign ownership or equity are possible explanation for higher volatility in stock markets.

Grossman, S. and Miller, M. (1998) undertake the study on the liquidity of the underlying security and the results exhibit that options play a real information role that cannot be fulfilled by dynamic trading strategies in the underlying security. Specifically, in imperfect markets, options increase investors' ability to engage in speculation and hedging activities by reducing uncertainty in the cost of obtaining the desired payoff patterns. Besides, the price of the traded option conveys demand for the security. This information cannot be easily established from observed prices when the security must be dynamically synthesized. Both of these effects may attract new traders who find the options market to be cost efficient relative to synthetic option strategies. Therefore, traded options result in a less uncertain and more liquid market for the underlying security.

James, T. W. (1993) undertakes the study to study the impact of price discovery by futures market on the cash market volatility. Thorough analysis of the data is undertaken to determine the price discovery function of the futures market. The findings that emerge out affirm that futures market is beneficial with respect to cash market as it brings about better efficiency, higher liquidity and also lowers the long term volatility of the spot market.

Brorsen, B. Wade (1991) undertakes the study on futures trading, transaction costs and stock market volatility. The findings of the study exhibit that short-term volatility increases (variances of daily price changes) while long-term volatility (variances of week and month price changes) does not exhibit any significant change.

Irag, G. Kawaller; Paul, D. Koch and Timothy, W. Koch (1990) examine the relationship between volatility in S&P 500 futures price and volatility in the S&P 500 index. The data are collected from Chicago Mercantile Exchange (CME) which consists transactions data on all values of nearby S&P 500 futures contracts and all values of the S&P 500 index for every business day in the forth quarter of 1984-1986. This data are used to construct time series reflecting volatility movements in futures and index prices over the life of a nearby futures contract. The paper looks into whether intraday S& P 500 index futures and S&P 500 index price volatility has changed notably in recent years and whether intraday volatility in futures prices has systematically led to intraday volatility in the index. The results exhibit that average intraday volatility for both S&P 500 futures and index prices increased from 1984 to 1986. However, it is revalidated by granger tests that there exists no systematic pattern of futures volatility leading index volatility, or index volatility leading futures volatility.

Detemple, Jerome and Philippe Jorion, (1990) undertake the study to investigate the relationship between options listing and stock returns. The findings of the study exhibit that the introduction of the option market increases the speed at which information is released to the market because investors with private information prefer to take position in options market as against the stock market, therefore, the introduction of options has price effects, volatility effects, cross effects, announcement effects and persistence effects on the market for underlying shares. Antonios Antoniou, Gioia Pescetto and Antonis Violaris, (2003) In their study investigates the stock index and stock index futures market interdependence that is lead-lag relationship and volatility interactions between the stock and futures markets of three main European countries, namely France, Germany and the United Kingdom. In addition, the paper explicitly accounts for potential asymmetries that may exist in the volatility transmission mechanism between these markets. The findings of the study put-forth that the volatility levels transfer from futures market to spot market.

Golaka, C. Nath (2006) study the behavior of volatility in cash market after the introduction of derivatives in order to arrive at a dependable conclusion, comparison is undertaken, regarding performance of the stocks for whom derivatives are available with those for whom the same is not available and it is seen, generally, that the static volatility has come down for almost all the stocks while for a few the same has increased. Only one stock from the sample under study which witnesses higher levels of static volatility during last one year period compared to pre-derivatives period. The statistical scores in the study suggest that the volatility of the market as measured by benchmark indices like S&P CNX NIFTY and S&P CNX NIFTY JUNIOR have fallen in the post-derivatives period.

Elfakhani Said and Mohammad Chudhury (1995) undertake the study to find the volatility effect of options listing and the underlying security. In the study, it is established on the basis of the results that options listing has a stabilizing effect and the underlying security in total risk as well as non-diversifiable risk sense during 1970s. In 1987, Said and Chaudary come up with another study in which it is concluded that listing of put options have stabilizing effect as the systematic risk of the underlying stocks has declined in post-options listing in Canada. Besides, an analysis of the cross-sectional variations in the volatility effect of put options listing has been undertaken and the results exhibit that options listing enhances liquidity and thus has a stabilizing influence on the stock variance.

Chatrath Arjun, Ramchander Sanjay and Sang Frank (1998) undertake the study to examine the impact of speculative activity and stock market volatility. The findings of the study report a total lack of empirical evidence to support the argument that the number dimensions of speculative positions in S&P 500 index futures market produce higher level of spot volatility.

Hogan Kedreth, C. J; Kroner Kenneth F. and Sultan Jahangir, (1987) make a study to find out the relationship among program trading, Non-program trading and market volatility. It is concluded in the study that futures transactions can, in fact, produce greater spot volatility. However, these authors emphasize the idea that such volatility does not necessarily mean less efficient prices.

Jangkoo Kang, Chang Joo Lee and Soonhee Lee (2006) make an empirical study to investigate intraday price change relations in the KOSPI-200 (Korea Composite Stock Price Index) spot market, the KOSPI- 200 futures markets, and the KOSPI- 200 options market and provided some explanation for the observed lead-lag relations. First all the relationships among the stock market, its futures market and its options market. Besides, the study extends to examine the lead-lag relations of volatilities as well as, thereof, returns among the markets.

The study come up with the findings that the KOSPI- 200 futures and options returns lead the KOSPI- 200 stock index returns by up to 10 minutes. This relation still holds in market after the bid-ask spread affect and the trading effect. There is also no evidence that the change in the released volatility of the KOSPI 200 implied forwards lead or lag changes in the released volatilities of the KOSPI 200 futures returns. It is also witnessed that the KOSPI 200 futures and options volatilities lead the KOSPI 200 stock index volatilities by around five minutes.

Premalata Shenbagaraman (2004) assesses in the study the impact of the index futures and options contracts and the volatility of the underlying stock index in India. The data used in the study are taken from the S&P CNX NIFTY (INDIA) which is related to stock index futures and options contracts. The analysis of the study put forth that derivatives introduction does not have any significant impact on the spot market volatility. However, futures introduction seems to have changed sensitivity of NIFTY returns to the S&P 500 returns. The study also puts forth that the introduction of derivatives contracts improves liquidity and reduces informational asymmetries in the market. The study is concluded with the evidence that there exists no linkage between trading activity variables in the futures market and spot market volatility.

John Board, Gleb Sandmann and Charles Sutcliffe (2001) undertake the study to investigate the effect of futures market volume on spot market volatility. After the analysis, it is found that there exists no evidence that can affirm that futures trading instantly destabilizes the spot market. There is also no evidence that can suggest that an increase in volume in one market, relative to other market, instantly, destabilizes the spot market. Overall, the results demonstrate that contrary to some regulatory claims, contemporaneous futures trading, after expelling for the effects of information arrival and time trends, does not destabilize the spot market.

Ma, C. K. and R. P. Rao (1986) make a study to observe option trading and volatility of the underlying stock, in the study, there is a distinction, that is made between the stock experiencing increased volatility from those with decreased return volatility using multiple discriminate analysis and it is concluded that stocks with low return high risk, lower volume traded and lower growth potential, are more likely to be stabilized by the introduction of options.

One more study is made by the same team of researchers in 1988 in which it is concluded that there is a differential market impact of options on underlying stocks with volatile stocks becoming more stable after the listing because hedging behavior by uninformed traders and stable stocks becomes more volatile after listing because of increased speculation in the options markets by informed traders and provide support to this hypothesis by relating the post-listing change in variance to the pre-listing variance level for 245 stocks with options listed on them.

Amihud Yakov and Haim Mendelsol (1987) undertake a study to break down the observed return variance in the pre-listing and post-listing periods into three components an intrinsic variance portion that can be attributed to the volatility or the underlying business a price adjustment component that captures the effect of an imperfect price adjustment process and noise turns that is the result or information risk and the bid-ask spread. It is observed in the study that prices adjust more quickly to new information after option listing and the noise becomes smaller after the listing.

An attempt in the study is also made to explain speedier price adjustment in the post-listing period by looking at shifts in the information structures. In particular, it is found evident that more information is collected and disseminated to investors after the listing options. This reduction in the noise after the listing of options is attributed to a lower bid-ask spread, partially, because of increased complexion from market makers on the option markets and partially, because of increased interest from institutional investors.

Herbst Anthony; John McCormick and E. West (1997) undertake a study to investigate the lead-lag relationship between spot indices and their futures contracts. The results of the study indicate that the movements in the level of S&P 500 futures prices systematically lead movements in the S&P 500 index. It is against these results that lead to the expectation that there may exist the same relationship between the volatility of the index futures prices and volatility in the index where leading role is played by index futures prices.

Nabar, P. and Park, S. (1988) in their study regarding options trading and stock price volatility. The study comes up with the results that indicate towards the conclusion that there exists an impact of options trading on the volatility of stock prices. In the main conclusion the study affirms that stock return variance declines post-listing period in comparison with the pre-listing period.

Takato Hiraki, Edwin Marherly and Nohaya Takezawa, (1995) in their study investigate relationship between OSAKA NIKKEI Index futures and overnight spot returns for the period September 1988 through June 1991. The data for the study are provided by Osaka stock exchange that consists of Osaka Nikkei futures transaction prices for the September 1988-June 1991 period. The futures prices used in the study are for the contract to the nearest to the maturity except in the contract month when the price data is for the next nearest contract. After the employment of the statistical tools, the study puts forth the results that affirm the fact that there exist statistically a significant positive relationship between the unexpected component of futures return and overnight spot returns. In addition, the unexpected component of futures returns is positively related to trading period of spot returns over the next two days.

Harry, C. and R. Wholey (1992) undertake a study to assess the dynamic behaviour of spot market volatility by forecasting the volatility implied in the transaction prices of S&P 100 index options. Although volatility changes appear to be predictable yet it is noted that the results are not inconsistent with the market efficiency. In general, it is supported by various studies that derivatives market is more efficient than the underlying spot market which in turn caused reduction in the volatility once the stock is listed in derivatives market.

Bansal, V. K., Pruitt, S. W. and Wei, K. C. J. (1989) In their study regarding the impact of CBOE options initiation on the volatility and trading volume of the underlying equities. The findings of the study put forth that the initiation of the options makes a significant impact on the level of volatility and liquidity of the underlying.

Merrick John (1987) makes a study regarding volume determination in stock and stock index futures markets. The findings that emerge out from the study affirm that trading volume and price volatility are directly related. The logic suggests that if inter-market activity increases the volume of futures and stock transactions significantly that may directly increase volatility.

Kalak Chan et.al. (1991) undertake a study to assess the intraday relationship between returns and returns volatility in the stock index and stock index futures. The study covers both S&P 500 and major market index futures. The intraday patterns of volatility are estimated using auto-correlation and cross correlation patterns of the intraday returns. The findings of the study witness a strong inter market dependence in the volatility of the cash and futures market. It is also evident from the results that the intraday volatility patterns that originate either in the stock or futures market demonstrate predictability in the other market.

Min, J. H. and Najand, M. (1999) undertakes a study to examine the possible lead-lag relationship in returns and volatility between cash and futures markets, the results of the study suggest that unlike the lead lag relationship in the returns of futures and spot markets there is significant time dependent bidirectional causality between the markets, as for as the volatility interaction among the markets is concerned.

Chin Kalok; Chan, K. C. and Karolyi, G. A. (1991) undertakes a study to examine the intraday relationship among price changes and volatility of price changes in the stock index and under futures markets unlike the fact that the index futures markets turned as the primary market for price discovery as found in the previous studies, A stronger interdependence in both the directions in the volatility of price changes between the cash and the futures market then that observed in case of price changes only, The evidence provided by the results supports that the price innovation originates in one market can predict the futures volatility in another market.

Butterworth, D. (1998) undertakes a study to investigate the effect of futures trading in the FTSE mid 250 index and the underlying spot market using symmetric and asymmetric GARCH methods the results reported for the mid 250 index indicate that while the existence of futures trading have made little impact and the underlying level of volatility as measured by the standard deviation, it has significantly altered casually the structure of the spot market volatility.

Darret et. al. (1994) examine if futures trading activity has caused stock price volatility. The study is conducted on S&P 500 index futures for the period of 1982-91. The study also examines the macro economic variables such

as inflation, term structure rates and the volatility of the S&P 500 stock returns. The results affirm that the futures trading have not caused any jump volatility.

Anthony, J. (1988) undertakes a study to study the interrelation of stock and options market trading-volume data. The findings of the study affirms that trading volume on options leads trading on stocks within one day lag, suggesting that informed investors are more likely to trade on the options than on the spot market. In order to evaluate the effects of option listing on information structure, cross sectional averages for two proxies are taken into consideration. The pre-listing and post-listing periods. The post-listing increase in both proxies is larger for firms which have option listing on them, for the holdout sample of firms which do not have options listed on them, but the differences between the groups are not dramatic enough to explain the variance effects.

Sahlstorm, Petri (2001) undertake a study to analyse the impact of options listing on risk and return characteristics in Finland. The study documents that impact of stock option listing on underlying stocks volatility, bid-ask spread and autocorrelation structure of return series. the findings of the study provides an evidence which affirm that options listing causes decrease in the volatility and bid-ask spread of the underlying stock market.

Hamill Philip; A. Kwaku; K. Opong and Pat McGregor, (2002) make a study on the options listing in the United Kingdom to ascertain its impact on the underlying equity market. The study comes up with the findings that put forth that the impact of options listing event has diminished over time and this support the market completion hypothesis.

Aggarwal, R. M. (1988) makes a study regarding stock index futures and cash market volatility. The findings of the study confirm that the volatility of the post-futures period is more than the pre-futures period. However, it is added that stock index futures may not be the primary cause of this increase in volatility.

Edwards, F. R. (1988) undertake a study to investigate the futures trading and its impact on the market volatility. The study examines stock market volatility before and after the introduction of futures, and finds that futures trading bring about decrease in the volatility of the stock market.

Bessembiber, H. and Segian, P. J. (1992) undertake a study to investigate whether greater futures trading activity (volume and open interest) is associated with higher equity volatility. The results put forth by the study are consistent with the theories predicting volatility post derivate introduction.

Kawaller Ira; Paol Koch and Temiothy Koch (1987) undertake a study to investigate the price relationship between S&P 500 spot index and S&P 500 futures index. After making a thorough analysis of the data, the results indicate that movements in the level of S&P 500 futures prices systematically lead movements in the S&P 500 spot index. It is, therefore, reasonably expected that the same relationship may exist between the volatility of the futures index prices and the spot index prices where the futures price volatility brings about the same levels of price volatility to the spot prices.

Canord, J. (1989) makes a study to find out the impact of options introduction on the price of the underlying. The data of the study is divided into two groups namely, pre-options period and post-options period. After using the statistical tools the study puts forth findings that decompose that the stock return variance has witnessed a decline during the post-options periods.

Cox, C. (1996) makes a study to find out the correlates of futures trading and market information. The findings of the study further strengthen the argument that futures trading can alter the available information and thus, spot market volatility for two reasons. That is, attracting additional traders because futures market is cost efficient than spot market. Thus, causing the diversion of speculative interest from spot market to futures market that increases the level of volatility of the spot market.

Conclusion

Hence, from the above comprehensive review of literature, it comes to fore that these studies have put forth diverse findings which has given rise to diverse school of thoughts about the impact of derivatives products on the liquidity and volatility of underlying assets. One school of thought affirms that the presence of derivatives in the capital markets enhances the dissemination of information that brings about efficiency in the flow of information that in turn can take the market towards the better levels of efficiency. Kedar Nath Mukherjee and R. K. Mishra (2006). The impact cost in the spot market is also influenced by the introduction of derivatives as these products increase the trading volume and liquidity in the cash market James T.W. (1993). The inception of futures trading has increased the liquidity of the spot market. Sandeep Srivastava (2000). These products help in the management of various risks through its diversified product range and they enable the market to absorb risk, otherwise, the cost of risk to the economy would be worse off. They serve as the agents of price discovery that gives direction to the cash market. Finnerty and Park (1987). In this way they act as catalysts to the growth of capital markets.

The other school of thought holds a different opinion regarding the impact of derivatives on the volatility and liquidity of spot markets. They hold that derivatives do not reduce risk; even they expose the users as well as the whole system to new types of risks, the management of which may be more intractable. The existence of derivatives facilitates the speculative waves of buying and selling in the spot market which can cause increase in the volatility of the spot market. Lee and Oak (1992). The availability of derivatives may also cause diversion of speculative traders from the cash market to the derivatives market, thus, causing a decline in the trading volume/liquidity in the cash market. Nathan Associates (1969). Besides, the results of the study undertaken by Agarwal R.M. (1998) come up with the findings, affirming that the level of volatility has shown an increase during the post-derivatives period. Therefore, it is concluded that the argument put forth in favour of derivatives is one-sided, unconvincing and overplayed.

Thus, the two schools of thought are putting forth conflicting opinions about the introduction of derivatives, therefore, it serves as a source of motivation for the researchers to undertake further research in the area of derivatives which will facilitate the existing literature and will develop better understanding about the impact of Derivatives products on Stock Market, Currency Market and Commodity Market.

References

- Aggarwal, R. M. (1988): "Stock Index Volatility and Cash Market Volatility." *Review of Futures Market*, 7:290-299.
- Amihud, Yakov and Haim Mendelsol (1987): "Trading Mechanisms and Stock Returns: An Empirical Investigation." *Journal of Finance*, 42:533-553.
- Anthony, J. (1988): "The Interrelation of Stocks and Futures Market Trading-Volume Data." *Journal of Finance*, 43:949-964.
- Antonios Antonion and Phil Holmes (1995): "Futures Trading Information and Spot Price Volatility: Evidence for the FTSE-100 Stock Index Futures Contracts using GARCH Model." *Journal of Banking and Finance*, 19:117-129.
- Khurshid Ali Ganai (2019), "Correlates of Index Futures and Spot Index Volatility: A Study of Indian Stock Market. *Archives of Business Research*. Vol. 7, Issue 2, PP. 245-252.
- Antonios Antoniou, Gioia Pescetto and Antonis Violaris (2003): "Modelling International Price Relationship and Inter dependencies Between the Stock Index and Stock Index Futures Markets of three European Union Countries: A Multivariate Analysis." *Journal of Business Finance & Accounting*, 30:645-668.
- Khurshid Ali Ganai (2020), "An Analysis of Relationship between Stock Futures and Underlying Stock Volatility." *Archives of Business Research*. Vol. 8, Issue 2, PP. 51-64.
- Bacha, O. and Villa, A. F. (1994): "Futures Market, Regulations and Volatility: The Case of the NIKKEI Stock Index and Futures Market." *Futures Market Journal*, 2:201-225.
- Bansal, V. K; Pruitt S. W. and Wei, K. C. J. (1989): "An Empirical Re-Examination of the Impact of CBOE Options Introduction on the Volatility and Trading Volume of the Underlying Equities." *Financial Review*, 24:19-29.

- Bauldof Brad and Santoni, G. J. (1991): "Spot Price Volatility: Some Evidence from an ARCH Model." *Journal of Futures Markets*, 11(2):191-200.
- Khurshid Ali Ganai (2021), "Spillover Effects of Stock Options Trading on the Volatility of Underlying Stocks." *Archives of Business Research*. Vol. 9, Issue 5, PP. 47 – 58.
- Bechetti S. and Robert D.J. (1999): "Will Increased Regulations of Stock Index Futures Reduced Stock Market Volatility?" *Federal Reserve Bank of Kansas City Economics Review*, pp. 33-46.
- Benilde Maria Do Nascimento Oliveira and Manual Jose Da Rocha Armada (2001): "The Impact of Futures Markets's Introduction of the Conditional Volatility of the Portugeese Stock Market." *Finance India*, 4:1251-1278.
- Bessembiber, H. and Segian, P. J. (1992); "Futures Trading Activity and Spot Price Volatility." *Journal of Finance*, 47:2015-2034.
- Brenner M., Subrahmanyam M. and Uno Jo (1989): "The Behaviour of Prices in the Nikkei Spot and Futures Market." *Journal of Financial Economics*, 23:363-383.
- Brorsen, B. Wade (1991): "Futures Trading Transaction Costs and Stock Market Volatility." *Journal of Futures Market*, 11(2):153-163.
- Butterworth, D. (1998): "The Impact of Futures Trading on the Underlying Stock Index Volatility." *The Case of the FTSE Mid 250 Contracts*, Department of Economics, University of Philephedopia.
- Canord, J. (1989): "The Effect of Options Introduction." *Journal of Finance*, 44(2):487-498.
- Cao, H. Henry (1999): "The Effects of Derivatives Assets on Information Acquisition and Price Behaviour in a Rational Expectation Equilibrium." *Review of Financial Studies*. 12:1341-1363.
- Chatrath Arjun; Ramchander Sanjay and Sang Frank (1998): "The Role of Futures Trading Activity in Exchange Volatility." *Journal of Futures Market*, 05:561-584.
- Chin Kalok, Chan, K. C. and Karolyi, G. A. (1991): "Intraday Volatility in the Stock Market and Stock Index Futures Market." *Review of Financial Studies*, 4(4):637-684.
- Cox, C. (1996): "Futures Trading and Market Information." *Journal of Political Economy*, 48:1215-1237.
- Damodaran, Aswath and Joseph Lim (1991): "The Effects of Options Listing on the Underlying Stock Returns Process." *Journal of Banking and Finance*, 05:647-664.
- Darret et. al. (1994): "Has Futures Trading Activity Caused Stock Price Volatility? *Journal of Futures Market*, 5:537-557.
- Khurshid Ali Ganai and Ahmad Hayek (2020), "Impact of Stock Futures Trading on the Liquidity of Underlying Assets." *International Journal of Scientific and Teaching Research*. Vol. 9, Issue 4, PP. 3383-3388.
- Detemple, Jerome and Philippe Jorion, (1990); "Options Listing and Stock Returns-An Empirical Analysis." *Journal of Banking and Finance*, 14:781-807.
- Edwards, F. R. (1988): "Does Futures Trading Increase Stock Market Volatility." *Financial Analysis Journal*, 44:63-69.
- Elfakhani Said and Mohammad Chudhury (1995) "The Volatility Effects of Options Listing." *Some Canadian Evidence*, *Quarterly Review of Economics and Finance*, 35:97-116.
- Eric, C. Chang; Joseph, W. Chang and J. Michael Pinegar (1999): "Does Futures Trading Increase Stock Market Volatility?" *The Case of NIKKEI Stock Index Futures Market*, *Journal of Banking & Finance*, 23:727-753.
- Fleming, J., Ostdiek, B. and Whaley (1996): "Trading Costs and Relative Rates of Price Discovery in Stock, Futures and Options Markets". *Journal of Futures Markets*, 353-387.
- Golaka, C. Nath (2006): *Behaviour of Stock Market Volatility after Derivatives*. (www.nseindia.com)
- Gorton, G., and Pennacchi, G. (1991): "Security Basket and Index Linked Securities." Working Parper, Philadelphia: University of Pennsylvania, Whortan School.
- Grossman, S. and Miller, M. (1998): "Liquidity and Market Structure." *Journal of Finance*, 43(3):617-633.
- Khurshid Ali Ganai, Irshad Ahmad Malik and Khalid Ashraf Chisti (2020), "Volatility Effects of Index Options Trading on the Underlying Spot Index." Vol. 9, Issue 3, PP. 174-178.
- Hamill Philip A. Kwaku, K. Opong and Pat McGregor, (2002): "Equity Options Listing in The United Kingdoms: A Comparison of Market-based Research Methodologies." *Journal of Empirical Finance*, 9:91-108.
- Hang Chai and Subrahmanyam, A. (1994): "The Effects of Index Futures on the Underlying Stock Market." *The Journal of Futures Market*, 14:293-322.
- Khursheed Ali, Khalid Ashraf Chisti and Mohi-ud-din Sangmi (2013), "Derivatives Trading in Emerging Economies with Special Reference to India." Vol. 3, Issue 1, PP. 5-20.
- Harris, L. M., (1989): "S&P 500 Cash Stocks Price Volatility." *Journal of Finance*, 44:1155-1175.
- Harry, C. and R. Wholey (1992): "Market Volatility Prediction and the Efficiency of the S&P 100 Index Options Market." *Journal of Financial Economics*, 31:43-74.
- Hayes Samuel, L. and Michael, E. Tannenbaun (1979): "The Impact of Listing Options on Underlying Shares." *The Journal of Financial Management*, (Winter), pp. 72-78.
- Hemler, M.L. and F.A. Longstaff (1991): *General Equilibrium Stock Index Futures Price. Theory and Empirical Evidence*. *Journal of Financial and Quantitative Analysis*, 26:287-308.

- Herbst Anthony; John McCormick and E. West, (1997): "Investigation of Lead-Lag Relationship Between the Spot Indices and Their Futures Contracts." *Journal of Futures Markets*, 7:373-382.
- Hodgson Allan and Nicholls Des (1991): "The Impact of Index Futures on Australian Share-Market Volatility." *Journal of Business Finance and Accounting*, 18(2):267-280.
- Hogan Kedreth; C. J. Kroner; Kenneth F. and Sultan Jahangir, (1987): "Program Trading, Non-program Trading and Market Volatility." *Journal of Futures Markets*, 17(07):733-756.
- Irag, G. Kawaller; Paul, D. Koch and Timothy, W. Koch (1990): "Intraday Relationship between Volatility in S&P 500 Futures Prices and Volatility in the S&P 500 Index." *Journal of Banking and Finance*, 14:373-397.
- James, T. W. (1993): "How Price Discovery by Futures Impact the Cash Market." *The Journal of Futures Market*, pp. 469-496.
- Jangkoo Kang, Chang Joo Lee and Soonhee Lee (2006): "An Empirical Investigation of the Lead-Lag Relationship of Returns and Volatilities among the KOSPI-200 Spot, Futures and Options Markets and their Explanations. *Journal of Emerging Market Finance*.Vol.5(3).
- John Board; Gleb Sandmann and Charles Sutcliffe (2001): "The Effects of Futures Markets Volume on the Spot Market Volatility." *Journal of Business Finance and Accounting*, 28(7&8): Sep/Oct.
- Kalak Chan et. al. (1991): "Intraday Volatility in Stock Index and Stock Index Futures Markets." *Review of Financial Studies*, 4(4):657-684.
- Kamara, A., Miller Junior, T.W. and Segel, A.F. (1992): "Effects of Futures Trading on the Stability of Index S&P 500 Returns." *Journal of Futures Market*, 12:645-658.
- Kawaller Ira, Paol Koch and Temiothy Koch (1987): "The Temporal Price Relationship between S&P 500 Futures and S&P 500 Spot Index." *Journal of Finance*, 42:1309-1329.
- Kumar Raman; Atulya Sarin and Kuldeep Shastri (1998): "The Impact of Options Trading on the Market Quality of the Underlying Security: An Empirical Analysis." *Journal of Finance*, 53:717-732.
- Lee Sang Bin and Ohk Ki Yod (1992): "Relationship between Stock Index Futures Listing and Structural Changes in Time-Varying." *Journal of Futures Market*, 12 (05):493-509.
- M, Thenmozhi (2002): *Futures Trading, Information and Spot Price Volatility of NSE-50 Index Futures Contracts*. www.nseindia.com.
- Ma, C. K. and R. P. Rao (1986): "Information asymmetry and Options Trading." *The Financial Review*, 23:39-51.
- Maberly Edwin, D; Davis, S. Gilberth and Roy, F. (1989): "Stock Index Futures and Cash Market Volatility." *Financial Analysts Journal*, 45(6):75-85.
- Mark Fedenia and Theoharry Grammatikos (1992): "Options Trading and Bid-Ask Spread of the Underlying Stocks." *Journal of Business*, 65(30).
- Mekenzie Michael D., Brailsford, T.J. and Robert, W. Faff (2001): "New Insights into the Impact of the Introduction of Futures Trading on Stock Price Volatility." *Journal of Futures Market*, 21(3):237-255.
- Merrick John (1987): "Volume Determination in Stock and Stock Index Futures Markets: An Analysis of Arbitrage and Volatility Effects" Working Paper No. 87-92 Jan. Federal Reserve Bank Philadelphia, pp. 1-29.
- Min, J.H. and Najand, M. (1999): "A Further Investigation of the Lead-Lag Relationship between the Spot Market and Stock Index Futures: Early Evidence from Korea." *Journal of Futures Markets*, 19(2):217-232.
- Modest David and Mahadevan Sundaresan (1993): "The Relationship between Spot and Futures Prices in Stock Index Futures Market: Some Preliminary Evidence. *The Journal of Futures Market*, 3:15-41.
- Nabar, P. and Park, S. (1988): "Options Trading and Stock Price Volatility: Working Paper." New York: New York University.
- Narasimhan Jegadeesh and Avanidhar Subrahanyam (1993): "Liquidity Effects of the Introduction of S&P 500 Index Futures Contracts on the Underlying Stocks." *Journal of Business*, 66: pp.171-187.
- Nicolas, P. Bollen (1998): "A Note on the Impact of Options on Stock Return Volatility." *Journal of Banking and Finance*. 22:1181-1191.
- Premalata Shenbagaraman (2004): *Does Futures and Options Trading Increase Stock Market Volatility?* (www.nseindia.com)
- Sahlstorm, Petri, (2001): "Impact of Options Listing on the Risk and Returns Characteristics in Finland, *International Review of Financial Analysis*, 10: 19-36.
- Simpson, W.G. and T.C. Ireland (1992): "The Effect of Futures Trading on the Price Volatility of GNMA Securities". *Journal of Futures Market*, 2:357-366.
- Skinner Douglas, J. (1989): "Options Markets and Stock Return Volatility" *Journal of Financial Economics*, 23:61-87.
- Stephan, Jens A. and Robert, E. Whaley (1990): "Intraday Price Changes and Trading Volume Relationship in the Stock and Stock Options Markets". *Journal of Finance*, 45:191-220.
- Stoll, Hans and Robert Whaley (1988): *Expiration Day Effects of Index Options and Futures*, Working Paper, Vanderbilt University.
- Takato Hiraki; Edwin Marherly and Nohaya Takezawa, (1995): "Relationship Between NIKKEI Index Futures and Overnight Spot Returns." *Journal of Futures Market*, 4:212-234.

Whiteside Mary, M; William, P. Dukes and Patrick, M. Donne (1983): "Short Term Impact of Options Trading on the Underlying Securities." *Journal of Financial Research*, 4-6:313-321.

The Investigation and Development of Dong Small Song in Education in Rongjiang County, Guizhou Province, China

Shiqi Ping¹, Sayam Chuangprakhon²

¹ Ph.D. Student, College of Music, Mahasarakham University

² Asst., Prof., College of Music, Mahasarakham University

Correspondence: Sayam Chuangprakhon, College of Music, Mahasarakham University, Kantharawichai, Maha-Sarakham, 44150, Thailand. E-mail: sayam.c@msu.ac.th

Abstract

This study uses the qualitative research method to interview key informants in the field and collect a large amount of data, which is then sorted and analyzed. The objective were to: 1) investigate the status of Dong Small Songs. 2) Examine the development of Dong Small songs in educational institutions. There are 2 key informants. The research process includes literature research, field investigation methods, observation methods, interview methods, and a questionnaire method. The study's results are as follows: 1) The Dong ethnicity has a separate language; most of its cultural transmission relies on its big and small songs, which develop and transmit culture. Dong small songs relate to historical events, cultural transmission, character formation, work skill training, and other topics. The Dong people preserve their tradition through Girl's Day, March 3rd, the Bullfighting Festival, and other festivals' dances and music. 2) The Dong people have developed with the times. The transmission of song implementation has expanded to educational institutions. Education has been another important technique for passing along the Dong minority song. Local Dong folk songs have also attracted people from all around the world to appreciate or study them.

Keywords: Investigation, Dong Small Song, Dong Folk Song, Rongjiang County, Development, China

1. Introduction

Throughout the long history of China's development, we will find that there are many ethnic groups within China's geographical scope (Avis, et al., 2001; Che, et al., 2022). After thousands of years of development, their cultural heritage is very rich. Each ethnic group has its own unique culture and customs. in splendor. In the big family of China, the Dong ethnicity, with a population of nearly three million, can be regarded as an ancient and mysterious, industrious, and wise, singing and dancing nation. In the process of living and reproducing, expressing feelings with songs and dance, feeling, and enjoying a happy life, and forming a unique, different style of beautiful and moving national music culture, I become a bright pearl in my country's national music culture. As early as more than 2,000 years ago, the ancestors of the Dong ethnicity set up camps and recuperated in Guizhou, Hunan, and Guangxi. Today, Guizhou has become the largest inhabited area of the Dong ethnicity in the country. The Dong

ethnicity is the most populous minority in Guizhou, and its splendid and colorful Dong music culture can be regarded as a beautiful landscape (Lomax, 1959; Jin, 2011; Xinjie, 2014).

The Dong ethnicity is a nation without words and songs (Ingram & Wu 2017; Song & Yuan, 2021). Singing plays an important role in their social lives. Since the Spring and Autumn Period and the Warring States Period, Dong folk song has been passed down by word of mouth for more than 2,500 years and is still well preserved. The Dong people have lived in a simple and peaceful environment for generations. In their life practice, they have created a unique folk culture with their hard-working and kind-hearted characters, which occupy an important position in the cultural tradition of the Chinese nation. The Dong people have very famous big songs as well as small songs in folk life. The local language is called "gala," and there are many folk songs and sacrificial songs (Xia, 2015; Cui, 2015).

Dong Song is a beautiful flower in the Dong ethnic group. It is well known and popular. In comparison to the world-famous Dong folk songs, the Dong folk songs are strongly tied to daily life and are adored by the Dong ethnic group's youth (Mackerras, 1984; Wei, 2020; Dinh, et al., 2021; Yan & Dapradit, 2022). Although the Dong ethnicity's folk songs are not as well-known as the Dong ethnicity's big songs, they represent an important element of the Dong ethnicity's songs (Campbell, 1995; Van Dao, 2019; Liu, 2021; Liu, 2022). They are mostly used in young people's love stories or at the end of marriages. They can be used to express the feelings of lovers. It is built on strong emotions, which can create an emotionally charged atmosphere; the singing is singing, and friendship and family are calling. At the same time, this style of song is vital and important in the Dong people's lives. It blends the people's specific living habits, demonstrates the most primitive national culture, and portrays the minority's joyful and tranquil living environment. a type of display (Fanghua, 2005).

The Dong people have created a unique national culture with strong local color. Dong folk song is a wonderful flower in the national culture (Li, 2022). Under the impact and influence of social and economic development, the inheritance and protection of Dong folk song are facing severe challenges and need more attention and support. The Dong ethnicity is a nation with a long history and unique culture. It is famous at home and abroad for its Drum Tower, Huaqiao, and Dong songs. All guests who have been to Dong Township are attracted by its magical landscape, simple folk customs, and colorful ethnic culture, and some people get lost in the charm of "Dance Township and Songhai." However, when the tide of economic integration sweeps every corner of the world, Dong Township is no longer a "Xanadu" hidden in the boudoir. Westernization, marketization, and the aggression of consumerism are constantly affecting people's lives, making it difficult for the Dong culture, which is at a disadvantage in social development, to resist. Looking back on the past, some art forms with Dong ethnicity characteristics, like many other excellent minority cultural arts, are facing the fate of extinction and gradually fading out of people's vision. Artists, craftsmen, dancers, singers, musicians, etc., as inheritors of folk culture, grow old one by one. However, the ethnic youth with dry luggage squeezed into the train of economic development in the east, away from their traditional culture. If people don't love their own nation, don't wear their own national costumes, don't speak their own national language, and give up their own national customs and all original ways of life and values, the national culture will lose its foundation. It depends on survival and will inevitably die. In documents such as the Mexico City Declaration on Cultural Policy and the Convention for the Safeguarding of the Intangible Cultural Heritage, UNESCO clearly states that each culture represents a unique and irreplaceable set of values. A cultural policy must be established that preserves, promotes, enriches, and harmonizes the different identities and cultural heritage of nations; neglecting and destroying the culture of any nation is a loss to the whole of humanity. In the process of modernization, some western developed countries pay attention to preserving their own cultural characteristics. It was a valuable experience (Shim, 2006; Yang & Welch, 2014; Jin & Ibrahim, 2022).

Today, in most areas of the Dong ethnic group, the custom of singing Dong songs, like the blue sky above the gray sky, has gradually faded away. This is both a sad and deplorable objective reality and a poor and deplorable cultural phenomenon. Today, when technology can change and create people's hearts, it is truly omnipotent. If so, how should we rescue and protect minority music cultures? This is not only a historical topic but also the focus of current academic attention. Based on the foregoing, the author hopes to draw more people's attention to the Dong ethnicity and music culture of the Dong ethnicity through research on the current state of survival of the Dong

ethnicity's folk songs in Rongjiang County, Guizhou, changes in their contemporary status, and methods of education and dissemination.

2. Method

The research methods of this article are as follows: 1) Documentary data method: through collecting, sorting out, and identifying existing documents and forming a scientific method of understanding by studying these data. The materials involved in this article mainly include documents about the music culture of the Dong people, and materials about Dong small song of the Dong people. 2) Field investigation method: Field investigation is the basic method to obtain first-hand information. The author obtained some information related to Dong small song of the Dong ethnicity through on-the-spot investigation of the survey area. 3) Qualitative research method: Explain the collected data (Oun & Bach, 2014).

2.1 Research site

Rongjiang County, Guizhou Province, China. Rongjiang County is under the Miao and Dong Autonomous Prefecture of Qiandongnan, Guizhou Province. It is located in the southeast of Guizhou Province, south of Qiandongnan Miao and Dong Autonomous Prefecture. It borders Liping County and Congjiang County in the east, Leishan County and Sandu Shui Autonomous County in the west, Jianhe County in the north, and Libo County in the south, with a total area of 3315.8 square kilometers .



Figure 1: Map of Rongjiang County, Guizhou Province, China.

Source: Haijing Sung, et al. (2016)

2.2 Key informants

The criteria for selecting a key informant are:

- 1) The person of a native who lived and grew up in a Dong village.
- 2) The person of know and be familiar with Dong songs and performance forms
- 3) The person of representative inheritors of intangible cultural heritage
- 4) The person is older, with many years of experience in performance and organization, and some local researchers.

2.2.1 Ms. Yang Yueyan, Dong ethnicity, is the representative inheritor of the national intangible cultural heritage of the pipa song of the Dong ethnicity. Yang Yueyan has learned Dong Pipa songs since childhood and can sing more than a thousand Dong Pipa songs skillfully. He has long served as a Dong Pipa song tutor in primary and secondary schools and cultivated Dong Pipa song performers. In December 2017, he was selected for the fifth batch of the recommended list of representative inheritors of national intangible cultural heritage representative projects. On May 8, 2018, he was selected as the representative inheritor of the fifth batch of national intangible cultural heritage representative projects.



Figure 2: Ms. Yang Yueyan

Source: Ping Shiqi, (2022)

2.2.2 Mr. Luo Xingli, A native of Rongjiang County, Guizhou Province, the inheritor of the Dong ethnicity corbel qin song, and a song teacher.



Figure 3: Mr. Luo Xingli

Source: Ping Shiqi, (2022)

2.3 Data collection

Researchers will collect data through literature analysis and fieldwork. To investigate further, the researchers looked at documents from libraries and cultural centers. The researchers will also go to the research site (Rongjiang County, Guizhou Province) for a field trip. Record the performance process through interviews, observations, audio and video recordings, and collecting on-site information.

2.4 Data analysis

The researcher uses concepts and theories to analyze the collected data according to the defined goals and terms. For the first goal, the researchers will conduct quantitative research methods and fieldwork data collection, and we will use field observations to conduct surveys in Rongjiang County, Guizhou, interviewing my main informants to gain experience and relevant information. The second goal is to sort out and analyze the collected past Dong folk songs and contemporary new Dong folk songs in Rongjiang County, Guizhou, explaining the structure, melody, harmony, and performance characteristics. The third objective was to collect and organize data through literature analysis. Combined with local cultural and educational institutions, inheritance and protection, tourism development, and related policy requirements, carry out research on the inheritance and development of Dong folk songs.

3. Results

3.1 *The status of Dong small song in Rongjiang County, Guizhou Province, China*

The Dong ethnicity does not have an independent language, and the majority of its cultural distribution is based on the Dong ethnicity's big songs and minor songs, that is, music, which promotes cultural development and inheritance. We can see and feel from Dong survey data that a variety of survival difficulties, such as their historical activities, cultural transfer, character forming, labor skills training, and so on, can be understood by Dong music and conveyed through numerous dances. For example, the Dong people will use Girl's Day, March 3rd, the Bullfighting Festival, and other festivals to pass on their culture from generation to generation through dances and songs. Family learning is a crucial part of the process of learning Dong songs, and it also provides a nice environment for singing. There is a saying among the Dong people that local children can sing even if they do not know the language. When Dong children are young, their parents normally do not speak to them but instead sing to them. Singing allows parents to communicate with and teach their children. In a household setting, parents will sing nursery rhymes, but in a workplace setting, parents will sing folk songs. These songs can help children learn new things while also understanding the diverse things that present in everyday life. Philosophy and knowledge. Children can learn several songs gradually throughout their lives, and as they develop, they will also convert into singers who can effortlessly sing Dong songs. We can imagine that during the long-term development of the Dong ethnicity, the content involved in music can frequently show people's production and living conditions, such as leisure or labor, daily life or major celebrations, so traditional Dong music plays an inestimable role in the spread and inheritance of Dong culture. Self-media and new media, on the other hand, have played a key part in media inheritance and distribution. This is owing to the new media team's focus on local culture, particularly village traditions. Among these, Mr. Wang of Longzaidang Dong Village's transmission and growth of the Dong ethnicity's river song tradition deserves to be documented. At the moment, a number of self-media channels have been established to promote Zaidang River songs and their "intangible cultural heritage" lineage. The use of cultural resources such as traditional outstanding culture in conjunction with current creative means and expressive techniques allows the tradition to be creatively modified and developed, allowing it to be more incorporated into modern life.

The vocalists have a rather strong "singer spirit" as they continue to inherit and develop Dong songs. In my country, they are not only the inheritors of traditional Dong songs, but also the best interpreters of Dong music. These people have a special place in the hearts of the locals. It has a very high reputation, so it can better enable singers to persevere and carry along the "singer spirit," as well as motivate them to teach others the singing methods and abilities of Dong songs for free. The most important mode of inheritance in the teaching class of Dong folk songs is the transfer of the singing master to his followers, which is commonly referred to as "song class inheritance."

1) Communicator and singer. Singers are also known as "Sangga" (Dong language), and they frequently have multiple identities. They are linguists as well as musicians. They frequently have a thorough awareness of their own country's historical evolution, traditional practices, and ceremonial culture. 2008 (Bai Gengsheng) They are all Dong people's representations of wisdom, with outstanding talent, knowledge, and education, and will be loved by the entire people. The vocalists are often over 40 years old, according to residents. They are all great vocalists chosen by the previous performers. We know from research and interviews that to become a singer, you must have at least four criteria: Initial and first, you must have a decent voice, which is the first requirement for becoming an exceptional singer. The Dong ethnicity is a nation without language in terms of common people's recall ability. All the Dong minority songs' lyrics and melody are passed down from generation to generation, relying on the singer's memory. They cannot be competent singers if they do not have a good memory. Improvised creation ability: singers frequently sing in various folk activities and antiphonal scenes; dexterous adaptability, which is also an important condition for becoming an excellent singer; and fourth, you must have excellent character and be interested in the inheritance and development of Dong folk songs. Teaching songs to Dong singers is a form of voluntary behavior with no set payment. As a result, as a Dong singer, you must be selfless in your passion.

2) Singing Class Passees. Song troupes are also known as "Gaoga," which refers to singing groups organized inside a community or clan. When there is a singing competition in everyday life, the singing troupe is frequently used as a unit. Following an on-the-spot assessment, the singing groups have been split into the five categories listed below, based on age and specialized responsibilities:

Table 1: Classification of Singing Class

Class	Age	Assignment
Child	6-11	Learning phase
Juvenile	12-16	Can participate some activities
Youth	17-20	Majoy in singing activities
Adult	20-30	Alternate
Middle Age	Over 30	Participate less in public events

3.2 *The development of Dong small songs in educational institutions in Rongjiang County, Guizhou Province, China*

3.2.1 The traditional method of teaching Dong Small Songs

Using Zaidang Village in Rongjiang County as an example— Children in Zaidang Village have grown up in the singing environment of Dong Township. The first musical lessons were learned through "listening" rather than "singing." When did the village youngsters begin to learn to sing? "It probably originated in their mothers' wombs!" the inhabitants of Zaidang Village informed the author. I've been listening for perhaps seven or eight years. In Zaidang Community, there are three main ways to acquire traditional folk children's songs: parent-child inheritance within the family, master-student inheritance within the singing troupe, and collective inheritance among the village. Following that, the author mostly recounts the master-student inheritance in this area's singing ensemble.

1) Dong Small Songs' Inheritance Basis Singer's Request, when it comes to the traditional teaching methods utilized in the Dong ethnicity's tiny songs in Zaidang Village, we must discuss the vocalists. Singing is as important in the Dong area as dressing and eating. The singer is the primary figure in charge of cultural legacy. A Dong ethnicity song goes something like this:

- 1.1) Which of the twelve types of flowers has the most vibrant red color?
- 1.2) Which of the twelve tree types is the most beneficial?
- 1.3) Which of the following twelve types of bones is the heaviest?
- 1.4) Who is the most well-known and respected of the twelve masters?
- 1.5) The camellia is the most brilliant red of the twelve types of flowers.
- 1.6) Fir trees are the most helpful of the twelve types of trees.
- 1.7) The keel is the heaviest of the twelve types of bones.
- 1.8) The twelve categories of master vocalists are the most well-known and recognized.

3.2.2 Dong's organizational form of application Song class—small songs

At the age of six or seven, children in Zaidang Village typically begin learning songs from the singer's home and form a children's song class. The songs kids learn have a simple structure, short lyrics, a cheery rhythm, and are full of innocent enjoyment. Zaidang Village's traditional children's songs the class formation theory states that youngsters from the same village establish singing groups based on gender and age. The average number of singing groups is 8-12. The age difference is usually about 2-3 years. The laws of class division, according to the village elders, have been passed down from generation to generation. Children of the same age in the same community grow up together, sharing interests and understanding skills. As a result, the singer can teach the same level of songs while teaching singing, and the children's timbre will be more harmonious and unified in terms of voice growth. Naturally, the material varies. After supper, youngsters in Zaidang Village traditionally go to the singer's house to study. The busy farming season is directly tied to the period for learning songs. If you have the time, you can learn more; if you don't, you can learn less. The song troupe is a spontaneous formation in the Zaidang community. Local children will create lifelong friends while studying with the musical ensemble. The youngsters will learn how to get along with one another while they are learning. It has an indelible impact on the village's unity.

3.2.3 Dong Small song application teaching form

The "Gaowuga" ("teaching songs" in Chinese) of Dong folk songs is done in two steps in Zaidang Village: the first step is called "Duoli" ("read or read lyrics" in Chinese), and the second step is called "Dawusuo" (teaching singing) or "Duosuo" (teaching singing) (Chinese "singing singing"). Because the lyrics of Dong folk songs are so simple, the singers nonetheless emphasize "getting to know the place" or "many songs" throughout the teaching and singing process. During the field inquiry, the author noticed that when the singers taught Dong folk songs, there was little theoretical analysis and little use of teaching resources like textbooks and blackboards. The kids sat in a circle around the fire pit and began studying. Singing instruction is typically broken into the following steps: To begin, teach the lyrics. The vocalist reads a sentence, then the students read a sentence. If they come across something that the children might not understand, the singer will stop and explain, and after reading all of the lyrics, he will explain to the children in a simpler way. Let us explain the meaning of this small song until all of the students have properly learned the lyrics. Then, after everyone has sang the song properly, choose one or two students with good vocal conditions to teach the bass section. Learn to sing the high voice part and show them how to coordinate the low voice part and the high voice part; ultimately, the high voice part and the low voice part should follow the principle of "meix yil seit, seit yil meix," which means "meix yil meix, seit yil meix." That example, the high-pitched component should regulate its own pitch without going too far, and the low-pitched half should manage the volume without suppressing the high-pitched part. Children will quickly learn the Little Dong Song because of such a thorough procedure. Zaidang Village has three main criteria for judging the quality of singing: "SUO SONG LAO" (soh songl laos), which means seeing the harmony and fusion of voices; "DA GA" (dags gal), which means whether the words are euphemistic, soft, and not stiff; and "AN SUO" (ebs suohbaenv suh), which means whether to sing and vocalize with heart and emotion. The Dong people's music culture in Zaidang Village has been passed down from generation to generation by oral transmission.

Many music teachers in elementary and middle school schools in China clearly lack command of traditional folk music in music instruction and singing in primary and secondary schools, as well as the ability to teach "mother tongue" music. Many music educators believe that folk music is inferior to current and popular music. They say folk music is not sophisticated enough, lack appreciation for it, and disregard its educational worth. This has a devastating effect on the development of folk music and fully contradicts the notion of supporting national culture. Educational philosophy: as music educators, we must recognize that we have enough excitement for traditional Chinese music culture to pique students' interest in traditional Chinese songs.

This study's summary: Dong Small songs emerged in a relatively stable context, and they perfectly integrated Dong nationalist philosophy with Chinese customs and etiquette. Dong Small songs' constant proliferation throughout history supports national culture and conveys a strong sense of national identity. Small songs have also changed from traditional interpersonal transmission to new media transmission and educational institution transmission. However, modern society's advanced thinking mode and the rise of the information business have rendered national culture less basic. Modernization has had a significant impact on it, and it is gradually changing. A nation's prosperity is inextricably linked to that nation. Any nation is a member of the Chinese nation's large family. Any nation in the process of modernization cannot be abandoned. Its impact will spread throughout the country and into every home. It has an impact on the village's calm life.

4. Discussion

1) The development of Dong folk song music is inextricably linked to the Dong people's social development. The Dong people are a country without writing, and the Dong language is not understood by the rest of the world. Some academics hope that the singing of Dong folk song will be recorded in Mandarin. Dong Xiaoge, in my opinion, is a type of local folk song that depicts the Dong ethnicity's distinctive culture. When sung in Mandarin, it is no different from other songs, but it lacks the charm of Dong folk tunes.

2) Some academicians argue that students should not be exposed to Dong traditional tunes. Some scholars argue that Dong folk songs cannot be taught in schools because they depict courtship life and are inappropriate for students to learn and sing (Wu, 2012). However, I discovered in my fieldwork that many Dong students or students from other ethnic groups wish to acquire the charm of Dong songs, but there are few options for such learning. So,

the researcher believes that allowing Dong folk song into educational institutions is an essential approach to disseminate Dong culture (Du & Leung, 2022).

3) Protecting traditional music requires change. We must evolve our mindset and conserve traditional music. We must also apply new facts-based problems and concepts. Accepting new things requires attention to cultural inheritance. We'll examine ways to preserve and grow national culture to understand national music's development. Dong Small songs:

3.1) Dong folk song reflects their culture. Foreigners may not understand the initial characters and tones. Thus, songs must be rearranged to be understood by diverse nations.

3.2) Dong festivities are distinctive. These festivities are vestiges of the nation's history and the source of Dong folk tunes. Thus, local governments must support these festivities. We must provide places, funding, and employees to propagate local folk culture and improve Dong Xiaoge's development environment.

3.3) Cultural interactions and integration should be intensified nationwide, not just in Dong. Dong folk songs can be sung in different regions to promote ethnic togetherness, understanding, and progress. The younger generation may enjoy national songs, history, and culture through mutual learning and conversation.

3.4) Include Dong folk tunes in curriculum and pass them down. Spiritual civilization requires education to improve the Dong people. We should learn our country's music and include western music education into our music education. To create a talent pool for the local ethnic group, local schools must cultivate the language, writing, and culture of the ethnic group in elementary, middle, and high school.

3.5) Intensify tourist development, fiercely promote Dong folk songs, and develop tourism resources based on the songs and local customs so that tourism may drive ethnic region wealth. Tourism has developed in today's fast-growing economy. Chinese tourism promotes local traditional culture. Thus, the Dong folk song teaches travelers about local geography, customs, and lifestyle.

3.6) Enhance management and assess protection. To achieve comprehensiveness in folk song inheritance, we should use system theory to create more precise inheritance plans and techniques for diverse contents.

Acknowledgments

This research project was financially supported by Mahasarakham University.

References

- Avis, N. E., Stellato, R., Crawford, S., Bromberger, J., Ganz, P., Cain, V., & Kagawa-Singer, M. (2001). Is there a menopausal syndrome? Menopausal status and symptoms across racial/ethnic groups. *Social science & medicine*, 52(3), 345-356.
- Campbell, P. S. (1995). Bell Yung on Music of China: As part of the "Music in Cultural Context" series, this interview with Bell Yung focuses on the music of China. *Music Educators Journal*, 81(5), 39-46.
- Che, F., Zhou, Y., & Liu, Y. (2022). Social quality, knowledge hiding, and community capacity: a study on multi-ethnic communities in Chinese cities. *Journal of Business Research*, 144, 1024-1038. <https://doi.org/10.1016/j.jbusres.2022.02.041>.
- Cui, L. (2015). Audience Power in the Production of Talent-Show Stars: China as an Example. *Sociology*, 5(5), 391-402.
- Dinh, L. N., Minh, H. N., Khac, D. L., & Van, S. Q. (2021). Folk music in the cultural and religious life of Katu ethnic group in Thua Thien Hue province, Vietnam: A functionalist approach. In *AIP Conference Proceedings* (Vol. 2406, No. 1, p. 030021). AIP Publishing LLC.
- Du, J., & Leung, B. W. (2022). The sustainability of multicultural music education in Guizhou Province, China. *International Journal of Music Education*, 40(1), 131-148.
- Fanghua, N. (2005). Xiaohuangzhai's songs and marriage customs. *Chinese music*, (07), 126-131
- Ingram, C., & Wu, J. (2017). Research, cultural heritage, and ethnic identity: evaluating the influence of Kam big song research of the 1950s. *Asian ethnology*, 76(1), 65-93.
- Jin, J. (2011). *Chinese music*. Cambridge University Press.
- Jin, M., & Ibrahim, F. (2022). Influence of Digital Media on Guangxi Dong Ethnic Cultural Heritage. *Insight-Information*, 4(1), 10-15.
- Liu, H., Jiang, K., Gamboa, H., Xue, T., & Schultz, T. (2022). Bell Shape Embodying Zhongyong: The Pitch Histogram of Traditional Chinese Anhemitonic Pentatonic Folk Songs. *Applied Sciences*, 12(16), 8343.
- Liu, Q. (2021). Cultural exploitation in Chinese politics: Reinterpreting Liu Sanjie. *Prometheus*, 37(2), 111-136.

- Lomax, A. (1959). Folk song style. *American Anthropologist*, 61(6), 927-954.
- Mackerras, C. (1984). Folksongs and dances of China's minority nationalities: policy, tradition, and professionalization. *Modern China*, 10(2), 187-226.
- Oun, M. A., & Bach, C. (2014). Qualitative research method summary. *Qualitative Research*, 1(5), 252-258.
- Renli Li. (2022). Chinese folk music: Study and dissemination through online learning courses. *Educ Inf Technol* 27, 8997–9013. <https://doi.org/10.1007/s10639-022-11003-w>.
- Shim, D. (2006). Hybridity and the rise of Korean popular culture in Asia. *Media, culture & society*, 28(1), 25-44.
- Song, Y., & Yuan, M. (2021). Tourism and its impact on Dong traditional music and life in Xiaohuang. *Journal of Tourism and Cultural Change*, 19(2), 200-215.
- Sun, H., Babcock, L. E., Peng, J. & Kastigar, J. M. (2016) Systematics and palaeobiology of some Cambrian hyoliths from Guizhou, China, and Nevada, USA, Alcheringa. *An Australasian Journal of Palaeontology*, 41(1), 79-100. <https://doi.org/10.1080/03115518.2016.1184426>.
- Van Dao, B. (2019). Impacts of Song Tranh 2 Hydropower Plant Resettlement on Ca Dong Ethnic Group in Bac Tra My District, Quang Nam Province, Vietnam. *Journal of Mekong Societies*, 15(3), 1-26.
- Wei, W. (2020). An Analysis of Educational Functions in Folk Songs of Mulao Nationality. In *4th International Conference on Art Studies: Science, Experience, Education (ICASSE 2020)* (pp. 572-577). Atlantis Press.
- Wu, J. (2012). Governing Suzhi and Curriculum Reform in Rural Ethnic China: Viewpoints From the Miao and Dong Communities in Qiandongnan. *Curriculum Inquiry*, 42(5), 652-681.
- Xia, D. A. N. (2015). On style features, inheritance and development of folk songs in south and north dong minority. *Higher Education of Social Science*, 9(1), 48-51.
- Xinjie, Z. (2014). An analysis of the experience and cognition basis of the original ecological culture of the Dong National Song. *Journal of Luoyang Institute of Technology (social science edition)*, (4), 76-79.
- Yan, X. H., & Dapradit, P. (2022). The dong in mine guidebook by field work at school of music and dance, nanning normal university. *Asia Pacific Journal of Religions and Cultures*, 6(2), 141-163.
- Yang, Y., & Welch, G. (2014). Contemporary challenges in learning and teaching folk music in a higher education context: a case study of Hua'er music. *Music Education Research*, 16(2), 193-219.

Factors Influencing Students' Academic Performance: The Case of Pre-Service Teachers at Dambai College of Education in Ghana

Priscilla Commey-Mintah¹, Antwiwaa Opoku², Saviour Kwadwo Kudjordji³, Frank Awuah⁴

¹ Department of Teacher Education, P. O. Box LG 1181, University of Ghana, Legon, Accra, Ghana

² Department of Science, Accra College of Education, P. O. Box 221, Legon, Accra, Ghana

³ Department of Education Studies, Jasikan College of Education, P. O. Box 14, Oti Region, Ghana

⁴ Department of Social Science, Dambai College of Education, P. O. Box 84, Dambai, Ghana

Correspondence: Frank Awuah. Email: awuahfrank79@gmail.com

Abstract

Academic success is the assessment of a learner's ability in a variety of academic areas. Classroom performance, graduation rates, and standardised test results are commonly used by teachers and education administrators to assess student accomplishment. This study, on the other hand, was conducted to assess the factors influencing students' academic performance at a College of Education in Ghana. The research design employed was the quantitative research method, specifically, a cross-sectional descriptive survey research design. It mainly focused on level 200 pre-service teachers pursuing the B. Ed programme and level 300 pre-service teachers offering the Diploma in Basic Education programme as they are the seniors in their individual programmes. A total of 100 pre-service teachers participated in the study with 51 being females and 49 being males. From the results, some of the factors that influence the pre-service teacher's academic performance were parents, friends, instructors and the use of teaching and learning materials.

Keywords: Academic Performance, Pre-Service Teachers, Colleges of Education, Degree and Diploma Programmes

1. Introduction

Academic performance plays a critical role in creating the greatest graduates who go on to become excellent leaders and employees of the country, as well as being responsible for the country's economic and social development (Norhidayah et al., 2009). In higher education, academic performance has a significant impact on a student's self-esteem, motivation, and perseverance. (Jayanthi et al., 2014). Education does not only focus on skills, abilities, and knowledge among students but also can lead to the overall progress and growth of individuals,

societies, nations, and the world. Someone who is educated is not only seen to be focused, ambitious, and accomplish his goals but also able to serve or contribute positively to the improvement and development of their society or country. This has huge impacts on how they attain knowledge and produce back the knowledge they attained which goes ahead to reflect in their academic performance. A key element in making one an effective student is to develop skills in reflective thinking and practices. Reflective practice helps to reconsider one's actions so as to engage in continuous learning in order to improve practice (Finlay, 2008).

The academic performance of students may likely determine their future goals and objectives. This includes career opportunities they will take up, educational courses they will pursue in university, the university they will apply to, and so on. The academic performance of a student is determined by their performance in test, examinations, assignments, projects, class participation, homework, etc. Schools are developing brilliant ideas to improve the academic performance of students due to pressure coming from parents or guidance to teachers and school administrations. Paterson and Chapman (2013) assert that a person who reflects throughout his or her practice is not simply looking back on previous actions and events, but is consciously looking at emotions, experiences, actions, and responses and using that information to add to his or her existing knowledge bases, reaching a higher level of understanding. Teachers, parents or school counsellors need to find the reason for a child's poor academic performance to make helping them easier. These strategies include the use of technologies in classrooms, rewarding of students, motivating students, extra classes for students after school, weekend classes, and instructional methods. It also includes the implementation of rewards for students on a good performance by teachers motivating the student and even his mates to do better to achieve a reward.

2. Statement of the problem

Schools are established to impart knowledge and skills to those who go through them, thus enhancing their academic performance (Hoyle, 1986). Academic performance or how students satisfy these institutional standards are used to evaluate success in educational institutions. Examinations or continuous assessment are the most common ways to assess academic performance of students in Ghana as grades are considered first when defining academic performance. This usually happens when students are ranked by Grade Point Average (GPA) and awarded special designation to students who graduate with first and second class. It is believed that good academic performance provides more career choices and job security.

However, students in the process of acquiring knowledge and skills from educational institutions face conditions that sometimes influence their academic performance. Poor performance of students in education can adversely affect them (Oladebinu et al., 2018). Students' academic performance is largely influenced by numerous factors both within and outside the school. Some of these conditions may be related to students', parents, school facilities, and the mode of teaching. A study conducted by Ali et al. (2013) revealed that students' academic performance could be influenced by parents' social-economic status, age of students, and daily study hour of students. The passage of Act 847 in 2012 converted Teacher Training Colleges from post-secondary non-tertiary institutions to tertiary institutions and designated as Colleges of Education with a mandate to train teachers for the basic education level. Since the passage of the Act, the college curriculum, mode of teaching and learning, and management practices have changed. This study seeks to explore the factors that are influencing students' academic achievements in colleges of education.

3. Research Question

The research sought to answer the following questions:

1. What are the factors that influence the academic performance of students?
2. What are the differences between degree and diploma pre-service teachers on the factors that influence their academic performance?
3. What are the gender variations in characteristics that influence academic success among students?

4. Literature Review

4.1. Conceptual Framework

4.1.1. The Concept of Academic Performance

According to Narad and Abdullah (2016), Academic performance refers to the knowledge obtained as measured by a teacher's marks or by educational goals set by students and teachers to be met over a period of time. The authors argue that ongoing assessment or examination outcomes are used to measure these aims and objectives. The psychological characteristics of individual students and their immediate psychological settings, according to Walberg's theory of educational accomplishment, influence educational results; cognitive, behavioural, and attitudinal factors all play a role (Reynolds & Walberg, 1992). Walberg identified nine critical elements that influence educational results, including student ability/prior achievement, motivation, and age/development level, as well as the quality of teaching, classroom, home environment, coevals, and outside-of-faculty media exposure (Walberg et al., 1986).

Gqweta (2012) asserts that academic performance is the evaluation of a student's academic achievement in multiple subjects. Classroom performance, graduation rates, and standardized test results are commonly used by teachers and educational administrators to assess achievement. Olajire (2022) also mentioned how one of the major concerns that parents have for their children is low academic performance. This is so because, a child's low educational performance will have negative implications, such as a grim future, youth unemployment, and so on. This is one of the main reasons why most parents engage home tutors for their children.

4.2. Empirical Framework

4.2.1. Motivation of Teachers

According to Cooper (2019), everything you do in the classroom, including your general attitude, has an unparalleled rippling impact as a teacher. Excellent teachers are driven by a desire to help students learn. It does not matter if it is an elementary school class or a college workshop, motivation is essential to a successful classroom. Barberos et al. (2021) indicate that what takes place in the classroom is determined by the teacher's ability to keep pupils' attention. As a result, teachers are crucial in bringing about changes in the classroom. To have motivated students in the classroom, we must first grasp the importance of being motivated in performing our work properly. Learning will be much easier when students are motivated. A successful classroom requires a motivated instructor (Impact Teachers, 2017). They go on to say that motivation aides in energising, directing, and long-term maintenance of positive behaviour.

It is not just about piquing students' interest in studying right now; it's also about cultivating the underlying objectives and aspirations that drive their academic work. Research Clue (2021) stated that teachers should be sufficiently prepared, valued, remunerated, and empowered to participate in choices impacting their professional lives and teaching environments at all levels of the educational system.

4.2.2. Effects of Teachers' Teaching on Students

Careful planning, preparation, and the methods employed in disseminating the content of a course all contribute to successful teaching and learning. Before this can be accomplished, the instructor or tutor must have a thorough understanding of the subject matter as well as numerous teaching strategies (Heggart, 2016). The efficiency of the teaching and learning process is primarily determined by the teacher's technique of instruction. The success of a teaching approach, according to Munawaroh (2017), is mirrored in the teaching-learning processes outputs, such as marks, grades, and average scores. Muwaya (2018) opine that effectiveness of the teacher's technique of instruction plays a big role in the teaching and learning process.

Muzenda (2013) analysed the effects of lecturers' competences on the academic performance of students among higher education and training students in private institutions Gauteng Province, South Africa. Using a descriptive survey and correlational designs, questionnaire was used to collect data from 115 students, comprising of 77.4% females and 22.6% males for purposes of ascertaining the influence of lecturers' distinct teaching dimensions on students' academic performance. The teaching dimensions were teaching skills, subject knowledge, and lecturer attitude and attendance. Based on model 4 stepwise regression analysis, the study found that about 88% of the overall variation in students' academic performance was accounted for by the lecturers' teaching dimensions (Muzenda, 2013). The study further indicated that all the dimensions of lecturer competence had statistically positive impacts on students' academic performance. The study noted that the dimensions that had the highest positive impact on students' academic performance were lecturers teaching skills (39.6%), subject knowledge (30.3%), lecturer attendance (27.7%) and lecturer attitude (16.7%).

Shaari et al. (2014) conducted a study to identify the relationship between lecturers teaching style and students' academic engagement at a University in Malaysia. Through a survey questionnaire the researchers collected data from 266 students. Results of descriptive statistical analysis of the data indicated a significant but moderate relationship between the teaching styles of the lecturers' and the academic engagement of the students.

4.2.3. Teaching and Learning Materials

According to Mosha et al. (2007), all the items that teachers and students do or use to attain certain goals in a classroom scenario, such as maps, models, and boards, are considered teaching and learning resources. Those materials assist pupils in seeing, hearing, smelling, and tasting, allowing them to conceive abstract knowledge, practice skills, and make conclusions from what they are touching. Teaching materials can be auditory, printed in textbooks, or non-printed in the form of physical items. Researchers have assessed the impact of using teaching and learning resources to teach on the academic performance of students. For instance, Edoho et al. (2020) carried out a study to determine the effect of instructional materials on students' academic performance in mathematics in Calabar Local Government Area of Cross State in Nigeria. The sample consisted of 190 students. Results of an independent t-test statistics revealed that teaching with instructional materials has a significant effect on students' academic performance in Mathematics. Stressing on the importance of teaching and learning materials, Olumirin et al. (2010) assert that instructional materials help teachers to teach conveniently and the learners to learn more easily without any problem of understanding.

4.2.4. Parental factors which contribute to academic performance

Studies have shown that parental participation in their children's education has a favourable impact on their children's academic success. McNeal (2014), for example, discovered that parental participation has a direct impact on students' behaviour and attitudes, but has an indirect impact on their academic performance. Chowa et al. (2013) proposed that parental participation in their children's academic success can be divided into two categories: home-based and school-based parental involvement. Their research found a positive association between home-based parental participation and their children's academic achievement, but a negative relationship between school-based parental involvement and academic success. Similarly, Mante et al. (2015) found that parental participation has an impact on their students' academic achievement, however the direction of the impact was not mentioned. Mwirichia (2013) also noted that parental involvement in a student's academic performance takes several forms. He discovered that parents participate in educational activities at school, communicate with their children's teachers, and participate in academic activities at home. The study found that parents' involvement in home academic activities has a direct impact on their children's academic performance; parents' involvement in school academic activities has an indirect impact on academic performance; and parent-school communication does not appear to be a strong predictor of academic performance. Parents should arrange home-school tutorials for their children and establish guidelines to manage their children's study behavior in the house, according to the study. Caro (2011) discovered that contact between parents and schools has a favourable impact on their children's education.

According to Martinez (2015), pupils who have a high level of parental involvement in their academics score much better than students who do not have any parental involvement in English Language Arts and Mathematics. Topor et al. (2010) established a statistically significant link between parental participation and ward academic success using a multiple mediational analysis. Rafiq et al. (2013) found the same results in Pakistan. They underlined the importance of parental involvement in helping students improve their academic performance. Mutodi and Ngirande (2014) discovered that parent-teacher communication, family and home support, as well as parenting, are all associated to academic performance in South Africa. The researchers came to the conclusion that family and home support are the most important predictor of academic performance. Parents' engagement has been shown to have a favourable impact on their children's academic achievement. Naite (2021) explored the impact of parental involvement on the academic achievement of students at Crescent International School and to determine whether the demographic variable of parents has an effect on their involvement in their children's education. Twelve parents whose children are enrolled in secondary level constituted the sample for the study. The main finding of the study indicated that students with highly involved parents had better academic performance and higher test scores in all the subjects compared to students whose parents were not involved in their education (Naite, 2020).

4.2.5. Gender and academic performance

For the past decades, there has been a lot of research into the relationship between gender and academic achievement (Eitle, 2005 as cited in Farooq et al., 2011). There is a difference in cognitive capacities between boys and girls, according to Ghazvini and Khajehpour (2011). They discovered that girls' learning tasks are more adaptable than that of boys. According to Omwirhiren and Anderson (2016), there is a statistically significant gap between male and female academic performance in Chemistry. They came to the conclusion that boys outperformed girls. Farooq et al. (2011), on the other hand, discovered that female students outperform male pupils. Marić and Sakač (2014) also found that girls perform better in school than guys. Girls outperform boys in terms of academic performance, according to Dev (2016). Nnamani and Oyibe (2016) came to the same conclusion. They discovered that females outperform males in social studies. Boys outperform girls in the areas of mathematics, English, and aptitude (Eshetu, 2014). In terms of mathematics, Manoah et al. (2011) claim that gender has no statistically significant impact on performance. Adigun et al. (2015) discovered no statistical differences, but concluded that boys outperform girls.

A study conducted in Nigeria to assess gender differences in academic performance of students in Economics as a subject at the secondary school level, there was no statistical difference in the academic performance of boys and girls in Economics in the 2006/2007 Senior Secondary School Certificate Examination (SSCE), but there was a statistical difference in the academic performance of boys and girls in Economics from 2008 to 2010. Males generally outperformed females in economics, according to the findings (Amuda et al., 2016). Gender's impact on academic success is still a subject of debate. Goni et al. (2015) found no statistical difference between gender and academic achievement using the Aptitude Test as a measure of academic success in Nigeria's Kashim Ibrahim College of Education. Also, Attah and Ita (2017) examined the influence of gender on academic achievement of senior secondary school English students in Calabar Municipality in Nigeria. Results of the study revealed that gender has no significant influence on academic achievement of students in English Language.

4.2.6 Peers and students' academic performance

Lavy and Schlosser (2007) state that, for many students, friendships are critical interpersonal vehicle that move them towards the psychological growth and maturity, allowing social compassion which influences the development of self-evaluation. In view of the critical role of peers relative to the academic performance of other students, various studies have investigated the extent to which peer groups influence academic performance in schools. Filade et al. (2019) investigated the influence of peer group on academic performance of undergraduate students in selected departments at Babcock University, Ogun State. Questionnaire was administered to 116 students. Results of data analysis found that peer group has significant influence on the academic performance of students. Also, Uzezi and Deya (2017) examined the relationship between peer group influence and academic achievement of secondary school chemistry students in selected secondary schools in Jalingo metropolis in Taraba

State. The results of the study revealed a significant difference between those who belonged to peer groups and those who do not belong to peer groups academic achievement. Specifically, the study found a positively significant relationship between peer group influence and students' academic achievement.

5. Method

The research design employed was the quantitative research method, specifically, a cross-sectional descriptive survey research design was applied to attain the research objective and answer the research questions. The sample for the study was 100 students consisting of 33 level 300 diploma pre-service teachers and 67 level 200 B.Ed. pre-service teachers in the selected college of education. The level 300 and level 200 pre-service teachers were selected because they have spent 3 and 2 years respectively in the college. Moreover, they are also running different programmes within the same institution in spite of the fact that they have similar entry requirements.

A self-administered questionnaire of close and open-ended questions was designed for the pre-service teachers regarding the factors that influence Students' Academic Performance. The questionnaire consists of five sections, including section A that asks questions relating to demographic information of students. The demographic information included the gender, age range, marital status, educational level, residential status, and the programme of study (i.e. degree or diploma) of the students. Section B contained statements that collected information about the parental influences on students, Section C collected information on peer influences, and Section D requested students to provide information on teaching quality and effectiveness of tutors. Section E of the questionnaire collected information from the students on the effective use of instructional materials.

6. Results and Discussion

6.1. Demographic Description of the Sample

The demographic characteristics of the respondents are presented in Table 1.

Table 1: Demographic characteristics of the study sample

Characteristics	Category	N (%)
Gender	Male	51 (51)
	Female	49 (49)
Age Range	18 - 22 years	46 (46)
	23 - 27 years	48 (48)
	28 - 32 years	4 (4.0)
	Below 18 years	2(2.0)
Marital Status	Married	6 (6.0)
	Single	94 (94)
Level of Education	200	67 (67)
	300	33 (33)

Majority of the students who participated in the survey were between the ages of 23 and 27 years accounting for 48% of the total respondents, while those below 18 years and those between ages 28-32 years were fewer and accounted for 2.0% and 4.0% of the sample respectively. The respondents were made up of 51 males representing 51%, as against 49 females who represented 49% of the respondents. An overwhelming majority (94%) of the respondents were unmarried.

Research Question 1: What are the factors that influence the academic performance of students?

The study assessed the extent to which parents, peers, effectiveness of tutors teaching and effective use of instructional materials influence the academic performance of pre-service teachers.

Table 2: Parental influence on pre-service teachers

Level	N (%)
Always	45 (45)
Occasionally	18 (18)
Sometimes	37 (37)

Table 2 presents results of descriptive statistics of the number of parents who encourage their wards to study. The students were to indicate the frequency at which their parents encourage them or get involved in their academic work at three levels: always, occasionally and sometimes. Out of the 100 respondents, 45% of them indicated their parents have always been encouraging them to study hard. Eighteen (18) percent of them indicated they are occasionally encouraged by their parents to study, while 38% of respondents also reported that their parents sometimes encourage them to study. Parental involvement in their ward's education has been identified as a major factor that is greatly related to children increased academic performance (Hara, 1998). Students, irrespective of their levels, need positive learning experiences and support in all forms or kinds as well as motivation and quality instruction to perform well in school. Research has also shown that most students who perform well or achieve success in their academic pursuit have strong academic support from their parents (Sheldon, 2009). From the results in Table 2, it is revealed that a good number (45%) of parents of the students influence their wards to study always at home. Though the number of parents who show much support to their wards to study is encouraging, it fell below half of the total number of the respondents. The sum of the respondents who indicated their parents occasionally (18%) and sometimes (37%) encourage them to study is more than those who always encourage them. This revelation is disturbing because students who are not self-disciplined may also not take their studies serious, especially when they have peers who do not also motivate them to study.

Table 3: Peer influence on pre-service teachers

Number	Characteristics	Category	Frequency	Percent
1.	Do your friends encourage you academically?	Always	23	23
		Never	14	14
		Occasionally	15	15
		Sometimes	48	48
2.	Do you study with friends?	Always	15	15
		Never	14	14
		Occasionally	21	21
		Sometimes	50	50
3.	Do your friends encourage you to study?	Always	24	24
		Never	12	12
		Occasionally	22	22
		Sometimes	42	42

4.	Are your friends always present in class?	Always	40	40
		Never	1	1
		Occasionally	9	9
		Sometime	50	50

From Table 3, nearly half (48%) of the respondents indicated that their friends sometimes encourage them on their academic activities. Only 23% of the respondents reported that their friends always encourage them academically. Also, half (50%) of the respondents indicated that they sometimes study with their friends, with only 15% of the respondents indicating they always study with their friends. Fourteen percent and 21% reported that they have never and occasionally studied with their friends respectively. It is a well-known fact that peers have a lot of influence on each other either positively or negatively. In this regard, they may influence themselves by either encouraging each other to study or otherwise. To this end, the respondents were asked to indicate the frequency at which their friends encourage them to study. As indicated in Table 3, only 23% of the respondents indicated their friends always encouraged them to study. Rather, 42% indicated that their friends sometimes encouraged them to study. Some also indicated that their friends occasionally (22%) and never (12%) encouraged them to study.

The results on whether or not their friends have always been present in class revealed that, sometimes (50%) of their friends are present in class. Less than half (40%) indicated their friends were always in class for lectures. Only 1% and 9% of the respondents indicated their friends are usually never and occasionally present in class. This is surprising because Bassey (2020) opined that peers can influence either positively or negatively. Thus, peer influence can mobilise students' energy and motivate for success. Peers can act as positive role models. If a student is influenced negatively, it affects his or her academic performance. Stronger students do have some impact on their peers and improves the overall academic performance.

Table 4 presents results of the influence of the respondents' tutors (lecturers) on the academic work of the pre-service teachers in the college.

Table 4: Tutors role in students' academic performance

Characteristics	Category	Frequency	Percent
Communication skills of lecturers	Good	76	76
	Poor	2	2.0
	Very good	20	20
	Very poor	2	2.0
Mastery in subject Area	Good	67	67
	Poor	33	33
	Very good	3	3.0
	Very poor	0	0.0
Encouragement of students by lecturers	Good	66	66
	Poor	16	16
	Very good	8	8
	Very poor	0	0
Content delivery of lessons	Good	84	84
	Poor	2	2.0
	Very Good	14	14
	Very poor	0	0

Table 4 presents results from the perspective of the students (respondents) on the performance of lecturers (tutors) in teaching and how it affects their academic performance. This was assessed in four main areas: communication skills, mastery of subject area, lecturers' encouragement of students and the content delivery of the lessons. A significant majority (76%) of the respondents reported that the lecturers have good communication skills, also 20% indicated that the lecturers have very good communication skills. A few of the respondents reported that the communication skills of the lecturers were poor (2%) and very poor (2%). This implies that, generally, an overwhelming majority of the students are of the opinion that the lecturers communicate well when teaching. Similarly, Muzenda (2013) conducted a study that found lecturers teaching style as a significant contributing factor to the academic achievement of university undergraduate students.

On mastery of content in the subject area, majority (67%) of the respondents claimed that, the lecturers have good mastery of their subject areas, followed by 33% who asserted that the lecturers' mastery of content in the subject area is poor. Three percent of the respondents reported that the lecturers' mastery of the subject area is very good. This finding aligns with the findings of a study by Muzenda (2013) when he found that lecturers' subject knowledge was the second highest lecturing dimension that had significant impact on the academic performance of students.

Lecturers are also expected to influence their students by encouraging them on their academic work. Therefore, the respondents were to indicate, in their opinion, the extent which their lecturers have been encouraging them on their academic work. The results in Table 4 indicated that a substantial number of the respondents (66%) reported that the lecturers' encouragement is good. In addition, 8% rated the encouragement to be very good. But, a few (6%) rated the encouragement to be poor, while none of the respondents rated it very poor. The conclusion therefore is that the lecturers have had positive influence on the academic work of the respondents by way of encouraging them.

A major way lecturers may influence students positively on their academic work is to deliver adequately the content of the courses they teach during lessons. From the perspective of the pre-service teachers who served as the respondents, an overwhelming majority (84%) rated the delivery of content to be good. Additionally, 14% also indicated the content delivery of lessons by the lecturers are very good. Only 2% of the pre-service teachers indicated the content delivery of lessons by the lecturers are poor. None of the pre-service teachers rated the lecturers' content delivery to be very poor. This is a clear manifestation that the lecturers exert great influence positive influence on the pre-service teachers' academic performance. This finding affirms the outcome of Muzenda (2013) study that indicated that students rated the lecturers' subject knowledge as one of the highest distinct dimensions of a lecturer that influences their academic achievements. Muwaya (2018) asserts that the effectiveness of the teacher's technique of instruction plays a big role in his teaching and learning process.

Table 5 presents results of the effects of the use of various instructional materials by lecturers on the academic performance of the students.

Table 5: Effects of lecture materials on students' academic performance

Questions	Options	N (%)
Do you use handouts/ textbooks?	Always	8 (8.0)
	Never	4 (4.0)
	Occasionally	42 (42)
	Sometimes	46(46)
Are instructional materials really available when needed?	Always	9 (9.0)
	Never	7 (7.0)
	Occasionally	28 (28)
	Sometimes	56 (56)
Are the materials provided easy to understand?	Not at all	5(5.0)

	Not Really	60 (60)
	Very Easy	34 (34)
	Kind of	1 (1.0)
Do you think the instructional materials provided are helpful and effective?	Yes	59 (59)
	No	41 (41)

Teaching and learning resources and other relevant course reading materials are important in effective teaching and has been found to facilitate the understanding of students during teaching. The study sought to elicit information from the pre-service on how the instructional materials really impacts their academic work. As presented in Table 5, nearly half (46%) of the respondents indicated that they sometimes use handout and text books, 42% indicated they occasionally use handout and other reading materials, while only few students indicated they always (8.0%) and never (4.0%) use handout or text books for their studies. This presupposes most of the pre-service teachers do not use course reading materials in the various courses for their study. This certainly may not help them to perform well in the various courses. It also implies that the course really materials are not having a major influence on their academic work.

The next question sought to elicit information from the respondents whether course materials are readily available when needed. More than half (56%) responded that course reading materials are sometimes available. This is followed by 28% of them who indicated the instructional materials are occasionally available when needed. For 4% of the respondents, they categorically stated that reading materials are never available when needed. A disappointing 9% indicated the course reading materials are always available. This is a really disturbing revelation because reading materials are very essential for students to reference and use in their studies and academic work. So, as it is revealed that they are mostly not readily available when needed it could influence the students' academic endeavour negatively. This also may be the reasons why most pre-service teachers do not use hand-outs and other reading materials.

Majority (60%) of the respondents claimed that, the test books and other course reading materials provided are not really easy to understand, while 34.7% states that the materials are very easy to understand. Just 1% of the respondents indicated the course reading materials that are provided are kind of easy to understand. Only 5% claimed the course reading materials are very difficult to understand. The respondents were to choose between yes or no on whether in their opinion instructional materials that are provided are helpful and effective to their studies. The majority (59%) responded in the affirmative, while 41% responded that the materials are not effective and do not help them in their academic work. Accordingly, Mosha et al. (2007), indicated that all the items that the teacher and students do or use to attain certain goals in a classroom scenario, such as maps, models, and boards, are considered teaching and learning resources.

Research Question 2: What are the differences between degree and diploma pre-service teachers on the factors that influence their academic performance?

There were 51 male and 49 female pre-service teachers who responded to the questionnaire. An independent-samples t-test was run to determine if there were differences on factors that influence academic performance between the pre-service teachers offering degree in the B. Ed programme and pre-service teachers offering diploma in basic education programme. There were no outliers in the data, as assessed by inspection of a boxplot. Scores for factors affecting academic performance for the two categories of pre-service teachers were normally distributed, as assessed by Shapiro-Wilk's test ($p > .05$), and there was homogeneity of variances, as assessed by Levene's test for equality of variances ($p = .089$). There was no difference on factors that affect academic performance in relation to programme of study of the pre-service teachers in terms of those offering degree ($M = 3.89$, $SD = 1.17$), and diploma ($M = 3.84$, $SD = 1.16$) pre-service teachers, $p = .079$. Thus, there is no significant difference in relation to the factors that influence the academic performance of the pre-service teachers relative to the programme of study of the respondents. This finding confirms the outcome of the study conducted by Attah

and Ita (2017) on the influence of gender on academic achievement senior secondary school English students in Calabar Municipality in Nigeria. Results of the study revealed that gender has no significant influence on academic achievement of students in English Language. This finding also corroborates the finding of a study by Goni et al. (2015) which also found no statistical difference between gender and academic achievement using the Aptitude Test as a measure of academic success in Nigeria's Kashim Ibrahim College of Education.

Research Question 3: What are the gender variations in characteristics that influence academic success among students?

There were 51 male and 49 female pre-service teachers who responded to the questionnaire. An independent-samples t-test was run to determine if there were differences on factors that influence academic performance between male and female pre-service teachers. There were also no outliers in the data, as assessed by inspection of a boxplot. Scores for factors affecting academic performance for the male and female pre-service teachers were normally distributed, as assessed by Shapiro-Wilk's test ($p > .05$), and there was homogeneity of variances, as assessed by Levene's test for equality of variances ($p = .112$). There was no difference on factors that affect academic performance in relation to male ($M = 3.25$, $SD = 0.86$) and female ($M = 3.36$, $SD = 0.89$) pre-service teachers, $p = .098$. Researchers have reported different research outcomes on gender variation and its influence on students' academic performance. The findings of this study contradict research studies that have reported that males outperform girls in school (Omwirhiren & Anderson, 2016). It also contradicts those studies that found girls outperforming girls in academic achievement in various studies (Farooq et al., 2011). The findings of this study confirm the outcome of studies that found no statistically significant impact of gender on the academic achievement of students (Manoah et al., 2011; Adigun et al., 2015; Goni et al., 2015).

7. Conclusion

This study assessed the factors that influence pre-service teachers' academic performance in a college in Ghana. The study identified parents, peers, tutors, use of relevant teaching materials as some of the factors that influence pre-service teachers academic performance. The factors could be very helpful in making students' progress in their academic activities, and vice versa. Students should be given all the encouragement, motivation and the necessary materials to help them excel in their academic activities. As seen in the analysis, very few parents actually check up on their wards schooling and motivate them to study. Parents can have great positive influence on their wards if the ward get to know that he or she is always being checked on and also encouraged to study. Again, it was seen that peers also have great influence on the academic performance of students. Students who surround themselves with peers who may not exhibit good morals and attitude towards education may have negative influences on students, and vice-versa. Colleges and educational institutions apart from providing a safe and conducive environment to improve academic performance of students, must also be interested in other factors that may not be directly under the purview of the college or school but exert influence on the academic performance of students.

Acknowledgements

We would like to extend our gratitude to all the pre-service teachers who took part in this study. We would also like to express our appreciation to the Principal and Tutors who ensured that we had access to these students in the COVID-19 pandemic era.

References

- Adigun, J., Onihunwa, J., Irunokhai, E., Sada, Y., & Adesina, O. (2015). Effect of Gender on Students' Academic Performance in Computer Studies in Secondary Schools in New Bussa, Borgu Local Government of Niger State. *Journal of Education and practice*, 6(33), 1-7.
- Adu-Agyem, J., & Osei-Poku, P. (2012). Quality education in Ghana: The way forward. *International Journal of Innovative Research and Development*, 1(9), 164-177.

- Ali, S., Zubar, H., Fahad, M., & Hamid, K. (2013). Factors contributing to Students Academic Performance: A Case Study of Islamia University Sub-Campus. *American Journal of Educational Research*, 1(18), 283-289.
- Al-Shuaibi, A. (2014). The importance of education. *Salalah College of Technology*. https://www.researchgate.net/publication/260075970_The_Importance_of_Education
- Amuda, B. G., Ali, D. G., & Durkwa, H. (2016). Gender difference in academic performance in SSCE economics subject among senior secondary school students in Maiduguri Metropolis, Borno State, Nigeria. *American Journal of Educational Research*, 4(3), 288-293.
- Aremu, A. O., & Sokan, B. O. (2003). A multi-causal evaluation of academic performance of Nigerian learners: Issues and implications for national development. *Department of Guidance and counseling, University of Ibadan*.
- Atandi, B. C.; Billiah, G., & Ntabo, A. J. (2019). Influence of teaching methods on students: academic performance in Kiswahili Subject in public and private Secondary Schools in Lang'ata Sub-County. <https://arjess.org/education-research/influence-of-teaching-methods-on-students-academic-performance-in-kiswahili-subject-in-public-and-private-secondary-schools-in-langata-sub-county.pdf>
- Attah, R.F. & Ita, P.M. (2017). Gender as predictor of academic achievements in English among Senior Secondary School two students in Calabar metropolis, Cross River State. *Global Journal of Educational Research*, 16, 149-153.
- Babyegeya, M. (2002). Educational Planning and Administration. *Dar -es- salaam: Open University of Tanzania*.
- Ballotpedia. (2021). *Academic Performance*. Retrieved on August, 2021 from https://Ballotpedia.org/Academic_performance.
- Barberos, M. T., Gozala, A. & Padayogdog, E. (2021). The Effect of the teacher's teaching Style on Students' motivation. *Steinhardt School of Culture, Education, and Development*. <https://steinhardt.nyu.edu/departments/teaching-and-learning/research/practitioner-action-research/effect-teachers-teaching>
- Basile, A. & D'Aguiar, J. (2002). An experimental analysis of computer-mediated instruction and student attitudes in a principle of financial accounting course. *Journal of Education Business*, 77(1), 137-143.
- Bassey, I. (2020). *Peer group influence and academic performance of secondary school students in English Language*. (Available at SSRN: <https://ssrn.com/abstract=3606183> or <http://dx.doi.org/10.2139/ssrn.3606183>)
- Bhandari, P. (2022). Population vs. Sample | Definitions, Differences & Examples. *Scribbr*. Retrieved from <https://www.scribbr.com/methodology/population-vs-sample/>
- Bowen, J. (2021). *Education*. Britannica Retrieved from. <https://www.britannica.com/topic/education>
- Rugutt, J. K., Chemosit, C. C. (2005). A study of factors that influence college academic achievement: a structural equation modeling approach. *Journal of Educational Research & Policy Studies*, 5(1), 66-90.
- Caro, D. H. (2011). Parent-child communication and academic performance. Associations at the within-and between-country level. *Journal for educational research online*, 3(2), 15-37.
- Chowa, G. A., Masa, R. D., & Tucker, J. (2013). Parental Involvement's Effects on Academic Performance: Evidence from the YouthSave Ghana Experiment. <https://doi.org/10.7936/K7862FZG>
- Cooper, N. (2019). How a teacher's motivation affects students. *NCC Resources Ltd*. Retrieved from <https://www.ncchomelearning.co.uk/blog/how-a-teachers-motivation-affects-students/>
- Delors, J. (1998). *The four pillars of Education, Learning: The Treasure within*.
- Dev, M. (2016). Factors Affecting the Academic Achievement: A Study of Elementary School Students of NCR Delhi, India. *Journal of Education and Practice*, 7(4), 70-74.
- Edoho, E. A. Ebuara, V. O. Agbudu, P. A. & Odey, I. J. (2020). Effect of instructional materials on students' academic performance in Mathematics in Calabar Municipality Local Government Area of Cross River State, Nigerian. *European Journal of Sciences*, 60(4), 313-318.
- Eshetu, A. A. (2014). Indiscipline problems of high school students: The case of Ethio-Japan Hidasse Secondary School (Addis Ababa, Ethiopia). *Journal of Education and Practice*, 5(37), 23-28.
- Farooq, M. S., Chaudhry, A. H., Shafiq, M., & Berhanu, G. (2011). Factors affecting students' quality of academic performance: a case of secondary school level. *Journal of quality and technology management*, 7(2), 1-14.
- Filade, B. A., Bello, A. A. Uwnoma, C. O., Anwanane, B. B. & Nwangburuka, K. (2019). Peer group influence on academic performance of undergraduate students in Bangkok University. Ogun State. *African Educational Research Journal*, 7(2), 81-87.
- Finlay, L. (2008). *Reflecting on 'reflective practice'*. The Open University.
- Ghazvini, S. D., & Khajehpour, M. (2011). Gender differences in factors affecting academic performance of high school students. *Procedia-Social and Behavioral Sciences*, 15, 1040-1045.
- Goni, U., Ali, H. K., & Bularafa, M. W. (2015). Gender Difference in Students' Academic Performance in Colleges of Education in Borno State, Nigeria: Implications for Counselling. *Journal of Education and Practice*, 6(32), 107-114.
- Gqweta, N. (2012). Poor academic performance: A perspective of final year diagnostic radiography students. *Radiography*, 18(3), 212-217. <https://doi.org/10.1016/j.radi.2012.04.002>
- Hanson, J. B. (2000). *Student performance and student growth as measure of success: An evaluator's perspective*. Paper presented at annual meeting of the American educational research association, New Orleans: Louisiana
- Hara, S. R. (1998). *Structural education modeling approach: The key to improved student achievement*. Illinois State University: The School Community, 9-19.

- Heggart, K. (2016). How important is subject matter knowledge for a teacher. Retrieved from Edutopia website: <https://www.edutopia.org/discussion/how-important-subject-matter-knowledge-teacher>.
- Hoyle, E. (1986). *Policies of school management*. Suffolk: The press Ltd.
- Impact Teachers (2017). Why a motivated teacher is key to the classroom? *International Journal of Innovative research and development*, 1(9), 164-177. Retrieved from <https://www.impactteachers.com/motivated-teacher-key-classroom/>
- Jalbani, N. L. (2014). *The impact of effective teaching strategies on the students' academic performance and learning outcome*. Retrieved August 2021 from <https://www.grin.com/document/300046>
- Jayanthi, S.V., Balakrishnan, S., Ching, A. L. S., Latiff, N. A. A., & Nasirudeen, A. M. A. (2014). Factors Contributing to Academic Performance of Students in a Tertiary Institution in Singapore. *American Journal of Educational Research*, 2(9),752-758. <https://doi:10.12691/education-2-9-8>.
- Kennedy, P. & Tay, R. (1994). Students' performance in economics: does the norm hold across cultural and institutional setting. *Journal of Economics Education*, 25(4), 291-301.
- Kirby, A. & McElroy, B. (2003). The effect of attendance on grade for first year economics students in University College Cork. *The Economic and Social Review*, 34(3), 311-329.
- Kwenda, M. (2011). Factors affecting performance in an introductory sociology course. *College Teaching*, 59, 60-65.
- Lavy, V., & Schlosser, A. (2007). Mechanisms and impacts of gender peer effects at school.
- Lowy, V. & Shlosser, A. (2007). *Mechanisms and impacts of gender peer effects at school*. NBER Working Paper 13292. Nation Bureau of Economic Research Cambridge, MA.
- Luttah-Waseka, E. & Simatwa, E. (2016). Student Factors Influencing Academic Performance of Students in Secondary Education in Kenya: A Case Study of Kakamega County. *Educational Research*, 07(03).
- Manoah, S. A., Indoshi, F. C., & Othuon, L. O. (2011). Influence of attitude on performance of students in mathematics curriculum. *Educational research*, 2(3), 965-981.
- Mante, F. A., Awereh, E. O., & Kumea, A. O. (2015). Effects of parental involvement on academic performance of pupils: A Case Study at Adukrom Methodist Primary School. *Basic Research Journal of Education Research Review*, 4(1), 1-7.
- Marić, M., & Sakač, M. (2014). Individual and social factors related to students' academic achievement and motivation for learning. *Suvremena psihologija*, 17(1), 63-79.
- Martinez, A. (2015). *Parent involvement and its effects on student academic achievement* (Doctoral dissertation).
- McNeal Jr, R. B. (2014). Parent Involvement, Academic Achievement and the Role of Student Attitudes and Behaviors as Mediators. *Universal Journal of Educational Research*, 2(8), 564-576.
- Mosha, H. J., Omari, I., & Katabaro, J. (2007). Teachers Education Management Strategy. *Dar es Salaam: Ministry of Education and Vocational Training*.
- Munawaroh, N. (2017). The influence of teaching methods and learning environment to the student's learning achievement of craft and entrepreneurship subjects at vocational high school. *International Journal of Environmental & Science Education*, 12(4), 665-678.
- Mushtaq, I., & Khan, S. N. (2012). Factors affecting Students' academic performance. *Global Journal of management and business research*, 12(9).
- Mutodi, P., & Ngirande, H. (2014). Exploring mathematics anxiety: Mathematics students' experiences. *Mediterranean Journal of Social Sciences*, 5(1), 283-283.
- Muwaya, S. (2018). Effect of teaching methods on students' performance in secondary schools: a case of secondary schools in Namutumba Town Council Namutumba District.
- Muzenda, A. (2013). Lecturers' competences and students' academic performance. *International Journal of Humanities and Social Science Invention*, 3(1), 6-13.
- Mwirichia, M. V. (2013). *Influence of parent al involvement on academic performance of preschool Children in Kangeta division, Meru County, Kenya* (Doctoral dissertation, University of Nairobi).
- Naite, I. (2020). Impact of parental involvement on children's academic performance at Crescent International School, Bangkok, Thailand. *Earth and Environmental Science*, 690, 1-9.
- Narad, A., & Abdullah, B. (2016). Academic performance of senior secondary school students: influence of parental encouragement and school environment. *Journal on Interdisciplinary Studies in Humanities*, 8(2), 12-19.
- Nnamani, S. C., & Oyibe, O. A. (2016). Gender and academic achievement of secondary school students in social studies in Abakaliki urban of Ebonyi State. *British Journal of Education*, 4(8), 72-83.
- Norhidayah, A., Kamaruzaman, J., Syukriah, A., Najah, M., & Azni, S. A. S. (2009). The factors influencing students' performance at Universiti Teknologi MARA Kedah, Malaysia. *Management Science and Engineering*, 3(4), 81-90.
- Okoye, N. N. (1982). Why students fail examinations: psychology for everyday living. *Journal of Applied Psychology* 11 (2), 1-5.
- Oladebinu, T. O., Amos, A. A., & Oyediran, W. O. (2018). Factors affecting students' academic performance in colleges of education in Southwest, Nigeria. *European-American Journal*, 6(10), 43-56.

- Olajire, B. (2022). Causes and solution to poor academic performance of Student. *Servant boy*. <https://servantboy.com/causes-poor-academic-performance-students/>
- Olumirin, C. O., Yusuf, A., Ajayi, U. S. A & Jakayinfa, A. A. (2010). Development of instructional materials from local resources for art-based courses. *Asian Journal of Information Technology* 9(2), 107-110.
- Omwirhiren, E. M., & Anderson, F. E. (2016). Effect of Class Size and Students' Attitude on Academic Performance in Chemistry at Demonstration Secondary School, Ahmadu Bello University Zaria, Nigeria. *IOSR Journal of Research & Method in Education*, 6(1), 1-6.
- Paterson, C., & Chapman, J. (2013). Enhancing skills of critical reflection to evidence learning in professional practice. *Physical therapy in sport: official journal of the Association of Chartered Physiotherapists in Sports Medicine*, 14(3), 133–138. <https://doi.org/10.1016/j.ptsp.2013.03.004>
- Rafiq, H. M. W., Fatima, T., Sohail, M. M., Saleem, M., & Khan, M. A. (2013). Parental involvement and academic achievement: A study on secondary school students of Lahore, Pakistan. *International Journal of Humanities and Social Science*, 3(8), 209-223.
- Reda, M. (2015). *Top 10 Reasons why Education is Extremely Important*. Retrieved from <https://www.linkedin.com/pulse/top-10-reasons-why-education-extremely-importantmohamed>
- Research Clue. (2021). The impact of teacher motivation on academic performance of students. Retrieved July, 2021 from <https://nairaproject.com/projects/3600.html>
- Shaari, A. S., Yusoff, N. M., Ghazali, I. M., Osman, R. H., & Dzahir, N. F. M. (2014). The relationship between lecturers' teaching style and students' academic engagement. *Procedia-Social and Behavioral Sciences*, 118, 10-20.
- Sheldon, S. (2009). *In School, Family and Community Partnerships: Your handbook for action*: Corwin Press.
- Smith, M.K (2015). *What is Education? A definition and discussion*. The End Encyclopedia and Informal Education. Retrieved June, 2021 from. <https://infed.org/mobi/what-is-education-adeinition-and-discussion/>
- Topor, D. R., Keane, S. P., Shelton, T. L., & Calkins, S. D. (2010). Parent involvement and student academic performance: A multiple mediational analysis. *Journal of prevention & intervention in the community*, 38(3), 183-197.
- Tuoyila, A. (2020). Sampling. *Investopedia*. Retrieved from <https://www.investopedia.com/terms/s/sampling>
- Uzezi, J. G., & Deya, G. D. (2017). Relationship between peer group influence and students' academic achievement in Chemistry at secondary school level. *American Journal of Educational Research*, 5(4), 350-356.
- Walberg, H. J., Fraser, B. J., & Welch, W. W. (1986). As cited in Ruguth, J. K. & Chemosit, C.C (2005). A study of Factors that Influence College Academic Achievement: A Structural Education Modeling Approach. Illinois State University.

Student Retention in Distance Learning During the Covid-19 Crisis in Indonesia: Are We Disappointing Them?

Nevy Farista Aristin¹, Agus Purnomo², Joko Sayono³, Muhammad Aliman⁴

¹ Geography Education Study Program, Faculty of Teacher Training and Education, Universitas Lambung Mangkurat, Banjarmasin, Indonesia

² Department of Social Studies, Faculty of Social Sciences, Universitas Negeri Malang, Malang, Indonesia

³ Department of History, Faculty of Social Sciences, Universitas Negeri Malang, Malang, Indonesia

⁴ Department of Geography, Faculty of Social Sciences, Universitas Negeri Malang, Malang, Indonesia

Correspondence: Agus Purnomo, Department of Social Studies, Faculty of Social Sciences, Universitas Negeri Malang, Malang, 65145, Indonesia. E-mail: agus.purnomo.fis@um.ac.id

Abstract

This paper aims to describe survey data on student retention in the distance learning in the form of learning comfort levels during the Covid-19 pandemic. The technique used to collect data is a survey at several universities in Indonesia on the subject of students and lecturers during the even semester of 2020. The results of the cross-section survey during distance learning show that the average level of comfort is low because one of them is in the reinforcement aspect. Tabulation analysis shows that lack of preparation results in learning to focus more on delivering teaching materials and too little to motivate them to learn. The perception of most of the community towards the meaning of distance learning makes learning reinforcement low for students. The impact is that learning only turns into e-teaching through the digital space. As an alternative to equal access to higher education throughout Indonesia, systematic efforts are needed to provide a thorough understanding to the guardians/parents of students about this distance learning design to provide a better learning environment during distance learning during the Covid-19 pandemic. Efforts are also needed in designing how to strengthen, especially in terms of motivation to increase learning retention.

Keywords: Retention, Motivation, Distance Learning, Covid-19

1. Introduction

Retention refers to retaining knowledge after students carry out the learning process. The knowledge deposited after learning and can be recalled in its use in real life is a form of actual learning evaluation (Schunk, 2012). If the ability is difficult to call, then the previous learning process is just conveying information. The problem of learning retention in distance learning has been stated several times by previous studies such as Huett et al. (2008); Simpson (2006, 2013); Twyford (2007). The study results concluded that low learning retention at the higher education level was the cause of soft reinforcement. Many variables affect how this knowledge can be deposited and translated by students (read Driver & Erickson, 1983; Lev Vygotsky & Michael Cole, 1978; Susan Carey, 1987).

However, the easier way to control learning objectives is the learning environment (Darrell L & Barry J Fraser, 1985).

Social, pedagogic, psychological, and physical contexts influence attitudes and achievement in a learning environment (Imms et al., 2016). For this review, the term learning environment, such as teacher-student relationships. The relationship between psychosocial, affective, and cognitive outcomes has been studied in modern learning environments (B. Fraser, 1998; Haertel et al., 1981; Jeffrey Dorman, 2002). Previous research supports that learning outcomes are influenced by the classroom environment (Bell et al., 2014; Dorman & Fraser, 2009; Gabel, 1994; Jeffrey Dorman, 2002). It is better if a good learning environment supports them. Specifically, the perception of the classroom environment is positively related to student learning outcomes or academic achievement (Chionh & Fraser, 2009; Cohn & Fraser, 2016; BJ Fraser et al., 1986), self-regulation (Velayutham & Aldridge, 2013); learning satisfaction (Darrell L & Barry J Fraser, 1985); and learning convenience (Bell et al., 2014; Ogbuehi & Fraser, 2007; Telli et al., 2010). However, they should not take the influence of the classroom environment on learning should not be taken lightly.

The learning environment is aligned with communication technology (Daggett, 1992). During the Covid-19 pandemic, learning was diverted by distance methods, whether online or not. However, unfortunately, this method's learning environment needs to be managed optimally. Most higher education institutions state that distance learning is carried out using e-learning or digital learning methods. However, they only do e-teaching, using the internet to deliver teaching materials through forums, videos, and blogs. The essence of learning is an activity that seeks to make students want to learn from a series of activities planned by lecturers (John Lubbock, 2010). Therefore, students must be given the desire to learn during distance learning.

Many study environment surveys are conducted to assess students' perceptions of their learning environment, so surveys can be undertaken to evaluate classroom settings based on their perceptions. (Imms et al., 2016). The use of perceptual measures to assess the actual environment and student preferences allows for in-depth exploration. Therefore, an in-depth exploration needs to be carried out to describe student retention in distance learning based on the comfort level of understanding during the Covid-19 pandemic.

This desire to learn is synonymous with motivation and essential to student retention (Anderson, 2006). The application of reason can increase the activeness of student learning behavior, which is seen from a social-cognitive perspective. The result of the latest research argues that the learning environment is one of the most critical factors in increasing motivation based on extrinsic and intrinsic (Dale H. Schunk et al., 2020). Create a self-reinforcing feeling of self-confidence and mastery to be more likely to retain the knowledge conveyed (Deci et al., 2001); the higher the motivation, the higher the student retention.

Someone who does distance learning must increase positive motivation as a condition for building knowledge. Efforts are being made to increase student motivation and retention by utilizing various motivational strategies (Table 1).

Table 1: Recommended strategies for increasing student motivation and retention

No	Step	Strategy recommendations to increase student motivation and retention in distance learning
1	Early	Assign tasks on a gradual level of difficulty from simple to complex; Using personal experience to arouse curiosity; Using strategy to stimulate thinking with imagination;
2	Development	Increase the meaning of content and tasks by relating them to everyday life; Using different types of activities and tasks; Involves being an active participant in learning;
3	Establishment	To create a democratic atmosphere that allows one to choose task formats, activities, and colleagues independently;

No	Step	Strategy recommendations to increase student motivation and retention in distance learning
		Allow teamwork in the learning process it's aimed to decrease competition in learning;
4	Continuity	To avoid social comparisons by giving praise to students and providing feedback during assessments;
		Support, reassure, and pay attention to student learning needs.

Source: Adoption and modification of Ames (1992); Dale H. Schunk et al. (2020); Deci et al. (2001)

However, some students are still motivated despite not utilizing the recommended strategies (Table 1) because they already have good learning interests or goals. However, this research shows that only some individuals have individual interests or learning objectives during high school and college. There is generally a substantial decline in motivation during middle school (Anderman & Maehr, 1994), especially in social science (Butler, 1999; Gabel, 1994). This condition also occurs because there needs to be more learning load. After a long day, they spend their energy and attention in the classroom. Furthermore, after school, they still have to do additional assignments. It caused low student retention, another task of forgetting about the essence of contextual learning.

Motivation can be pursued by designing the learning environment (Dale H. Schunk et al., 2020; Green, 2002) conducive to students. A communicative learning environment can build motivation to learn independently (Anderson, 2006). However, personal communication can usually be established directly. It cannot be done currently during distance learning and impacts decreasing motivation (Simpson, 2013).

This article describes the results of a student learning environment survey on distance learning during the Covid-19 pandemic. Although this condition is tentative, the results of this research can be used as an essential reference in describing the readiness of higher education institutions to manage the learning environment in distance learning. This learning environment is nothing new and is an opportunity to equalize access to higher education throughout Indonesia.

2. Method

The survey design in this study used a cross-sectional sample of universities in western Indonesia and parts of the central region (Nusa Tenggara) (Fig 1) as many as 1079 students. This survey aims to evaluate distance learning in higher education if it is conducted broadly. The primary measurement parameters include learning resources, learning environment, reinforcement, and learning management (Table 2).

Table 2: Parameters of distance learning environment measurement from student perception

No	Parameter	Indicator
1	Learning Resources	<ul style="list-style-type: none"> • Access • Forms of learning resources • The difficulty level of use
2	Learning Environment	<ul style="list-style-type: none"> • Study environment design • The suitability of the environment with the character of the students
3	Strengthening	<ul style="list-style-type: none"> • Physical device • Institutional support • Learning reinforcement • Application of attitudes and skills • Involvement of guardians/parents
4	Learning Management	<ul style="list-style-type: none"> • Learning flexibility • Assignment • Group work design • Collecting work results and providing feedback

Source: Adoption and modification of B. Fraser (1998) and Imms et al. (2016)

Descriptive analysis was used to create patterns and categories of answers. Further data mining was conducted by online interviews with subjects willing to be contacted. Then the study of the relationship between elements is used to explain data patterns that have appeared previously (Neuman, 2013).



Figure 1: Survey sample area during distance learning in Indonesia

3. Results and Discussion

The first aspect of measuring the comfort of the learning environment in distance learning is how students access the teaching materials. Technically, students were able to obtain lecture teaching material easily. This convenience is because students are used to getting various learning resources, although some still rely on lecturers as their primary source (Alshahrani et al., 2017).

In the distance learning process during the Covid-19 pandemic, only a small number of students can take advantage of the flexibility of the digital learning environment to collaborate (Table 3). Identification of the tabulation results, there are several dominant factors from students and lecturers that become obstacles in the expansion of this learning environment, including:

1. Students are constrained by direct network access from home; they have to go to public facilities less supportive of focusing/concentrating on learning during online classes.
2. Lecture design with the concept of a webinar that utilizes colleagues requires special technical skills to manage the learning environment.

The second aspect of evaluating the learning environment is how teaching materials are carried out during distance learning. The tendency of the a-synchronic pattern by providing teaching materials as an independent study guide followed by structured assignments becomes a quick choice to complete material delivery. These field findings legitimize that the implementation of distance learning is limited to e-teaching; knowledge is only transferred from the classroom to the virtual space (Simpson, 2013).

The A-synchronic design could be more robust in the learning process if it is supported by good personal communication. In this design, the implementation of peer learning that can be done in class needs to be improved. Students cannot have collegial discussions with colleagues to build perceptions of information based on more familiar language (Schunk, 2012). The implementation of learning is also somewhat flexible; when the schedule is complete, the communication ends until the next meeting. The interaction factor between students and lecturers also limits their flexibility for further contact if they have learning difficulties.

Table 3: The pattern of delivering teaching materials during distance learning

No	Category of learning resources used	Amount (%)
1	Digital learning environment has the opportunity to invite experts in digital discussions (webinars)	5

2	the digital material provided has been upgraded from the internet/books	16
3	the material provided is redesigned as needed	15
4	the material provided is used in schools in digital form	57
5	Others	6
Total		100

This new learning pattern is rarely conveyed to parents. Some parents assume that their children's job is to help with their parents or help with household chores when children are at home. If their children are in front of a computer or handphone to study, they will complain about their children's activities. It can be seen that the apathetic attitude of parents toward children's learning activities. So, the impact is that students will not focus when doing distance learning.

The institution assumes that students have reached the maturity stage to be placed in andragogy learning. This learning becomes students to be an independent student who has responsible and proactive character through interactions with teachers (Liz Burge, 1998) (see Figure 2). But Covid-19 caused most (73%) not ready to fully become independent students.

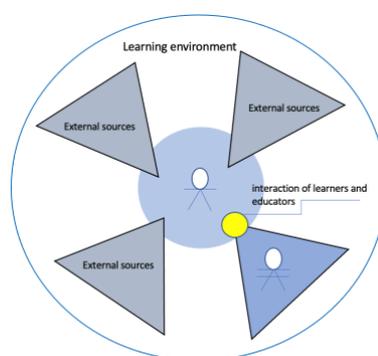


Figure 2: The Pattern of Interaction Between Students and Educators in Distance Learning in Andragogy Learning

The third aspect is how to strengthen distance learning. Educators can easily accommodate it within the network and outside the network. The lecturer factor is the main factor in the quality of learning services. Based on the interview results, we also found that the characteristics of young lecturers with children of primary education also affect the learning schedule in the distance learning process. During covid-19 pandemic, distance learning was only focused on the transfer of knowledge, while the transfer of skill and value could not be carried out optimally. In some cases, the learning process in the department of sciences, transfer skill and value need a conducive work environment such as a laboratory for practicum.

Meanwhile, related to appreciation, distance learning causes a limited appreciation of learning achievement (table 4). It can be seen from the lack of a comment column used for appreciation. Simple appreciation can increase self-confidence through their assignments (Deci et al., 2001), so their retention and motivation can increase (Bell et al., 2014; Ogbuehi & Fraser, 2007; Telli et al., 2010). However, the relationship between increased retention and learning motivation is still an assumption in distance learning (Simpson, 2013).

The final aspect evaluated from the distance learning environment is how learning is managed. At the point of assigning assignments, there are no obstacles in individual learning activities. Students can freely collect resources and arrange them according to the bill of learning activities. Obstacles arise when learning activities must be carried out in groups; students need help to determine roles in the division of group tasks. The suitability of work patterns between individuals in groups is one of the factors of this obstacle (Kirschner et al., 2008; Rosa Angela Fabio et al., 2020). They are also not used to online group work, so members appear apathetic or too domineering (Rosa Angela Fabio et al., 2020).

Table 4: Some preliminary studies of the implications of online distance learning

No	Preliminary research	Findings of strengthening activities	Impact	Note
1	Simpson (2006)	Online counseling for learning difficulties	Increase retention by 5%	Reducing lecturers' costs in online learning by 62%
2	Twyford (2007)	Motivational email	Increase retention by 11.5% and motivation to learn by 5%	-
3	Huett et al. (2008)	Motivational email	Increase motivation by 23.4%	-
4	Simpson (2013)	Online counseling and motivation in feedback	Increase retention by 18.9%	-

Based on several aspects of measuring the learning environment during distance learning, the expectations of students about online lectures tend to decrease (Figure 3). As many as 91% of students are more likely to do formal learning in class because they consider learning interaction activities irreplaceable through virtual communication media interactions. Their social bond has been built in the classroom environment, so bringing it to the virtual space takes time and habituation (Heeyoung Han, 2013).

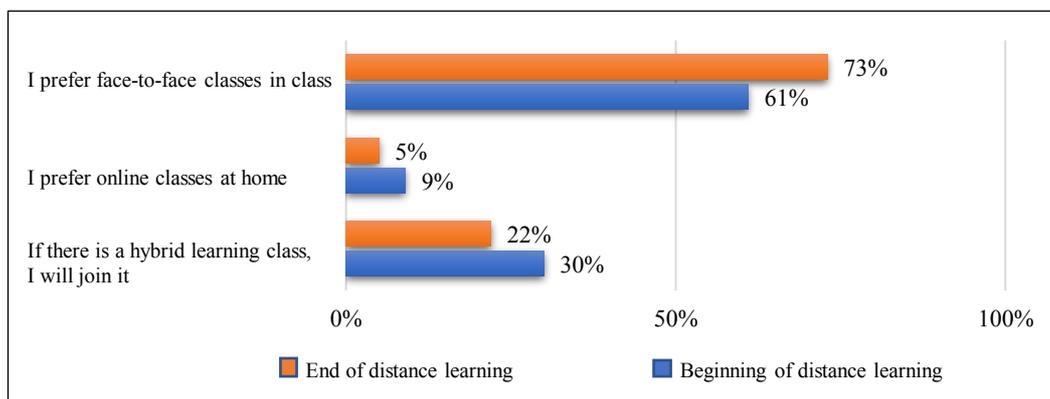


Figure 3: Student expectations in distance learning

At the end of this distance learning period, expanding the learning space on digital communication media positively impacts learning interaction patterns. Massive application of online learning platforms managed by institutions effectively contains its management, especially costs (Simpson, 2013). Previously, individual lecturers who wanted to do distance learning online had to pay a fee to pay for platform subscriptions; now, the institution has managed the process. This new pattern can provide long-term benefits in distance learning and equity in higher education in Indonesia.

4. Results and Discussion

This survey is only limited to describing how distance learning in distance learning during the Covid-19 pandemic in universities is from the student's perspective. The survey results show that the lack of preparation makes the management design only seem to transfer learning into digital form via the internet as an alternative to equal access to higher education throughout Indonesia. A systematic effort is needed to provide students with a thorough understanding of distance learning design to provide a better learning environment. Steps are also required in designing how to strengthen, especially in terms of motivation to increase learning retention. Recommendations for further research on descriptive studies between motivation, retention, and learning outcomes in distance learning in Indonesia and another region to improve good education quality.

References

- Alshahrani, S., Ahmed, E., & Ward, R. (2017). The influence of online resources on the student–lecturer relationship in higher education: a comparison study. *Journal of Computers in Education*, 4(2), 87–106. <https://doi.org/10.1007/s40692-017-0083-8>
- Ames, C. (1992). *Classrooms: Goals, Structures, and Student Motivation*.
- Anderman, E. M., & Maehr, M. L. (1994). Motivation and Schooling in the Middle Grades. *Review of Educational Research*, 64(2), 287–309. <https://doi.org/10.3102/00346543064002287>
- Anderson, E. (2006). Retention for Rookies.
- Bell, L. M., Aldridge, J. M., Bell, L. M., & Aldridge, J. M. (2014). Students' Voices. In *Student Voice, Teacher Action Research and Classroom Improvement* (pp. 47–72). SensePublishers. https://doi.org/10.1007/978-94-6209-776-6_2
- Butler, M. B. (1999). Factors associated with students' intentions to engage in science learning activities. *Journal of Research in Science Teaching*, 36(4), 455–473. [https://doi.org/10.1002/\(SICI\)1098-2736\(199904\)36:4<455::AID-TEA4>3.0.CO;2-T](https://doi.org/10.1002/(SICI)1098-2736(199904)36:4<455::AID-TEA4>3.0.CO;2-T)
- Chionh, Y. H., & Fraser, B. J. (2009). Classroom environment, achievement, attitudes, and self-esteem in geography and mathematics in Singapore. *International Research in Geographical and Environmental Education*, 18(1), 29–44. <https://doi.org/10.1080/10382040802591530>
- Cohn, S. T., & Fraser, B. J. (2016). Effectiveness of student response systems in terms of learning environment, attitudes, and achievement. *Learning Environments Research*, 19(2), 153–167. <https://doi.org/10.1007/s10984-015-9195-0>
- Daggett, W. R. (1992). Jobs skills of the '90s require a new educational model for all students. *Liaison Bulletin*, 18(5), 1–19.
- Dale H. Schunk, Judith R Meece, & Paul R. Pintrich. (2020). *Motivation in Education: Theory, Research, and Applications* (Vol. 4). Pearson. <https://www.pearson.com/store/p/motivation-in-education-theory-research-and-applications/P100000204085>
- Darrell L, F., & Barry J Fraser. (1985). Using Short Forms of Several Classroom Environment Scales to Assess and improve Classroom Psychosocial Environment.
- Deci, E. L., Koestner, R., & Ryan, R. M. (2001). Extrinsic Rewards and Intrinsic Motivation in Education: Reconsidered Once Again. *Review of Educational Research*, 71(1), 1–27. <https://doi.org/10.3102/00346543071001001>
- Dorman, J. P., & Fraser, B. J. (2009). Psychosocial environment and affective outcomes in technology-rich classrooms: Testing a causal model. *Social Psychology of Education*, 12(1), 77–99. <https://doi.org/10.1007/s11218-008-9069-8>
- Driver, R., & Erickson, G. (1983). Theories-in-Action: Some theoretical and empirical issues in the study of students' conceptual frameworks in science. *Studies in Science Education*, 10(1), 37–60. <https://doi.org/10.1080/03057268308559904>
- Fraser, B. (1998). Classroom Environment Instruments: Development, Validity, and Applications. *Learning Environments Research*, 1(1), 7–34. <https://doi.org/10.1023/A:1009932514731>
- Fraser, B. J., Treagust, D. F., & Dennis, N. C. (1986). Development of an Instrument for Assessing Classroom Psychosocial Environment at Universities and Colleges. *Studies in Higher Education*, 11(1), 43–54. <https://doi.org/10.1080/03075078612331378451>
- Gabel, D. (1994). *Handbook of research on science teaching and learning*. National Science Teachers Association.
- Green, S. K. (2002). Using an expectancy-value approach to examine teachers' motivational strategies. *Teaching and Teacher Education*, 18(8), 989–1005. [https://doi.org/10.1016/S0742-051X\(02\)00055-0](https://doi.org/10.1016/S0742-051X(02)00055-0)
- Haertel, G. D., Walberg, H. J., & Haertel, E. H. (1981). Socio-psychological Environments and Learning: a quantitative synthesis. *British Educational Research Journal*, 7(1), 27–36. <https://doi.org/10.1080/0141192810070103>
- Heeyoung Han. (2013). Relationship between Students' Emotional Intelligence, Social Bond, and Interactions in Online Learning. *Educational Technology & Society*, 15(1), 78–89. https://www.researchgate.net/publication/258032341_Relationship_between_Students'_Emotional_Intelligence_Social_Bond_and_Interactions_in_Online_Learning
- Huett, J. B., Kalinowski, K. E., Moller, L., & Huett, K. C. (2008). Improving the motivation and retention of online students through the use of arcs-based emails. *International Journal of Phytoremediation*, 21(1), 159–176. <https://doi.org/10.1080/08923640802224451>
- Imms, W., Cleveland, B., & Fisher, K. (2016). Evaluating learning environments : snapshots of emerging issues, methods, and knowledge.
- Jeffrey Dorman. (2002). Classroom environment research: Progress and possibilities. *Queensland Journal of Educational Research*, 18(2), 112–140. <http://iier.org.au/qjer/qjer18/dorman.html>

- John Lubbock. (2010). *The Pleasures Of Life Complete*. Kessinger Publishing, LLC. <https://www.goodreads.com/book/show/51100067-the-pleasures-of-life-complete>
- Kirschner, F., Paas, F., & Kirschner, P. A. (2008). Individual versus group learning as a function of task complexity: An exploration into the measurement of group cognitive load. In *Beyond Knowledge: The Legacy of Competence: Meaningful Computer-based Learning Environments* (pp. 21–28). Springer Netherlands. https://doi.org/10.1007/978-1-4020-8827-8_4
- Lev Vygotsky, & Michael Cole. (1978). *Mind in Society: Development of Higher Psychological Processes*. https://books.google.co.id/books?id=RxjjUefze_oC
- Liz Burge. (1998). View of Beyond Andragogy : Some Explorations for Distance Learning Design. *International Journal of E-Learning & Distance Education*, 3(1), 5–23. <http://www.ijede.ca/index.php/jde/article/view/326/220>
- Neuman, W. L. (2013). *Metodologi Penelitian Sosial: Pendekatan Kualitatif dan Kuantitatif*.
- Ogbuehi, P. I., & Fraser, B. J. (2007). The learning environment, attitudes, and conceptual development associated with innovative strategies in middle-school mathematics. *Learning Environments Research*, 10(2), 101–114. <https://doi.org/10.1007/s10984-007-9026-z>
- Rosa Angela Fabio, Virginia Canegallo, Sandro De Santis, & Tindara Capri. (2020). Effect of group size, task complexity, and time pressure on decision-making efficiency. In *Advances in Psychology Research*. Nova Publisher. https://www.researchgate.net/publication/338736629_Effect_of_group_size_task_complexity_and_time_pressure_on_decision-making_efficiency
- Schunk, D. H. (2012). *Learning Theories: An Educational Perspective*. In Pearson (VI). Pearson Education Inch. <https://doi.org/10.1007/BF00751323>
- Simpson, O. (2006). Predicting student success in open and distance learning. *Open Learning*, 21(2), 125–138. <https://doi.org/10.1080/02680510600713110>
- Simpson, O. (2013). Student retention in distance education: are we failing our students? *Open Learning*, 28(2), 105–119. <https://doi.org/10.1080/02680513.2013.847363>
- Susan Carey. (1987). *Conceptual Change in Childhood*. The MIT Press.
- Telli, S., den Brok, P., & Cakiroglu, J. (2010). The importance of teacher-student interpersonal relationships for Turkish students' attitudes towards science. *Research in Science and Technological Education*, 28(3), 261–276. <https://doi.org/10.1080/02635143.2010.501750>
- Twyford, K. (2007). Student retention in distance education using online communication.
- Velayutham, S., & Aldridge, J. M. (2013). Influence of Psychosocial Classroom Environment on Students' Motivation and Self-Regulation in Science Learning: A Structural Equation Modeling Approach. *Research in Science Education*, 43(2), 507–527. <https://doi.org/10.1007/s11165-011-9273-y>

Investigation of Secondary School Student's Value Perceptions and Attitudes Regarding to Physical Education and Sports Lesson*

Ahmet Temel¹, Hüdaverdi Mamak²

¹ Eskil 75th Year Anatolian High School, T.R. Ministry of National Education, Aksaray, Turkey. ORCID: 0000-0001-9215-6106

² Faculty of Sports Sciences, Niğde Ömer Halisdemir University, Niğde, Turkey. ORCID: 0000-0002-0842-5949

Correspondence: Ahmet Temel, Eskil 75th Year Anatolian High School, T.R. Ministry of National Education, Aksaray, Turkey. Tel: 05375101551. E-mail: dr.ahmettemel@gmail.com

Abstract

This research aimed to examine the value perceptions and attitudes of secondary school students towards physical education and sports lessons. The research, which was designed in a quasi-experimental model with a pretest-posttest control group, was conducted with 91 7th-grade students in the second semester of the 2020-2021 academic year. The students were divided into 4 groups according to the course content applied in the physical education lesson: "Sports Education Model (SEM)", "Physical Activity Card (PAC)", "Traditional Children's Games (TCG)" and "Control Group (CG)". Physical education lessons were carried out with the groups for 10 weeks. The data were collected using the mixed method explanatory sequential design approach. "Physical Education and Sports Lesson Values Education Scale" and "Physical Education and Sports Attitude Scale" were used to collect quantitative data. In the analysis of the data, arithmetic means, correlation, Wilcoxon, Mann Whitney U, and Kruskal Wallis analyzes were performed. Qualitative data, on the other hand, were collected through lesson observations and focus group interviews and analyzed by content analysis. According to the research findings; there has been an increase in secondary school students' physical education lesson value perceptions and attitudes. The most developed value of the students was friendship, followed by self-control, helpfulness, justice, and responsibility, respectively. The students in the TCG and SEM groups showed more improvement in their helpfulness, friendship, and general value perception. Those in the TCG group improved more in responsibility and self-control than the CG and PAC groups. Physical education lesson attitudes of SEM, PAC, and TCG group students improved more than CG students. While there was a development in favor of males in self-control value, no significant difference was found in other values dimensions and course attitudes according to gender. A positive moderate relationship was found between students' value perceptions and course attitudes. In the focus group interview, the students in different groups interpreted the research findings in different ways. As a result of the research; TCG and SEM were at the forefront in the development of students' value perception, and PAC and TCG in the development of course attitudes. Based on these results, it is recommended that teachers teach lessons with different models, methods, and course materials.

Keywords: Attitude, Physical Activity Card, Physical Education and Sports, Secondary School Student, Sports Education Model, Traditional Children's Games, Value Perception

* This study is a part of Dr. Ahmet Temel's doctoral thesis under the supervision of Prof. Dr. Hüdaverdi Mamak.

1. Introduction

1.1 Value and attitude concept

Value is the special meanings we attach to something about its condition. It is the degree of materiality of a situation or object (Tepe, 2002: 346). Values, in essence, enable individuals to prioritize values in order to respond to social expectations. People's values and beliefs may differ. Value is also the belief that something is desirable or undesirable, and it guides attitudes (Güngör, 2018: 180). Individual's values; it fulfills the function of influencing, determining, regulating, directing, and managing attitudes and behaviors (Dilmaç, 2012: 2). The concepts of value and attitude are related to each other, and individuals develop attitudes toward situations through their value system. When the concept of attitude is examined; it is defined as the tendency of an individual to react cognitively, emotionally, and behaviorally against a situation with the help of experience, motivation, and knowledge (İnceoğlu, 2011: 16). Individuals tend to behave depending on situational factors (Tavşancıl, 2018: 70). As can be understood from the definitions, individuals can gain values and attitudes through life, experience and learning (Kağıtçıbaşı & Cemalcılar, 2020: 143).

1.2 Value Education and Attitude

Schools conduct value education on a planned basis to create a common social value perception. Thus, while the students who receive values education in schools are adopting the basic values related to their character development, the value judgments of society are maintained by protecting them (Lovat, 2011). It is recommended that values education is built on the virtues of respect and responsibility (Lickona, 1992). In today's Turkey, values education has been added to the official curriculum with the title of "root values". Root values are classified as justice, honesty, friendship, patience, self-control, love, respect, responsibility, helpfulness, and patriotism (MNE, 2018). The role of physical education lessons is great in imparting these values to students and developing a positive attitude toward values (Kuter & Kuter, 2012). In physical education course, it is aimed that students develop a positive attitude by doing physical activities and become willing to participate in physical activity throughout their lives (Kangalgil et al., 2006). The teacher who conducts the physical education lesson can do the value education with different models, methods, styles, and course materials. Sports Education Models (SEM), Traditional Children's Games (TCG), Physical Activity Cards (PAC), and Traditional Methods can be used in value education (MNE, 2018).

SEM is a teaching model that supports students' more active and healthy life experiences and raises skilled, knowledgeable, and willing sports individuals. In this model, students learn team tactics and the behaviors of the second role they have acquired (coach, captain, outfitter, etc.) along with sport-specific skills (İnce et al., 2010: 47-48). Students develop responsibility, commitment, leadership, belonging, and learning skills by virtue of their roles (Anwar et al., 2019). Students develop skills, values, attitudes, and tactical strategies at the end of the SEM season.

The PAC, which is used to gain value for students in Turkey, was designed with reference to the "Top Play Sport (TOPs)" cards developed in England. TOPs have been produced in different contents according to the student's development levels. The "Top Play" yellow card group helps to gain basic motor skills in early childhood (5-9 years). The "Top Sport" mort card group was created to improve the physical fitness and movement skills of children in their second childhood (10-13 years) (Mirzeoğlu, 2017). Teachers can select and use cards related to the student's development level and course content. When teachers benefit from PAC in physical education classes, students enjoy the lessons, and their participation in classes increases (Esen & Mirzeoğlu, 2018). PAC has an important function in providing students with values such as tolerance, cooperation, and obeying the rules (Temel & Kangalgil, 2021).

Another way for societies to transfer their values to future generations is through games (Sümbüllü & Altınışık, 2016). The game; it takes the child away from egocentrism and makes him understand the feelings of others. Many moral concepts such as true-false, right-wrong, cooperation, communication, protecting rights and freedoms,

gaining national and moral values, and rules to be followed are learned during the game (Temel & Kangalgil, 2021). There are “Traditional Children's Games (TCG)” in which each society reflects its culture. TCG is fun and culturally valuable games that positively affect the development of children, improve their skills, and add universal value (Lestarininingrum, 2017). The child, playing the TCG, learns about being hopeful, obeying the rules, sharing, greeting, communication, self-control, determination, patience, honesty, honesty, and social roles (Fang et al., 2016; Lestari & Prima, 2017).

1.3 Introduce the Problem

Today's modern understanding of education has realized that raising students only cognitively by depriving them of values is a threat to society (Kenan, 2009). For this reason, education for cultural and universal values is carried out at all levels of formal education (Çimen et al., 2016). Especially in the years when students start school, they develop values and positive attitudes through identification with their teacher and friendships. When this critical period is passed, it is very difficult for students to change their emotions (Tavşancıl, 2018: 79-81). The attitudes of the students may vary according to the course content. For example, while boys like challenging movements, girls may like aesthetic movements (Liu et al., 2008). On the other hand, while students with good physical competency enjoyed competitive games, students with low skill levels did not like competitive games (Bernstein et al., 2011). Students who develop a positive attitude towards the physical education lesson reach their lesson goals more easily (Subramaniam & Silverman, 2007).

1.4 Explore Importance of the Problem

Considering the value studies in physical education lessons, it was found that there is generally a positive value perception at the secondary school level. Gender makes a difference as an important variable in the formation of value perception (Işıkgöz et al., 2018). In experimental studies, the intervention applied instead of gender was at the forefront (Burgueño & Medina-Casabón, 2020). Value studies were generally carried out using the scanning model (Keleş & Yoncalık, 2019; Sağın & Karabulut, 2019). In the literature, it has been observed that students generally have a positive attitude toward secondary school physical education lessons (Kumar & Singh, 2011). Gender and grade level have been important predictors of course attitude (Kangalgil et al., 2006). Again, attitude studies were mostly carried out without using an intervention approach (Sivrikaya & Kılıçık, 2018).

1.5 State Hypotheses and Their Correspondence to Research Design

It is known that young people who do sports for a long time through physical education classes develop self-control skills and display virtuous human behaviors away from aggression (Basiaga-Pasternak et al., 2020). With the acquisition of these values, the attitude of being willing to participate in physical activities is an important support for the success of the students. When students learn their attitudes, they will direct their careers in line with their interests (Çakmak Yıldızhan & Çağlayan, 2018). Proceeding from here, the research was conducted to examine the value perceptions and attitudes of secondary school 7th-grade students toward physical education and sports lessons. The study was carried out with 7th-grade students during a 10-week experiment, considering that the ability to understand, interpret and respond to measurement tools is better than the lower grade levels and that 8th-grade students are preparing for high school. It is thought that the results of the study will be important because of the use of different course contents in the experimental process and the examination of the value and attitude change together. In addition, quantitative and qualitative collection of study data will be beneficial in obtaining reliable results. After determining the effectiveness of the course content used, it is anticipated that the results of the study will contribute significantly to the literature.

2. Method

2.1. Research Model

This research is in a quasi-experimental model with the pretest-posttest control group. Since it is not possible to assign impartially while creating groups in educational institutions, an intervention approach is applied to ready groups. At the same time, the homogeneity of the pretest group scores is checked (Büyüköztürk et al., 2020: 203-205; Can, 2019: 14). In this direction, the content of the experimental studies were randomly assigned to the grade branches and the homogeneity assumption was fulfilled in the pre-test results. In the experimental groups, while the lessons were taught with the sports education model, physical activity card, and traditional children's games; in the control group, lessons were conducted with the traditional method. The intervention approaches applied to the groups and the situations affecting the physical education lesson value perception and attitude were examined.

2.2 Study Group

The study was carried out in Kayseri/Yeşilhisar in the 2nd semester of the 2020-2021 academic year. The study group consisted of 91 secondary school students attending the 7th grade in 2 different village schools. The students to be included in the study were selected according to the homogeneous sampling technique, one of the purposive sampling methods. Students studying in close villages and at the same grade level can be examined with this technique. Since at least 20 participants in the experimental groups gave reliable results (Büyüköztürk et al., 2020: 92-97), the study group was considered to be sufficient.

Table 1: Demographic characteristics of students

Variable	Sub Categories	f	%	Total
Gender	Male	44	48.4	91
	Female	47	51.6	
Experimental groups	Sports Education Model (SEM)	23	25.3	
	Physical Activity Card (PAC)	22	24.2	
	Traditional Children's Games (TCG)	23	25.3	
	Conventional Method/Control Group (CG)	23	25.3	

2.3 Experimental Design

Students in the first village school formed SEM and CG; the second village school formed PAC and TCG. To obtain effective results in the application of SEM and other teaching methods, work should be carried out for more than 8 weeks (Hünük & Saraç Oğuzhan, 2017). Accordingly, it was assumed that the 10-week experimental period was sufficient.

Football season application was made in the SEM group. Since the class size is "23", 3 different teams consisting of "8-8-7" people were formed. The teams are named as "Ay Yıldız, Alfa, and Gönüllerin Birincisi". In line with their character and skills, the students in the team were given the duties of coach, assistant coach, conditioner, equipment man, statistician, paramedic, referee, and press. In the first 5 weeks, the coaches made their teams work on passing, dribbling, shooting, and position. During this time, students with other responsibilities supported their teams. In the second 5 weeks, league matches with points were held. At the festival held at the end of the season, the champion "Ay Yıldız" team was awarded certificates.

In the PAC group, "4 weeks football, 4 weeks volleyball and 2 weeks athletics" units were treated, and basic level Yellow PAC and branch-based Purple PAC were used. In the volleyball unit, the Yellow PAC "18- Getting used to the ball, 19- Throwing holding movements, 29- Target games, and 30- Throwing hitting" cards were used. Net and racket games from the Purple PAC group "1- Are you ready?, 2- Flying balls, 3- Receiving the bouncing ball, 4- Throw the serve, 5- Serve reception, 6- Far-close-sideways, 7- Two by two and 8- Earn points" cards were used. In the football unit, "19- Throwing-holding, 21- Kicking, 23- Stopping-control, 24- Dribbling, 27- Collecting the ball, and 28- Relay race" cards were used. From Purple PAC offensive games, "3- Pass, 4- Pass game, 5- Five pass, 7- Find space and 10- Wing game" cards; Purple PAC from hitting and catching games, "3- Hit the target, 6- Throw at the target, 7- Accurate shot and 9- Şırnak baseball" cards were used. In the athletics unit, "3- Running,

4- Jumping-bouncing, 5- Stepping and tabbing, 13- Jumping-touchdown, 15- Static balance, and 28- Relay race” cards from the Yellow PAC group were used.

The provincial directorate of national education organizes TCG festival and it includes castled dodgeball game, handkerchief snatch, and hopscotch games. These games were played by TCG students. Castled dodgeball game and handkerchief snatch game were applied for 4 weeks, and hopscotch games were applied for 2 weeks. Castled dodgeball game; It is a cooperative game that develops throwing-holding skills in a team of 8 people and includes attacking and defending. A team wins the game when it hits all the players in the opposing team or when the opponent makes a mistake. Handkerchief snatch game; It is a game that develops speed, attention, strategy, and cooperation skills in a team of 10 people. The opposing team must be completely eliminated to win the handkerchief snatch game. On the other hand, hopscotch is an 8-stage game that is played individually, and develops balance-attention skills. The student who is at the most advanced stage in 10 minutes compared to his opponent wins the game. During the experiment, these games were played by forming heterogeneous teams.

In the control group, the units (volleyball, football, athletics) used while teaching in the PAC group were applied with the traditional method under the supervision of the teacher.

2.4 Data Collection Tools

In the study, data were collected using an explanatory sequential design approach in the mixed method. In this method, the collection of data is quantitatively weighted. To allow for the explanation and elaboration of the quantitative data obtained, qualitative data on the subject are collected and the results are interpreted (Creswell, 2020: 707).

2.4.1 Physical Education and Sports Lesson Values Education Scale

28-item scale developed by Kangalgil et al., (2021) was used to learn students' perceptions of value. The 5-point Likert-type scale has a total of 5 dimensions: Responsibility, justice, helpfulness, self-control, and friendship. The Cronbach alpha reliability coefficient of the scale is .93. While evaluating the scale; 1-1.79 points very negative, 1.80-2.59 points negative, 2.60-3.39 points medium, 3.40-4.19 points positive, and over 4.20 points very positive over the arithmetic mean interpreted as perception.

2.4.2 Physical Education and Sports Attitude Scale

A one-dimensional 24-item scale developed by Demirhan & Altay (2001) was used to learn students' attitudes toward physical education and sports lessons. The 5-point Likert-type scale has 12 positive and 12 negative items. Negative expressions are used with reverse coding. The Cronbach alpha reliability coefficient of the scale is .93. While evaluating the scale; 1-1.79 points very negative, 1.80-2.59 points negative, 2.60-3.39 points average, 3.40-4.19 points positive, and above 4.20 points very negative over the arithmetic average interpreted as a positive attitude.

2.4.3 Collection of Qualitative Data

After the pre-test and post-test quantitative data collection, the students' most and least changing value perceptions and attitude expressions were determined. The determined statements were converted into questions and a focus group interview was conducted and recorded with a voice recorder. A total of 12 students, 3 from each group (SEM, PAC, TCG, and CG), participated in the interview. The sound recording was transferred to the word processing program exactly. In addition, the teacher's diary was used. A purposeful sample was chosen to ensure the external validity of the qualitative data. The students in the experimental groups were selected according to their skill level as good, medium, and bad. The credibility of the study was ensured by reading the interview forms to the students after the focus group interview. In the internal consistency reliability of the study, the data were re-examined and grouped at 4 weeks intervals. Thus, the details that the researcher might overlook over time were taken under control (Yıldırım & Şimşek, 2018: 273-282).

2.5 Ethical Aspect of Research

An ethical report was received from Niğde Ömer Halisdemir University Scientific Research and Publication Ethics Committee (dated 02/07/2020 and numbered 86837521-050.99-E-26846). To be able to implement the research after the ethical report, the study was carried out by obtaining research permission from the Kayseri Provincial Directorate of National Education (dated 27/07/2020 and numbered 94025929.02-E.9929856). With the help of data collection scales, pre-test measurements of the students were taken in February 2021. The researchers recorded their observations during the 10-week experiment by keeping a diary. Again, with the data collection scales, the post-test measurements of the students were taken in April 2021. A focus group meeting was held in May 2021 for the different results of the students between the posttest and pretest.

2.6. Evaluation of Data

In the analysis of quantitative data, arithmetic mean, frequency, standard deviation, and correlation analyzes were performed by using SPSS (Ver: 24.0) program. Since the data did not show normal distribution, Wilcoxon, Mann Whitney U, and Kruskal Wallis analysis from non-parametric tests were made in comparison, and a .05 significance level was taken into account. In experimental studies, the difference score should be calculated by using the pretest-posttest results to examine the effect of the applied intervention (Can, 2019: 258). Difference scores were obtained by subtracting the pre-test scores from the post-test scores of the students and the comparisons were made over the difference score.

The qualitative data of the research (diary and focus group interview) were analyzed by content analysis method. The purpose of content analysis is to explain the collected data (Yıldırım & Şimşek, 2018: 242). Close to each other data were brought together around certain concepts and were conveyed with direct quotations and the researcher's interpretation.

3. Results

3.1 Quantitative Results

Table 2: Pre-test-post-test, and difference scores of students' physical education lesson value perception and attitudes

Scale	Dimensions	Pre-test			Post-test		Difference
		N	\bar{x}	SD	\bar{x}	SD	
Value perception	Responsibility	91	4.22	.91	4.42	.74	.19
	Justice	91	4.10	.99	4.38	.75	.27
	Helpfulness	91	3.91	.82	4.29	.73	.37
	Self-control	91	3.96	.77	4.38	.75	.41
	Friendship	91	3.65	.90	4.11	.73	.46
	Whole scale	91	3.98	.74	4.30	.64	.31
Lesson attitude	Attitude scale	91	3.93	.61	4.33	.51	.40

While the students' responsibility value was found to be very positive in pre-experiment dimension; justice, helpfulness, self-control, friendship and positive value perceptions were found throughout the scale. After the experiment, there was a positive increase in the scores of the students. Thus, the perceptions of responsibility, justice, helpfulness, self-control, and value across the scale have reached a very positive level. Although there was a positive development in friendship value, students' perception of value could not reach a very positive level. According to the difference scores, the most development was in friendship value. Friendship was followed by the values of self-control, helpfulness, justice, and responsibility, respectively. Values that carry general judgments about family and country in the dimension of responsibility were the values that showed the least improvement.

While the pre-experiment physical education lesson attitudes of the students were positive, the post-experiment lesson attitudes reached a very positive level. When the difference scores of the students are looked at, the feelings of cooperation and the attitude of willingly participating in the lesson have developed the most. Believing that physical education lesson improves health was the attitude towards the lesson that showed the least improvement.

Table 3: Comparison of pretest-posttest scores of students' physical education lesson value perception and attitudes

Scale	Posttest-Pretest	Sequence	n	Rank average	Rank sum	z	p
Value perception	Responsibility	Negative	17	22.29	379.00	-	.000*
		Positive	42	33.12	1391.00		
		Equal	32				
	Justice	Negative	11	19.68	216.50	-	.000*
		Positive	37	25.93	959.50		
		Equal	43				
	Helpfulness	Negative	10	26.45	264.50	-	.000*
		Positive	61	37.57	2291.50		
		Equal	20				
	Self-control	Negative	13	29.88	388.50	-	.000*
		Positive	60	38.54	2312.50		
		Equal	18				
	Friendship	Negative	9	21.50	193.50	-	.000*
		Positive	59	36.48	2152.50		
		Equal	23				
Whole scale	Negative	9	17.83	160.50	-	.000*	
	Positive	73	44.42	3242.50			
	Equal	9					7.127
Lesson attitude	Attitude scale	Negative	11	32.82	361.00	-6.353	.000*
		Positive	73	43.96	3209.00		
		Equal	7				

*($p < .05$)

In Table 3, the importance of the difference between the pre-test and post-test scores of the students regarding the physical education lesson value perceptions and attitudes was examined. It is understood from the number of students in the positive order that the students who participated in physical education activities generally changed their views positively. The positive change in student scores was found to be significant in favor of the posttest ($p < .05$).

Table 4: Comparison of physical education lesson value perception and attitude difference scores according to experimental groups

Scale	Dimensions	Group	n	Rank average	χ^2	p	Difference
Responsibility		SEM	23	45.00	17.075	.001*	PAC, CG < TCG
		PAC	22	41.48			
		TCG	23	63.80			
		CG	23	33.52			
Justice		SEM	23	51.28	5.012	.171	
		PAC	22	40.41			
		TCG	23	52.26			
		CG	23	39.80			
Helpfulness		SEM	23	55.50	23.886	.000*	
		PAC	22	38.09			

Value perception	TCG	23	61.78	CG<SEM, TCG		
Self-control	CG	23	28.28	23.499	.000*	PAC, CG<TCG
	SEM	23	45.76			
	PAC	22	42.52			
	TCG	23	66.26			
Friendship	CG	23	29.30	14.075	.003*	CG<SEM, TCG
	SEM	23	49.37			
	PAC	22	48.39			
	TCG	23	57.00			
Whole scale	CG	23	29.35	37.390	.000*	PAC, CG<TCG
	SEM	23	52.41			
	PAC	22	38.25			
	TCG	23	69.22			
Lesson attitude	CG	23	23.78	10.891	.012*	CG<SEM, PAC, TCG
	SEM	23	49.20			
	PAC	22	53.41			
	TCG	23	51.22			
	CG	23	30.50			

*(p<.05) [SEM: Sports Education Model], [PAC: Physical Activity Card], [TCG: Traditional Children's Games], [CG: Control Group]

In Table 4, the difference scores between the pre-test and post-test scores were examined in terms of groups. Looking at the mean rank column, the highest value perception development was in the TCG group, and the least improvement was in CG. No significant difference was found in the development of the justice value in terms of groups ($p>.05$). Responsibility and self-control values of the TCG group were found to be significantly higher than those of PAC and CG students ($p<.05$). Helpfulness, friendship, and holistic values of SEM and TCG group students were found to be significantly higher than CG's ($p<.05$). At the same time, the TCG group achieved significantly higher scores than the PAC group on the whole scale ($p<.05$).

While the most improvement in the attitude scale was in the PAC group; the least improvement has been in CG. The course attitudes of the SEM, PAC, and TCG groups were found to be significantly more positive than CG ($p<.05$).

Table 5: Comparison of physical education lesson value perception and attitude difference scores by gender

Scale	Dimensions	Gender	n	Rank average	Rank sum	U	p
Value perception	Responsibility	Male	44	47.91	2108.00	950.000	.494
		Female	47	44.21	2078.00		
	Justice	Male	44	47.85	2105.50	952.500	.493
		Female	47	44.27	2080.50		
	Helpfulness	Male	44	49.72	2187.50	870.500	.191
		Female	47	42.52	1998.50		
	Self-control	Male	44	51.86	2282.00	776.000	.039*
		Female	47	40.51	1904.00		
	Friendship	Male	44	50.81	2235.50	822.500	.088
		Female	47	41.50	1950.50		
	Whole scale	Male	44	51.27	2256.00	802.000	.065
		Female	47	41.06	1930.00		
Lesson attitude	Attitude scale	Male	44	43.36	1908.00	918.000	.357
		Female	47	48.47	2278.00		

*(p<.05)

In Table 5, the comparison of the physical education lesson value perception and attitude difference scores according to the gender of the students was made. Considering the mean rank column, a significant improvement was achieved in favor of male students in the self-control dimension of the value perception scale ($p < .05$); no significant difference was found in other dimensions and overall scale ($p > .05$). In terms of the development of physical education lesson attitudes, there was no significant finding according to gender ($p > .05$).

Table 6: Value perception and attitude difference scores correlation analysis

		Value perception scale	Attitude scale
Value perception scale	r	1	.579**
	p		.000
Attitude scale	r	.579**	1
	p	.000	

*($p < .05$), **($p < .01$)

In Table 6, the relationship between students' value perceptions and attitude difference scores was examined. A positive ($r = .57$), significant relationship was found between the value perception scale and attitude scale scores ($p < .01$). When students acquire a positive perception of value in physical education lessons, they also develop a positive attitude toward the lesson.

3.2 Qualitative Results

In this section, the responses of the students to the focus group interview were examined. The answers were also supported by the teacher's diary. Students were given appropriate coding and their opinions were directly conveyed. While coding, the gender (M, F) of the experimental group (SEM, PAC, TCG, CG) in which the student was present was given at the beginning and the sequence number (1, 2) at the end. The encodings are finally listed as M-SEM-1, F-PAC-1, M-TCG-1, and F-CG-1.

At the end of the experiment process, the friendship and helpfulness values of the students developed the most. M-SEM-1 on the value of not exaggerating joy and being humble when the game is won: *"We should not humiliate the other side. I am a person who pays a lot of attention to respect. Respect was also at the forefront during the football season, which we practiced in our lesson"* he replied, referring to his character and the characteristics of SEM. M-CG-1 said, *"We can be defeated in the game. If our opponent shows excessive joy, I get sad. That's why I try not to exaggerate my joy when we win"* and emphasized the importance of playing with empathy. M-PAC-2, on the other hand, said, *"If exaggerated joy is made against me, I do not welcome it. If we rejoice excessively, our friends' hearts may break, they may be sad"* he said about the negativities that exaggerated joy will cause. F-TCG-1: *"There is winning and losing in the game. Enjoying the game is more important than joy"* she argued that the game should focus on enjoying it more than winning. M-CG-3: *"I take care of this when I play with my friends from my own school. But when I play with other schools, it may not be so"* he argued that the joy may change according to the characteristics of the opponent. The students who took part in all groups experienced joy during the activities in order to live their joy in moderation and not to offend their friends (Researcher's diary).

Although students experience winning and losing situations in physical education lessons, M-SEM-3 partially agreed with this opinion. M-SEM-3: *"We had sharing, but we were divided into teams, our exchanges were only with our team. We have not entered into cooperation with other teams"* and drew attention to the fact that sharing is limited to team members. F-TCG-1: *"We can't win a game by ourselves. For example, we pass to each other in the game and shoot players. Let's throw the ball as well as we want. If our friend in front of us doesn't keep the ball well, we can't win the game. Winning is a team job"* she argued that it would not be possible to win games without help. F-PAC-3, who approaches the concept of helping more emotionally, said, *"In general, this sharing happens between girls and girls, boys and boys. If we do not share during the lessons, our friends will not play with us. Doing sports alone is not a good thing at all. If I stay alone, I won't do sports"* she said, referring to the fact that there is cooperation between the same gender in order not to be alone.

After the practice, the students valued the act of “being able to show tolerance when teammates make mistakes during the game”. F-TCG-1 “*There will be those who make mistakes in games so that they will be winners. How will we determine the winner if people don't make mistakes? That's why it's normal to make mistakes*” and mentioned that it is normal to make mistakes like winning. F-SEM-2: “*I look at the person who made the mistake. If he is someone who is far from sports, there is no point in being too hard on him*” she stressed that imposing responsibility on someone whose skill level is insufficient will not bring benefits. M-PAC-2: “*I can accept it if there are few mistakes made in the game, but I will not accept it if the same mistake is constantly repeated*” he pointed out that the reaction to the amount of mistakes changes. M-CG-2: “*Normally, I cannot tolerate a person who makes mistakes, but the same is not true for my friends.*” It has been observed that the student has no tolerance for mistakes, but is tolerant toward his friends with whom he has emotional intimacy. The same student was exposed to the reaction of his teammates when he constantly made mistakes during the game. Students with leadership roles reduced the pressure on their friends by directing the in-game positions to different positions. All players made mistakes in the game and understood that it is normal to make mistakes. It was found that those in the SEM group were focused on success; those in the TCG and PAC groups had fun; and in the CG, playing with close friends was more valuable (Researcher's diary).

At the end of the experiment process, little improvement was seen in the students' responsibility values related to family, environment, and country. F-SEM-2: “*We took in-game tasks in our lesson. These missions were not family related*” and argued that SEM missions were limited to in-game. M-PAC-2 contributed to this view with the statement “*There were no situations involving family roles in the games we played*”. M-PAC-3: “*Environmental responsibilities should be explained in every lesson. Then we will understand these issues better*” he argued that environmental responsibilities cannot be acquired with a single course alone. The students did not avoid taking responsibility for their course practices and duly fulfilled every responsibility given. As a result of the interviews with the students, it was determined that they did not know enough about their responsibilities about their family, environment and country (Researcher's diary).

It has been determined that students show little improvement in forming equal and fair teams with equal powers. M-CG-2: “*Winning is important to us. Our success is praised by our environment*” and mentioned that playing on the same team with talented students is important for winning. M-SEM-1: He believes that there should be equal forces in the game for the sustainability of the struggle, with the statement “*If all the strong people gather in the same place, the matches end immediately without rivalry*”. F-TCG-1 said, “*Instead of winning and losing, I prefer to play with my friends who respect me. Therefore, instead of equality, we should be a team of good friends*” she is in favor of making a value-oriented choice, not a winning one. Students in the SEM group found the choices fair as they were formed in a heterogeneous way. CG, which made the competitions with same genders, wanted to get the strong player. While the teams were being formed, the equality was preserved as the players were chosen in turn. The desire to play with close friends was observed in the PAC and TCG groups (Researcher's diary).

After the experiment process, the students' cooperative working attitude improved very well. M-SEM-3: “*We have prepared a board with our team. We have done the research. Someone wrote, someone made a design. We fulfilled our roles to win*” he said, referring to the characteristics of SEM. F-TCG-1: “*When playing castled dodgeball game, if the shooter and the catcher do not play in harmony, they cannot be successful. Sometimes we are confused about which opponent to throw the ball to in the game. What we cannot see, our teammates can see more easily. That's why cooperation is essential to win*” she said, referring to the harmonious action of attack and defense. M-PAC-2: “*Those who can do the challenging activities in our lessons help those who can't. We didn't make fun of our failed friends. Thus, everyone participated in the lesson with pleasure*”, referring to peer cooperation, and a positive attitude towards the lesson developed with the disappearance of pressure. F-CG-1: “*It was very nice to play team games, to do something together*” she explained the positive feature of working together. In SEM and TCG, feelings of belonging to a group and achievement were more pronounced (Researcher's diary).

The students' "believing that physical education activities contribute to the healthy development of people" showed limited improvement. M-SEM-3: “*Sometimes I have pain in the lesson. My knee bleeds when I fall. When I am very tired, I find it difficult to wake up in the morning*”, drawing attention to fatigue and disability. F-PAC-3: “*It improves our health at events. Once we used to get out of breath at the beginning of the lesson, now we don't get*

tired even at the end of the second lesson” she said, referring to the fact that physical education activities improve the respiratory system. M-CG-2: “Most of our friends can't do push-ups. We have had so many physical education lessons, they still fail. A healthy person should do push-ups” and drew attention to the existence of students who had difficulties in physical education class. Parallel to the change in physical parameters, students showed improvement in in-class activities. Some of them started to breathe more easily, some of them were able to do more push-ups. Of course, there were students who could not improve in this process (Researcher's diary).

The attitude of the students to do sports in their leisure time has shown little improvement due to environmental factors. M-PAC-2: He mentioned the lack of playgrounds with the statement “I want to do sports, but there is no suitable sports area in our village”. M-CG-3, on the other hand, emphasized the lack of necessary sports materials by saying “We cannot find the materials for the sports we want to do”. M-SEM-3: “We were not allowed to go out due to the Covid virus. We also played phone games at home”, it is seen that students do not have the opportunity to exercise in their free time. The Covid-19 Pandemic has caused students not to develop their leisure exercise attitudes at the desired level (Researcher's diary).

4. Discussion

4.1 Value Perception

It is known that students acquire the root values in the physical education curriculum and develop behaviors in this direction (Aydın et al., 2022; Koh et al., 2017). Students internalized the values of obeying the rules, respect, responsibility, cooperation, awareness, and willingness to participate in the national feast (Yıldız & Kangalgil, 2021). Keleş & Yoncalık (2019) determined that secondary school students acquired the values of courage-leadership, responsibility, respect, friendship, justice, self-confidence, helpfulness, Atatürkism, patriotism, hard work, and empathy at a very good level in physical education and sports lessons. Similarly, Muñoz-Llerena et al., (2022) concluded that the students who follow the physical education lesson are capable of respecting individual differences, standing up against obstacles, and enabling their learning. Related studies support the findings of the study. The students experienced the joy of participating in the games in moderation, and they formed in-game friendships by sharing their feelings of winning and losing with their friends. Students do not tend to exhibit the desired behaviors in all situations. In an extremely competitive physical education lesson environment, students may disregard moral values (Albouza et al., 2022). When we look at the findings of the study, the students were similarly able to react sharply to the amount of error and the person who made the mistake. As the passion for winning increases in the game, students may exhibit undesirable behaviors.

4.1.1 The Role of Experimental Groups in the Formation of Value Perception

Responsibility, justice, benevolence, self-control, and friendship value perceptions of the students who study physical education and sports lessons with the help of the “Sports Education Model (SEM)” have improved. The development of SEM students was better than the control group. The research of Bessa et al., (2021) showed that the SEM group students had higher self-confidence compared to the students who taught with the traditional method. Reinforcement and rewarding approaches are frequently used to increase the incidence of desired behaviors in students. Ediş & Gündüz (2019) also gave the “Blue Card” award for the correct behavior of the group that he taught with SEM. In addition to the model-based course, positive developments were observed in the values of respect, tolerance, and cooperation, with the students receiving awards. SEM helps students adapt to social rules and conventions. Burgueño & Medina-Casaubón (2020) found that SEM contributes to the values of respect for social contracts, respect for rules, respect for referees and respect for the opponent. For SEM to be effective in adding value to students, students must believe and approve of ethical contracts (Harvey et al., 2011). In this direction, students participating in the study were asked to act ethically by signing ethical contract forms. In this regard, all students acted in accordance with the value of justice. Again, the students said that they wanted to “winning by deserving” as a reward for their efforts.

A development was observed in the value perceptions of the students who taught the physical education and sports lesson with the “Physical Activity Card (PAC)” course material. The development of the PAC group in self-control

and overall value perception was more limited than in the TCG group. In addition to the teacher-centered course execution, the use of PAC course material was effective in developing students' positive value perception. In the research of Temel & Kangalil (2021), primary school teachers who conducted their lessons with PAC made significant development. As a result of the study, students gained the values of obeying the rules, responsibility, respect, cooperation, awareness, and willingness to participate in the national feast. Physical activity games are very effective in the character development of students. In this direction, as a result of the students doing the activities in the course material, they experienced a significant change in the values of honesty, helpfulness, responsibility, and citizenship (Yalız Solmaz & Bayrak, 2016). Based on the findings of the study, it was understood that the use of PAC in the teaching of the lessons could be an alternative to the traditional method.

The development of the "Traditional Children's Games (TCG)" group in other value dimensions was better than the control group, except for the justice value. Traditional games are frequently used in transferring the values of a culture to future generations (Gelislı & Yazıcı, 2015; Hidayati, 2020). When the TCG group played traditional games, they liked the lesson activities because they could communicate effectively with their environment. The students told their parents about the games they played in the physical education class and had a pleasant conversation with their parents about the game. This case will contribute to the formation of cultural unity between the parent and the child. Damayani et al., (2019) concluded that students playing traditional games in Indonesia gain values such as honesty, leadership, cooperation, and awareness. Healthy character development is provided for students who gain basic moral values through traditional games (Dewi et al., 2020; Lestari & Prima, 2017). Different traditional games develop different value judgments of students. Bozkurt & Sözer (2017) found that Turkish children effectively acquire values such as responsibility, cooperation, self-confidence, and respect by playing games such as handkerchief snatch, castled dodgeball game, seven tiles, and gold bracelets. TCG students avoided negative behaviors by acquiring basic values. Especially the students, who put winning in the background, attributed meaning to the values rather than playing in the strong team in the matchups.

4.1.2 Perception of Value and Gender

Male and female students developed similar value perceptions in the dimensions of responsibility, justice, helpfulness, and friendship. Carlson & Hastie (1997) also found similarities in leadership, cooperation, and sportsmanship values of male and female students after physical education lessons with SEM. In the experimental studies applied in the literature, it was concluded that male and female students developed similar value perceptions (Büyükköse et al., 2016; Engin & Uygun, 2014). This shows that intervention approaches are fit for purpose. However, the value perceptions of male and female students may differ. It was concluded that in physical education lessons, female students were better in respect, national culture and togetherness, awareness, and healthy life values (Işıkgöz et al., 2018). Again, female students' perceptions of responsibility (Zekioğlu et al., 2020) and justice (Kapan & Gökçe, 2016) are quite high. The PAC group participating in the study also stated that they cooperate with same gender friends in the game. The female students attempted to help each other according to the characteristics of the game. This situation was also reflected outside the game, and an increase was observed in the cooperation behaviors of the students. Another result of the study is that male students showed better improvement in self-control value than female. Yıldız & Özgül (2017) found that male students are more inclined to sports than female students. The self-control values of male students have improved better with their tendency to sports (Aydoğan et al., 2016). The male students who participated in the research argued that the game of football is specific to male. The students were close to the idea that girls cannot play football like a boy no matter how hard they try. In this respect, it was determined that the students could not reach the desired level in terms of education.

4.2 Physical Education Lesson Attitude

The attitudes of secondary school students toward physical education lessons are significantly higher than other formal education steps (Sertkahya & Üren, 2021; Taşdemir et al., 2021). The results obtained in the literature are similar to the results of the study. In the study of Özsarı & Öztürk Çelik (2021), the attitudes towards the physical education lesson of the students whose social relations got weak were found to be in medium level. This result showed that social relations are an important variable that predicts physical education course attitudes. Based on

the importance of social relations, the students who participated in the study stated that they won the games by helping each other and that they enjoyed playing with their close friends. In addition to social relations, it is known that students with good academic achievement have positive physical education course attitudes (Subramaniam & Silverman, 2007). The students, who stated that they did not have low grades in the physical education lesson, stated that they participated in the lesson with pleasure. Students with good body image (Kamtsios & Digelidis, 2008) and skill level (Bernstein et al., 2011) enjoy competitive physical education lessons. In line with the literature, the student group, who participated in the competitive games, adopted winning by struggling. To win by working hard was found valuable.

4.2.1 The Role of Experimental Groups in the Formation of Physical Education Lesson Attitude

In the study, the attitudes of the students who participated in the physical education lesson with the “Sports Education Model (SEM)” are higher than the students who teach with the traditional method. When the lesson is taught with differentiated lesson contents, students develop positive attitudes toward physical education lesson (Özbal et al., 2019). Thus, SEM emerges as an important supporter in physical education lessons (Doydu et al., 2013). Wallhead et al. (2013) followed the progress of the students who participated in the physical education lesson through SEM for 4 seasons. Students received training in ground hockey, basketball, volleyball and handball during the seasons. At the end of the study, the students who participated in SEM for a long time enjoyed their sports experiences by improving their social bonds with their peers. Luna et al., (2019) found that at the end of the SEM season, students' subjective well-being levels were high and they were able to control their emotions. Students who were able to regulate their emotions enjoyed the course content. Similarly, in the findings of the study, there was an increase in the course attitudes of the members of the SEM group, as they experienced the feeling of being a part of a group and achieving. A positive attitude toward the course enables students to gain school belonging (Filiz, 2018). Students who started face-to-face education after the Covid-19 Pandemic and participated in physical education lesson activities stated that they enjoyed school and physical education lessons.

With the help of the “Physical Activity Card (PAC)”, the attitude of the group participating in the physical education lesson towards the lesson was measured at a very good level. The PAC group was the group that enjoyed the physical education lesson the most. Atlı et al., (2018) examined the results of conducting the physical education lesson with PAC in addition to the peer teaching model. At the end of the process, the course attitudes of secondary school students increased. At the same time, students found the lesson fun, understandable and increasing participation. The use of PAC as an alternative to the traditional method allows students to develop positive feelings and academic motivation towards the lesson (Ağırtaş, 2017; Öztürk, 2019). So much so that the PAC group in the study stated that they wanted to learn new information and receive feedback from their teacher. Students, whose needs were met, had the opportunity to play games with their close friends and developed a positive attitude toward the lesson.

The physical education lesson attitude of the group that played “Traditional Children's Games (TCG)” developed like the other experimental groups. Istimahayu (2020) found that the national Lompat Tali game gave students a cooperative working attitude. In their research, Syihabbudin & Umami (2021) concluded that the traditional game called Gobak Sodor gave students an attitude of tolerance. Romanvican et al., (2020) also found that the traditional game called Engklek gives an attitude of tolerance. Traditional games are frequently used to develop students' moral values and attitudes. TCG members showed interest in traditional games played by their parents. TCG group enjoyed chatting about traditional games with their parents and friends.

4.2.2 Physical Education Lesson Attitude and Gender

There was no significant gender difference in the development of the course attitudes of the students who are subject to physical education and sports courses with different course contents. The results of the research conducted with secondary school students in the literature also confirm the findings of the study (Gürbüz & Özkan, 2012; Keskin et al., 2016; Kılıç & Çimen, 2018). When the lesson activities are designed with different contents, male and female students enjoy the physical education lesson. It is also a known fact that male students' participation in physical education classes is high (Yıldız & Özgül, 2017). Male students with high participation

in lesson activities had more positive lesson attitudes compared to female students (Cengiz et al., 2018; Kumar & Singh, 2011). Today, female students' participation in sports has increased significantly. With the intense participation in the lesson, female students showed more positive attitudes toward the physical education lesson (Taşdemir et al., 2021). Positive results are obtained when the lesson is conducted with different contents for male and female students.

4.3 Value and Attitude Relationship

It was observed that when students' beliefs about root values increased, their attitudes toward physical education and sports lessons increased. Looking at the literature, it was seen that there were positive and significant relationships between students' social life skills, competence, and course attitude (Balyan et al., 2012; Keskin et al., 2016). Physical education lesson is an important argument for strengthening friendship bonds and developing positive attitudes based on cooperation between students (Gülây et al., 2010; Özbal et al., 2019). As the human values of the students develop, they develop a positive attitude and environmental sensitivity towards their environment (Eser, 2012). When students' values and attitudes toward a subject are significantly high, it emerges as behavior (Yılmaz & Aytekin, 2020). People's values predict their attitudes and behaviors. The high values and attitudes developed in the physical education lesson are promising.

5. Conclusion and Recommendations

5.1 Conclusion

As a result of the research, the value perceptions and attitudes of the students participating in the physical education lesson have developed. During the experiment, the highest development was seen in the value of friendship, while the highest score was obtained in the value of responsibility. TCG and SEM were at the forefront in the development of value perception, and PAC and TCG groups in the development of attitude. Females and males showed similar development. When the qualitative findings are examined; Students who behaved respectfully towards their friends during the game did not experience excessive joy. Emotions such as winning and losing the in the SEM group are experienced within the same team; The PAC group, on the other hand, stated that these feelings were experienced among the same gender friends. Errors in the game are considered normal according to the amount of mistakes made. In physical education lessons, students think that family, environment, and country values are not directly emphasized. The students did not make good progress in behaving equally while forming teams. The fact that their sense of winning was at the forefront and that they wanted to play in the same team with their close friends. The groups explained the good level of cooperation attitudes differently. SEM group students associated their high cooperation attitudes with the division of labor in their SEM group roles; TCG group students with fulfilling their in-game roles in winning the game; PAC students with helping their friends who have difficulties in doing PAC group activities; CG explained that team games allow sharing. Due to the fatigue, disability or weakness experienced in the lessons, the students did not agree that the physical education lesson improves health.

5.2 Recommendations

Based on the results of the study, it is recommended that teachers who conduct physical education classes benefit from SEM, TCG, and PAC in their lessons. In addition to the contents of this course, the effects of individual and social responsibility model and tactical game model approaches can be examined. It is recommended that similar studies be conducted on different sample groups.

References

Ağırtaş, R. (2017). *Ortaokullarda beden eğitimi ve spor dersinde akran eğitiminin etkililiği fiziksel etkinlik kartlarının kullanımı (Elazığ il örneği)* [The effectiveness of peer education in physical education and sports

- lessons in secondary schools: Use of physical activity cards (Elazığ province example)]. Unpublished Master Thesis. Firat University Institute of Health Sciences, Elazığ.
- Albouza, Y., Chazaud, P., & Wach, M. (2022). Athletic identity, values and self-regulatory efficacy governing hypercompetitive attitudes. *Psychology of Sport and Exercise*, 58, 1-9. <https://doi.org/10.1016/j.psychsport.2021.102079>
- Anwar, A. S., Hendrayana, Y., & Ma'mun, A. (2019). *The development of responsibility and leadership through esport education model*. 4th International Conference on Sport Science, Health, and Physical Education (ICSSPE) Atlantis Press.
- Atlı, K., Mirzeoğlu, A. D., & Erkut, O. (2018). Akran öğretim modeli ve fiziksel etkinlik kartları uygulamalarına ilişkin öğrenci görüşleri [The student views about applications of the peer teaching model and physical activity cards in secondary school]. *Türkiye Klinikleri Spor Bilimleri*, 10(3), 97-115. <https://doi.org/10.5336/sportsci.2018-60112>
- Aydın, E., Temel, A., & Kangalgil, M. (2022). Geçmişten günümüze ortaöğretim beden eğitimi ve spor dersi öğretim programlarının incelenmesi [Investigation of the secondary physical education and sports lesson curriculum from past to present]. *Journal of Global Sport and Education Research*, 5(1), 99-117. <https://doi.org/10.55142/jogser.1113312>
- Aydoğan, H., Bardakçı, S., Arslan, E., Civelek, H., & İşyar, Z. (2016). İlkokul 4. sınıf ve ortaokul 5. sınıf öğrencilerinin beden eğitimi dersine yönelik tutum ve öz-yeterliklerinin incelenmesi [Examining of self-efficacies and attitudes of 4th grades primary school and 5th grades middle school students towards physical education course]. *CBÜ Beden Eğitimi ve Spor Bilimleri Dergisi*, 11(2), 100-119. <https://dergipark.org.tr/pub/cbubesbd/issue/32244/357859>
- Balyan, M., Balyan, K. Y., & Kiremitçi, O. (2012). Farklı sportif etkinliklerin ilköğretim 2. kademe öğrencilerinin beden eğitimi dersine yönelik tutum, sosyal beceri ve öz yeterlik düzeylerine etkisi [Effects of different sporting events on 2nd level elementary school students' attitude towards physical education and sport lessons, social skills and self efficacy]. *Selçuk Üniversitesi Beden Eğitimi ve Spor Bilimleri Dergisi*, 14(2), 196-201. <https://search.trdizin.gov.tr/yayin/detay/148944/>
- Basiaga-Pasternak, J., Szafraniec, Ł., Jaworski, J., & Ambroży, T. (2020). Aggression in competitive and non-competitive combat sports athletes. *Ido Movement for Culture. Journal of Martial Arts Anthropology*, 20(2), 17-23. <https://doi.org/10.14589/ido.20.2.3>
- Bernstein, E., Phillips, S. R., & Silverman, S. (2011). Attitudes and perceptions of middle school students toward competitive activities in physical education. *Journal of Teaching in Physical Education*, 30(1), 69-83. <https://doi.org/10.1123/jtpe.30.1.69>
- Bessa, C., Hastie, P., Rosado, A., & Mesquita, I. (2021). Sport education and traditional teaching: influence on students' empowerment and self-confidence in high school physical education classes. *Sustainability*, 13(2), 578. <https://doi.org/10.3390/su13020578>
- Bozkurt, E., & Sözer, M. A. (2017). Çocuk oyunları ile değerler eğitimi [Values education with children's games]. *The Journal of Academic Social Sciences*, 55, 295-323. <http://dx.doi.org/10.16992/ASOS.12844>
- Burgueño, R., & Medina-Casabón, J. (2020). Sport education and sportsmanship orientations: An intervention in high school students. *International Journal of Environmental Research and Public Health*. 17(3), 837. <https://doi.org/10.3390/ijerph17030837>
- Büyükköse, A., Yıldırım Orhan, Ş., & Şeren, M. (2016). Amatör müzik eğitiminin, ortaokul öğrencilerinin problem çözme becerilerine etkisi (Kırıkkale ili örneği) [Impacts of amateur music education on the problem solving skills of secondary school students (sample of kırıkale)]. *Turkish Studies*, 11(21), 565-582. <http://dx.doi.org/10.7827/TurkishStudies.9914>
- Büyüköztürk, Ş., Çakmak, E. K., Akgün, Ö. E., Karadeniz, Ş., & Demirel, F. (2020). *Eğitimde bilimsel araştırma yöntemleri [Scientific research methods in education]*. 28. Edition. Ankara: Pegem Akademi.
- Can, A. (2019). *Spss ile bilimsel araştırma sürecinde nicel veri analizi [Quantitative data analysis in the scientific research process with SPSS]*. 8. Edition. Ankara: Pegem Akademi.
- Carlson, T. B., & Hastie, P. A. (1997). The student social system within sport education. *Journal of Teaching in Physical Education*, 16(2), 176-195. <https://psycnet.apa.org/record/1997-07720-002>
- Cengiz, Ö., Kılıç, M. A., & Soylu, Y. (2018). Ortaokul öğrencilerinin beden eğitimi dersine yönelik tutumlarının incelenmesi [Investigation of the attitudes of secondary school students on physical education]. *Sosyal Bilimler Akademi Dergisi*, 1(2), 141-149. <https://doi.org/10.38004/sobad.480851>
- Creswell, J. W. (2020). *Eğitim araştırmaları nicel ve nitel araştırmanın planlanması, yürütülmesi ve değerlendirilmesi [Educational research: Planning, conducting, and evaluating quantitative and qualitative research]*. 3rd Edition. Ankara: Edam. (Translation Editor: Ekşi, H.).
- Çakmak Yıldızhan, Y., & Çağlayan, G. (2019). Öğrencilerin beden eğitimi dersine yönelik tutumları ile sosyal zekâ düzeyleri arasındaki ilişkinin incelenmesi [Investigating the relationship between attitudes of students towards physical education lesson and their social intelligence levels]. *Gazi Beden Eğitimi ve Spor Bilimleri Dergisi*, 24(4), 227-240. <https://dergipark.org.tr/tr/pub/gbesbd/issue/49196/568424>

- Çimen, S., Öztürk, F., Özcan, A. F., Özkan, A., & Balkaş, S. R. (2016). Değerler eğitime yönelik kültürler arası karşılaştırmalı bir araştırma: Almanya, İsveç, güney kore ve malezya örneği [An inter cultural contrastive study on the education of values: Samples from germany, sweden, south korea and malaysia]. *Akademik Sosyal Araştırmalar Dergisi*, 4(30), 629-649. <https://doi.org/10.16992/ASOS.1266>
- Damayani, N. A., Saepudin, E., Budiono, A., & Rachmawati, T. S. (2019). Preservation of traditional game values as educational tourism assets in sindangkerta district, indonesia. *Journal of Environmental Management and Tourism*, 4(36), 735-745. [https://doi.org/10.14505/jemt.v10.4\(36\).04](https://doi.org/10.14505/jemt.v10.4(36).04)
- Demirhan, G., & Altay, F. (2001). Lise birinci sınıf öğrencilerinin beden eğitimi ve spora ilişkin tutum ölçeği II [Attitude scale of high school first graders towards physical education and sport II]. *Spor Bilimleri Dergisi*, 12(2), 9-20. <https://dergipark.org.tr/tr/pub/sbd/issue/16421/171534>
- Dewi, N. R., Saputri, E., Nurkhalisa, S., & Akhlis, I. (2020). The effectiveness of multicultural education through traditional games-based inquiry toward improving student scientific attitude. *Journal of Physics: Conference Series*. 1567 042051. <https://doi.org/10.1088/1742-6596/1567/4/042051>
- Dilmaç, B. (2002). *İnsanca değerler eğitimi [Humane values education]*. 1st Edition. Ankara: Nobel Publication Distribution.
- Doydu, İ., Çelen, A., & Çoknaz, H. (2013). Spor eğitimi modeli'nin öğrencilerin beden eğitimi ve spora karşı tutumuna etkisi [The effect of the sports education model on the attitudes of students towards physical education and sports]. *e-Uluslararası Eğitim Araştırmaları Dergisi*, 4(2), 99-110. <http://www.e-ijer.com/tr/pub/issue/8022/105386>
- Ediş, M., & Gündüz, N. (2019). Spor eğitim modeliyle işlenen futbol etkinliğinde mavi kart uygulaması öğretmen ve öğrenci görüşleri [Blue card application in soccer event with sport training model: teacher and student opinions]. *SPORMETRE Beden Eğitimi ve Spor Bilimleri Dergisi*, 17(4), 158-171. <https://doi.org/10.33689/spormetre.576747>
- Engin, G., & Uygun, S. (2014). The effectiveness of language arts and physical education curriculum integrated with values education program/Türkçe ve beden eğitimi öğretim programları ile bütünleştirilmiş değerler eğitimi programının etkililiği. *Eğitimde Kuram ve Uygulama*, 10(4), 942-969. <https://dergipark.org.tr/tr/pub/eku/issue/5462/74132>
- Esen, E., & Mirzeoğlu, A. D. (2018). Beden eğitimi ve spor derslerinde kullanılan fiziksel etkinlik kartlarının akademik öğrenme zamanına etkisi [The effects of physical activity cards used in physical education courses on academic learning time]. *Kastamonu Eğitim Dergisi*, 26(4), 1091-1100. <https://doi.org/10.24106/kefdergi.433411>
- Eser, A. (2012). *İlköğretim ikinci kademe öğrencilerinin insani değerler düzeyleri ile çevresel tutumları arasındaki ilişki [The relationship between the levels of human values and environmental attitudes of secondary school students]*. Unpublished Master Thesis. Yeditepe University Institute of Social Sciences, İstanbul.
- Fang, Y., Chen, K., & Huang, Y. (2016). Emotional reactions of different interface formats: comparing digital and traditional board games. *Advances in Mechanical Engineering*, 8(3), 1-8. <https://doi.org/10.1177/1687814016641902>
- Filiz, M. A. (2018). *Ortaokul çağındaki çocukların beden eğitimi ve spor dersine yönelik tutumları ile okula bağlanma düzeyleri arasındaki ilişkinin incelenmesi [Examining the relationship between secondary school children's attitudes towards physical education and sports lessons and their level of attachment to school]*. Unpublished Master Thesis. Marmara University Institute of Education Sciences, İstanbul.
- Gelisli, Y., & Yazıcı, E. (2015). A study into traditional child games played in konya region in terms of development fields of children. *Procedia - Social and Behavioral Sciences*, 197, 1859-1865. <https://doi.org/10.1016/j.sbspro.2015.07.247>
- Gülay, O., Mirzeoğlu, D., & Çelebi, M. (2010). Effects of cooperative games on social skill levels and attitudes toward physical education. *Eurasian Journal of Educational Research (EJER)*, 10(40), 77-92. https://ejer.com.tr/wp-content/uploads/2021/01/ejer_2010_issue_40.pdf
- Güngör, E. (2018). *Doktora, doçentlik, profesörlük tezleri [PhD, associate professorship, professorship theses]*. 1st Edition. İstanbul: Yer-Su Publishing.
- Gürbüz, A., & Özkan, H. (2012). Determining the attitude of secondary school students towards physical education and sport lesson (Muğla sample). *Pamukkale Journal of Sport Sciences*, 3(2), 78-89. <https://dergipark.org.tr/tr/pub/psbd/issue/20577/219231>
- Harvey, S., Kirk, D., & O'Donovan, T. M. (2011). Sport education as a pedagogical application for ethical development in physical education and youth sport. *Sport, Education and Society*, 19(1), 41-62. <https://doi.org/10.1080/13573322.2011.624594>
- Hidayati, N. N. (2020). Indonesian traditional games: A way to implant character education in children and preserve indonesian local wisdom. *Istawa: Jurnal Pendidikan Islam*, 5(1), 81-101. <https://doi.org/10.24269/ijpi.v5i1.2475>
- Hünük, D., & Saraç Oğuzhan, N. (2017). *Spor eğitim modeli (sem), model temelli beden eğitimi öğretimi [Sports education model (sem), model-based physical education teaching]*. 1st Edition. (Editor: Mirzeoğlu, A. D.) Ankara: Spor Publishing House and Bookstore.

- Istirahayu, L. (2020). Enhancement of students cooperation attitude through traditional game of lompat tali. *Journal of Education, Teaching and Learning*, 5(2), 249-252. <https://www.learntechlib.org/p/218678/>
- Işıkgöz, M. E., Esentaş, M., & Işıkgöz, M. (2018). Ortaokul öğrencilerinin beden eğitimi ve spor dersine yönelik değer düzeylerinin çeşitli değişkenler açısından incelenmesi: Batman il örneği [Examination of value levels of secondary school students towards physical education and sports lesson in terms of various variables: Batman province example]. *International Journal of Social Sciences and Education Research*, 4(4), 661-676. <https://doi.org/10.24289/ijsser.464221>
- İnce, M. L., Cengiz, C., Ebem, Z., Hünük, D., Kangalgil, M., Saçlı, F., Saraç, L., & Yapar, A. (2010). *Spor eğitimi modeli. Öğretim modelleri ve güncel araştırmalar [Sports training model. Teaching models and current research]*. Ankara: Spor Publishing House and Bookstore.
- İnceoğlu, M. (2011). *Tutum algı iletişim [Attitude perception communication]*. 6th Edition. Ankara: Siyasal Bookstore.
- Kağıtçıbaşı, Ç., & Cemalcılar, Z. (2020). *Dünden bugüne insan ve insanlar sosyal psikolojiye giriş [Human and people from past to present introduction to social psychology]*. 23. Edition. İstanbul: Evrim Publishing House.
- Kantsios, S., & Digelidis, N. (2008). Physical activity levels, exercise attitudes, self-perceptions and bmi type of 11 to 12-year-old children. *Journal of Child Health Care*, 12(3), 232-240. <https://doi.org/10.1177/1367493508092510>
- Kangalgil, M., Hünük, D., & Demirhan, G. (2006). İlköğretim, lise ve üniversite öğrencilerinin beden eğitimi ve spora ilişkin tutumlarının karşılaştırılması [Comparison of elementary school, high school and university students' attitudes toward physical education and sport]. *Spor Bilimleri Dergisi*, 17(2), 48-57. <https://dergipark.org.tr/tr/pub/sbd/issue/16401/171457>
- Kangalgil, M., Özgül, F., Temel, A., Kural, T., & Karagöz, Y. (2021). Beden eğitimi ve spor dersi değerler eğitimi ölçeği (besddeö) geçerlik ve güvenirlik çalışması [Validity and reliability study of physical education and sports lesson values education scale (peslves)]. *Beden Eğitimi ve Spor Bilimleri Dergisi*, 15(1), 70-80. <https://dergipark.org.tr/tr/pub/bsd/issue/60685/855962>
- Kapan, E., & Gökçe, N. (2016). 7. sınıf öğrencilerinin sosyal bilgiler dersindeki değerleri kazanma durumlarının incelenmesi [The study of 7th grade students' gain values situations in social studies course]. *Kesit Akademi Dergisi*, (6), 84-105. <https://dergipark.org.tr/tr/pub/kesitakademi/issue/59840/864752>
- Keleş, M., & Yoncalık, O. (2019). Beden eğitimi ve spor dersi ve ilköğretim sekizinci sınıf öğrencilerinde değerler eğitimi [Physical education and sport lesson and values education in the 8th grade secondary school students]. *Beden Eğitimi ve Spor Bilimleri Dergisi*, 13(3), 230-237. <https://dergipark.org.tr/tr/pub/bsd/issue/50922/664493>
- Kenan, S. (2009). Modern eğitimde kaybolan nokta: Değerler eğitimi [The missing dimension of modern education: Values education]. *Kuram ve Uygulamada Eğitim Bilimleri*, 9(1), 259-295. <https://search.trdizin.gov.tr/yayin/detay/90078/>
- Keskin, N., Öncü, E., & Küçük, K. S. (2016). Ortaokul öğrencilerinin beden eğitimi dersine yönelik tutum ve öz-yeterlilikleri [Attitudes and self-efficacy of middle school students toward physical education classes]. *SPORMETRE Beden Eğitimi ve Spor Bilimleri Dergisi*, 14(1), 93-107. https://doi.org/10.1501/Sporm_0000000287
- Kılıç, T., & Çimen, P. N. (2018). Ortaokul ve lise öğrencilerinin beden eğitimi ve spor dersine karşı tutumlarının incelenmesi [Examining the attitudes of the secondary school and high school students towards physical education and sports lesson]. *Akdeniz Spor Bilimleri Dergisi*, 1(1), 1-13. <https://dergipark.org.tr/tr/pub/asbid/issue/40817/442686>
- Koh, K. T., Camiré, M., Lim Regina, S. H., & Soon, W. S. (2017). Implementation of a values training program in physical education and sport: A follow-up study. *Physical Education and Sport Pedagogy*, 22(2), 197-211. <https://doi.org/10.1080/17408989.2016.1165194>
- Kumar, A., & Singh, S. (2011). Attitudes toward physical education and sports of secondary school students of Delhi. *GYANODAYA-The Journal of Progressive Education*, 4(1), 21-28. <https://www.indianjournals.com/ijor.aspx?target=ijor:gjpe&volume=4&issue=1&article=004>
- Kuter, F. Ö., & Kuter, M. (2012). Beden eğitimi ve spor yoluyla değerler eğitimi [Moral education through physical education and sports]. *Eğitim ve İnsani Bilimler Dergisi: Teori ve Uygulama*, 3(6), 75-94. <https://dergipark.org.tr/tr/pub/eibd/issue/22679/242186>
- Lestari, P. I., & Prima, E. (2017). The implementation of traditional games to improve the social emotional early childhood. *Journal of Educational Science and Technology*, 3(3), 178-184. <https://doi.org/10.26858/est.v3i3.4212>
- Lestaringrum, A. (2017). The effects of traditional game 'congkak' and self-confidence towards logical mathematical intelligence of 5-6 years children. *Journal Ilmiah Pendidikan Prasekolah dan Sekolah Awal*, 3(1), 13-22. <https://doi.org/10.24269/jin.v3n1.2018.pp13-22>
- Lickona, T. (1992). *Educating form character how our school can teach respect and responsibility*. New York-Toronto-London-Sidney-Auckland: Bantam Books.

- Liu, W., Wang, J. & Xu, F. (2008). Middle school children's attitudes toward physical activity. *The ICHPER-SD Journal of Research International Council for Health, Physical Education, Recreation, Sport & Dance*, 3(2), 78-85.
- Lovat, T. (2011). Values education and holistic learning. *International Journal of Educational Research*, 50(3), 148-152. <https://doi.org/10.1016/j.ijer.2011.07.007>
- Luna, P., Guerrero, J., & Cejudo, J. (2019). Improving adolescents' subjective well-being, trait emotional intelligence and social anxiety through a programme based on the sport education model. *International Journal of Environmental Research and Public Health*, 16(10), 1821. <https://doi.org/10.3390/ijerph16101821>
- Ministry of National Education [MNE]. (2018). *Beden eğitimi ve spor dersi öğretim programı ortaokul 5, 6, 7. ve 8. sınıflar* [Physical education and sports lesson curriculum for middle school 5th, 6th, 7th and 8th grades]. TTKB, Ankara. <http://mufredat.meb.gov.tr/ProgramDetay.aspx?PID=324>
- Mirzeoğlu, A. D. (2017). *Temel kavramlar. Model temelli beden eğitimi öğretimi* [Basic concept, Model-based physical education teaching]. 1st. Edition. (Editor: Mirzeoğlu, A. D.) Ankara: Spor Publishing House and Bookstore.
- Muñoz-Llerena, A., Núñez Pedrero, M., Flores-Aguilar, G., & López-Meneses, E. (2022). Design of a methodological intervention for developing respect, inclusion and equality in physical education. *Sustainability*, 14(1), 390. <https://doi.org/10.3390/su14010390>
- Özbal, A., Sağlam, M., & Cavkaytar, S. (2019). Implementing differentiated instruction approach in physical training and sports lesson. *Eğitim ve Bilim*, 44(200), 291-312. <http://dx.doi.org/10.15390/EB.2019.8085>
- Özsarı, A., & Öztürk Çelik, D. (2021). Farklı okullarda eğitim gören öğrencilerin beden eğitimi ve spora ilişkin tutumları ile sosyal becerileri arasındaki ilişkinin incelenmesi [Investigation of the relationship between the attitude towards physical education and sports and social skills of students studying in different schools]. *Çanakkale Onsekiz Mart Üniversitesi Spor Bilimleri Dergisi*, 4(2), 1-14. <https://dergipark.org.tr/pub/comusbd/issue/64606/948121>
- Öztürk, Y. (2019). *Fiziksel etkinlik kartlarının 5. sınıf öğrencileri üzerindeki etkilerinin incelenmesi* [Examining the effects of physical activity cards on 5th grade students]. Unpublished Master Thesis. Marmara University Institute of Educational Sciences, İstanbul.
- Romanvican, M. G., Mundilarto, Supahar, & Istiyono, E. (2020). Development learning media based traditional games engklek for achievements mastery of the material and tolerance attitude. *Journal of Physics: Conference Series*. 1440 012044. <https://doi.org/10.1088/1742-6596/1440/1/012044>
- Sağın, A. E., & Karabulut, Ö. (2019). Beden eğitimi ve spor dersine yönelik ortaokul öğrencilerinin değer düzeylerinin incelenmesi (Bağcılar ilçesi örneği) [Investigation of value levels of secondary school students for physical education and sport (Sample of bağcılar district)]. *International Journal of Mountaineering and Climbing*, 2(2), 27-34. <https://doi.org/10.36415/dagcilik.644204>
- Sertkahya, M., & Üren, H. (2021). İlköğretim 2. kademe ve ortaöğretim öğrencilerinin beden eğitimi dersine karşı tutumlarının çeşitli değişkenler açısından incelenmesi: Kemalpaşa ilçesi örneği [Examining the attitudes of primary, secondary and secondary school students towards physical education lesson in terms of various variables: The case of kemalpaşa]. *Uluslararası Güncel Eğitim Araştırmaları Dergisi*, 7(1), 166-183. <https://dergipark.org.tr/pub/intjces/issue/64208/839605>
- Sivrikaya, Ö., & Kılçık, M. (2017). İlköğretim okulları 2. kademe öğrencilerinin beden eğitimi ve spor dersine ilişkin tutumlarının belirlenmesi (Düzce örneği) [Determination of the secondary school students' attitudes with the course of physical education and sports (Düzce sample)]. *CBÜ Beden Eğitimi ve Spor Bilimleri Dergisi*, 12(1), 1-15. <https://dergipark.org.tr/pub/cbubesbd/issue/30403/327972>
- Subramaniam, P. R., & Silverman, S. (2007). Middle school students' attitudes toward physical education. *Teaching and Teacher Education*, 23(5), 602-611. <https://doi.org/10.1016/j.tate.2007.02.003>
- Sümbüllü, Y. Z., & Altınışık, M. E. (2016). Geleneksel çocuk oyunlarının değerler eğitimi açısından önemi [The importance of traditional children's games in terms of values education]. *Erzurum Teknik Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, 1(2), 73-85. <https://dergipark.org.tr/pub/etusbed/issue/35461/393987>
- Syihabbudin, M., & Umami, K. N. (2020). Establishment of children's tolerance attitude with the traditional gobak sodor approach. *Pedagogik, Education, Islamic, Teaching, Learning*, 8(1), 260-291. <https://doi.org/10.33650/pjp.v8i1.1885>
- Taşdemir, N., Bayram, M., & Şam, C. T. (2021). Öğrencilerin beden eğitimi ve spor dersine yönelik tutumlarının çeşitli değişkenler açısından incelenmesi (Ağrı ili hamur ilçesi örneği) [A study of students' attitude towards physical training and sports lesson in terms of several variables (Examples from hamur, ağrı)]. *Beden Eğitimi ve Spor Bilimleri Dergisi*, 23(4), 131-146. <https://dergipark.org.tr/pub/ataunibesyo/issue/67477/1015485>
- Tavşancıl, E. (2018). *Tutumların ölçülmesi ve spss ile veri analizi* [Measuring attitudes and data analysis with spss]. 6th Edition. Ankara: Nobel Academic Publishing.
- Temel, A., & Kangalgil, M. (2021). Oyun ve fizikî etkinlikler dersi öğretim programı kazanımlarının gerçekleşmesine ilişkin sınıf öğretmenlerinin görüşleri [The opinions of primary school teachers about

- applying the achievements of teaching programme of the subject “game and physical activities”]. *Milli Eğitim Dergisi*, 50(229), 445-462. <https://dergipark.org.tr/tr/pub/milliegitim/issue/60215/874865>
- Tepe, H. (2002). *Değerler ve değer bilgisi. Bilgi ve değer sempozyum bildirileri [Values and knowledge of value. Information and value symposium papers]*. (Editor: Yalçın, Y.). 1st Edition. Ankara: Vadi Publications.
- Wallhead, T. L., Garn, A. C., & Vidoni, C. (2013). Sport Education and social goals in physical education: Relationships with enjoyment, relatedness, and leisure-time physical activity. *Physical Education and Sport Pedagogy*, 18(4), 427-441. <https://doi.org/10.1080/17408989.2012.690377>
- Yalız Solmaz, D., & Bayrak, C. (2016). Beden eğitimi dersindeki fiziksel etkinlik oyunlarının ilköğretim öğrencilerinin karakter gelişimleri üzerindeki etkisi [Affect on character development of elementary students of physical activity games within physical education lessons]. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi*, 31(4), 644-656. <https://doi.org/10.16986/HUJE.2016015695>
- Yıldırım, A., & Şimşek, H. (2018). *Sosyal bilimlerde nitel araştırma yöntemleri [Qualitative research methods in the social sciences]*. 6th Edition. Ankara: Seçkin Publishing.
- Yıldız, R., & Kangalgil, M. (2021). Beden eğitimi ve spor öğretmenlerinin ilköğretim ikinci kademe beden eğitimi ve spor dersi kazanımlarının gerçekleştirilmesine ilişkin görüşleri [Views of physical education and sports teachers on primary education second stage physical education and sports course achievements]. *OPUS International Journal of Society Researches*, 18(40), 2146-2167. <https://doi.org/10.26466/opus.856590>
- Yıldız, R., & Özgül, F. (2017). Investigation of the effects of physical activity levels on sport behavior (fair-play) of the students participating in school sports at different branches (Sivas city example). *International Journal of Sports and Physical Education (IJSPE)*, 3(4), 40-46. <http://dx.doi.org/10.20431/2454-6380.0304007>
- Yılmaz, M. K., & Aytakin, R. İ. (2020). Genişletilmiş değer-tutum- davranış modeli bağlamında yeşil ürün satın alma davranışının incelenmesi [Investigation of green buying behavior in the context of an extended value-attitude-behavior model]. *Hitit Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, 13(2), 439-465. <https://doi.org/10.17218/hititsosbil.786220>
- Zekioglu, A., Gürsoy, S., Gürsoy, R., & Çamlıyer, H. (2020). Ortaokul öğrencilerinin beden eğitimi ve spor dersine yönelik tutumları ile öğrenmeye karşı sorumluluk davranışları arasındaki ilişkinin incelenmesi [Investigation of the relationship between the attitudes of secondary school students towards physical education and sports class and responsibility behaviors towards learning]. *Humanistic Perspective*, 2(1), 9-17. <https://dergipark.org.tr/tr/pub/hp/issue/52419/674214>



Opinions of Arabic Prep Class Students on the use of YouTube in Teaching Arabic

Gürkan Dağbaşı¹, Yasin Murat Demir¹, Murat Özcan¹

¹ Ankara Hacı Bayram Veli University, Ankara, Turkey.

Correspondence: Gürkan Dağbaşı, Ankara Hacı Bayram Veli University, Ankara, Turkey. Tel: +905358671585.
Email: gurkan.dagbasi@hbv.edu.tr

Abstract

Today, technology has become a concept that expresses a serious need in terms of individual and society, especially in the last period of the global epidemic. Technological developments, which are closely followed all over the world, contribute to the improvement of communication between people at the same rate, and as a result of this information transfer process, individuals find the opportunity to express their feelings and thoughts on various media platforms. The use of this platform, which is called social media, has the feature of responding to the social needs of crowded masses consisting of all existing cultures and segments. Because of these reasons and needs, social media has a very important place in human life with its feature that brings together large masses. Foreign language learning activities have also developed through social media, and many foreign language lessons have become common on Youtube. Among these languages is Arabic, which is spoken by approximately 450 million people in the world. Arabic is one of the most widely taught foreign languages in our country. In this context, it is clear that social media, like other technologies, creates a suitable basis for the use of education in the Arabic teaching process. In this study, the opinions of university students about the use of Youtube, one of the social media tools, in teaching Arabic are included. 200 students studying in Arabic preparatory classes within higher education institutions participated in the research; His views on the Arabic lessons given on Youtube were examined. At the end of the study, Arabic preparatory class students; It has been revealed that they think that the use of Youtube in the Arabic teaching process is beneficial. As a result of the answers given to the open-ended question asked whether Youtube lessons are advantageous in teaching Arabic; It has been determined that Youtube Arabic lessons contribute to the students in the preparation process and course repetitions at school. Another result of the study is; It has emerged that the number of Arabic lessons given on Youtube is less than other languages, which is perceived as a serious deficiency by the students.

Keywords: Arabic Teaching, Social Media, Youtube Lessons

1. Introduction

1.1 Introducing the Problem

Education is a development process that exists in every moment of our lives. Today, people refer to the internet to access information and use time better. Internet platforms are an important tool in the stage of conveying information to people. At this stage, the YouTube platform stands out as a popular application. Most people use

YouTube to listen to music, review products, watch movies, and learn languages. Studies show that social media tools contribute to language teaching (Çangal, 2020).

It is known that online learning environments provide important opportunities and opportunities for distance education. Individuals ensure their personal and professional development in the most efficient way regardless of time and place. However, individuals have the opportunity to choose from educational content according to their interests and abilities (Kesim, 2014). Youtube is one of the largest public repositories on the internet. People can share the content they produce or acquire on Youtube for free and quickly. Youtube has grown rapidly to the present day due to being one of the first mass open video sharing platforms. Among the platforms where videos can be shared in all categories, the platform with the most popularity and usage is Youtube. Youtube accounts for more than 30% of internet traffic worldwide (Casas, 2013). There is a lot of research on educational videos on the YouTube platform. In this context, it is considered important to evaluate the educational channels on Youtube from the viewers' point of view. Video producers with educational content on Youtube, viewers the need for the audience to configure their video content in accordance with their educational needs was seen as a problem and the research was shaped within this scope. In general, this research; "About the Arabic educational videos on Youtube; What are their expectations, suggestions and the aspects of the videos they see as sufficient or insufficient?" formed within the framework of the question.

Web 2.0 technologies cause the digitalization of education and prepare the environment. The main platforms that enable these technologies to be actively used and spread to large masses are social media tools. Among the social media tools, Youtube is one of the most popular platforms with the most educational content (Cihangir, 2021). Youtube is an interactive learning environment for 21st century learners. However, it has become a necessity to evaluate the reliability and quality of educational videos. (Jones & Cuthrell, 2011). Among the features that distinguish Youtube from traditional media tools are; There is a possibility that it is free of charge, that it is possible to express opinions about the content effectively and that the viewers can become content producers (Zinderen, 2020). With this research; Individuals who will create educational Arabic content on the Youtube platform, in line with the views of viewers and trainers; It is aimed to make suggestions about the features that educational videos should have.

1.2 Purpose of the Research

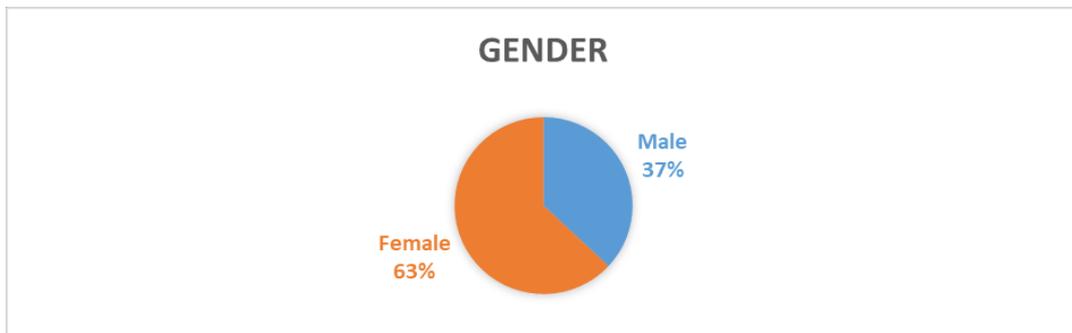
In the research, it was aimed to determine the use of YouTube in Arabic teaching. The aim of the study is to reveal the perspectives of Arabic preparatory class students towards the use of YouTube. For this purpose, answers to the following questions were sought in the study:

1. Using YouTube by Arabic preparatory class students; what are their thoughts about it?
2. What are the habits of Arabic preparatory class students using YouTube?
3. What are the positive and negative aspects of using YouTube in teaching Arabic?

2. Method

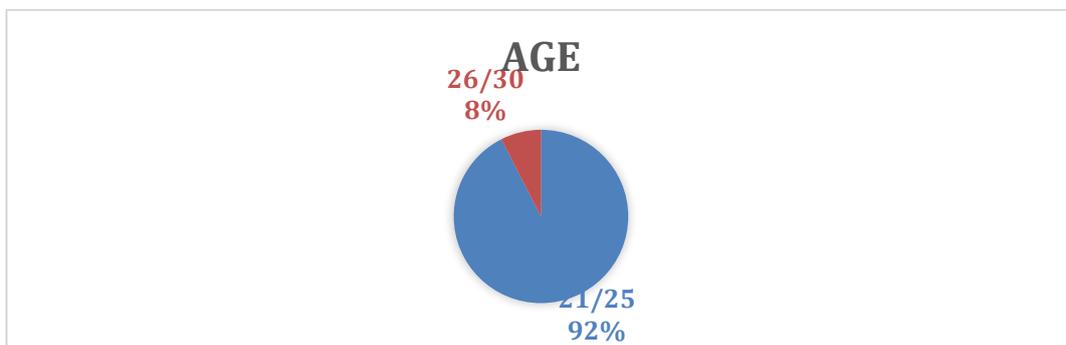
This research is a study prepared by using qualitative research methods. YouTube in teaching Arabic student views on its use are discussed. In this respect, the research is a case study. The study group of the research consists of 200 students studying in the Arabic preparatory class at universities. The personal data of the participants are as follows:

Table 1: Gender of Participants



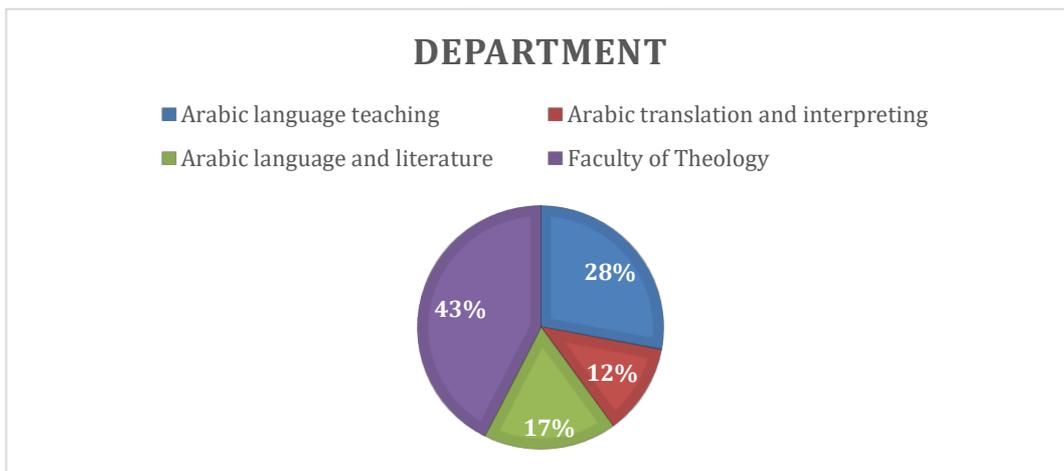
One hundred and twenty-six (63%) of the participants were women and seventy-four (37%) were men.

Table 2: Age of Participants



The students participating in the research are between the ages of 21-30. When the data is examined, it is understood that there are more female students than males.

Table 3: Department of Participants



The Faculty of Theology ranks first with 85 students in the Arabic preparatory class.

A structured interview form prepared by the researcher was used to collect opinions from the students. The structured interview form consists of two parts. In the first part of the form, the participants there are the following questions to identify personal information:

- What is your gender?
- How old are you?
- In which department are you a student?

The questions in the second part are:

- What about the use of YouTube in Arabic teaching processes?

do you think?

- How often do you use YouTube?
- In your opinion, what are the positive aspects of using YouTube while learning Arabic?
- In your opinion, what are the negative aspects of using YouTube while learning Arabic?

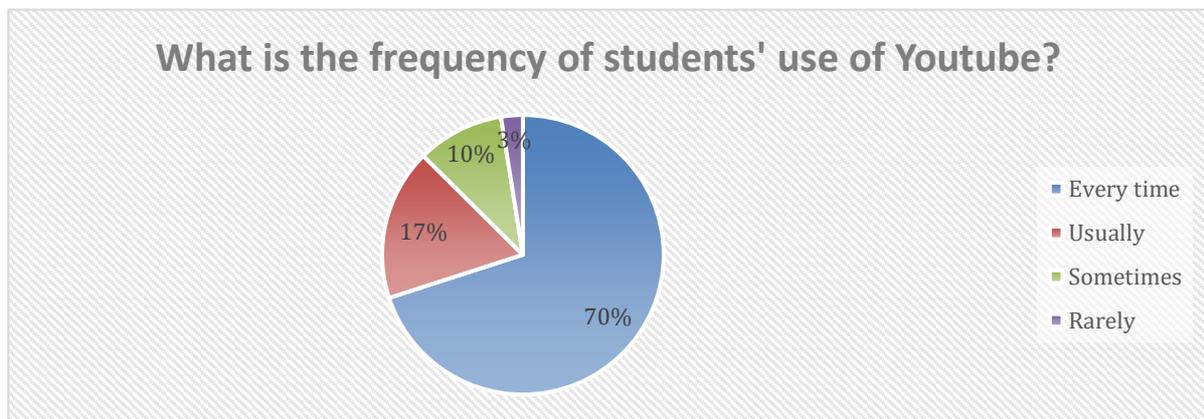
Content analysis was used in the analysis of the data obtained within the scope of the research.

2. Findings and Comments

In this section, findings and comments about the research are given.

2.1. What is the frequency of students' use of Youtube?

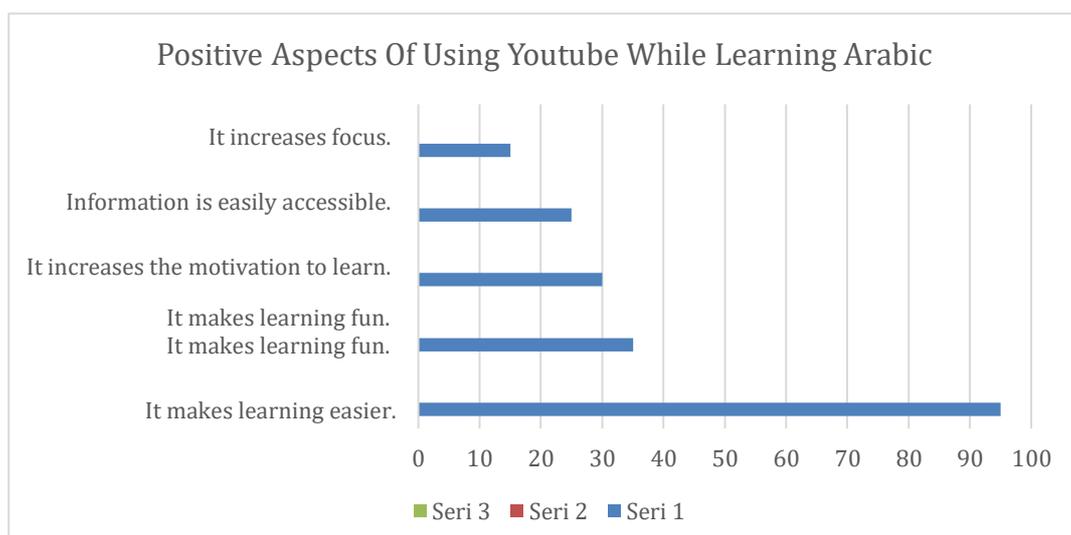
All of the students participating in the research use Youtube. The rate of use of Youtube by students is as follows:



As seen in the graph, 70% of the participants use Youtube actively. It is understood that 17% of the participants generally use youtube. The rate of those who use youtube occasionally is 10%. The rate of those who rarely use youtube is only 3%.

2.2. In your opinion, what are the positive aspects of using YouTube while learning Arabic?

Regarding the advantages of learning Arabic on Youtube, the participants generally gave the following answers:



As seen in the data in the chart, 95 respondents think that Youtube facilitates learning Arabic. According to 35 participants, Youtube makes learning Arabic fun. 30 participants Youtube provides motivation to learn Arabic. 25 participants think that YouTube provides easy access to information. Finally, 15 participants see youtube as a source of focus. Some comments on the averages in the chart are given below:

P.7. Anyone can reach. There's more preparation while telling. So you can put the direct example sentence on the screen. There are all kinds of time savings.

P.42. In the past, such supportive services and training did not exist. The lucky ones also went to the special classrooms. It is such a blessing for us to be able to take Arabic lessons comfortably at home and not pay for it right now.

P.75. Definitely arabic channels on youtube are helpful. It causes a good student to stay at the same point because of the progress towards the grade level at the university. At this point, the Arabic channels are catching up with us, so to speak.

P.80. Sometimes a lack of communication due to the crowded classrooms at the university causes misunderstanding of the subject. We can solve the problem that occurs in our minds by listening to our teachers who tell the necessary subject on Youtube.

P.112. We can learn modern text reading lessons, question solutions and classic book reading lessons from our Youtube teachers. There is no need to go long distances for these, they are all at our fingertips.

P.132. I'm in the Arabic preparatory class, I'm in the translation and interpreting department. I personally benefited greatly from the Youtube channel this year.

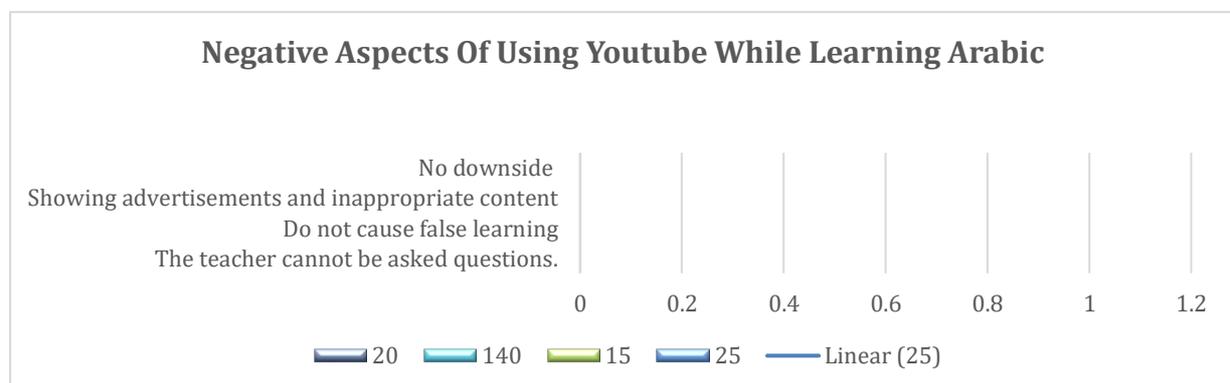
P.165. There were some lessons that I couldn't attend, because not everyone in our class speaks Arabic at the same level, sometimes the lectures were really long. In these situations, Youtube videos have always come to my rescue.

P.183. It is certainly very useful as a supportive education.

P.190. The fact that the lessons can be accessed from anywhere, the opportunity to listen to the lessons one after the other with the playlist, the lessons do not take much time, the reading passages are translated in a neat language are all advantages.

2.3. In your opinion, what are the negative aspects of using YouTube while learning Arabic?

Regarding negative aspects of learning Arabic on Youtube, the participants generally gave the following answers:



According to the participants, the most negative aspect of using YouTube in teaching Arabic too much advertising (70%). 12% of the participants stated that they could not find answers to the questions. The rate of those who argue that youtube Arabic lessons do not have any disadvantages is 10%. 8% of the participants argue that youtube causes wrong teaching. Some comments on the negative in the chart are given below:

P.28. Preparation is good for the student. We translate and enter the lesson. However, only this works. Other than that, I do not find any Arabic channel successful in narration.

P.32. There is a boring narration in Arabic channels. This applies to everything from tone of voice to the way of speaking.

P.66. When we look at the English resources, we find a lot of varieties, a lot of videos, but there is not that much variety in Arabic. We are forced to watch the video, which is of no use to us, until we understand it.

P.127. The lecture is very monotonous. The narrator should not shoot a video after six hours of class, he should be energetic.

P.145. Among the disadvantages; for some students, there is the factor of quick expression. Moreover; there is a lack of interaction as an inevitable consequence of this platform. Constantly skipping open-ended questions creates a problem for me. For example, in the "silsiletül lisan" book, instead of just translating open-ended questions in each unit, some titles can be given that can help with the answer.

3. Discussion

Today, most of the students prefer Youtube as their educational video content platform (Barry, 2015). People spend most of their time on various websites. Thus, social media is an important tool to be used in language teaching processes. There are many studies on the use of social media tools in language teaching processes (Balçıkanlı, 2009). Studies have shown that when social media is used in language teaching, it proved to be easy. Based on student opinions on the use of YouTube in teaching Arabic, this the data obtained from the study also support the results of previous studies.

Students in the study group think that YouTube improves their language skills. The same students believe that in the future, individual learning systems will develop and the use of YouTube in language teaching will increase. The use of YouTube in language teaching has both positive and negative aspects. Some of the positive aspects of using YouTube in lessons; it improves language skills, makes learning fun, and provides easy access to information.

Although there are more positive aspects, the use of YouTube in language teaching also has some negative aspects (Çangal, 2020). According to students, YouTube can cause false learning. Not asking questions to the teacher is another negative feature. Youtube Arabic lessons, encountering advertisements and irrelevant content is one of the main problems faced by learners. Another result of the study is; It has emerged that the number of Arabic lessons given on Youtube is less than other languages, which is perceived as a serious deficiency by the students.

References

- Barry, D. S., Marzouk, F., Chulak-Oglu, K., Bennett, D., Tierney, P., & O'Keeffe, G. W. (2015). Anatomy education for the YouTube generation. *Anatomical Sciences Education*, 9, 90–96. <https://doi.org/10.1002/ase.1550>
- Casas, P., Schatz, R., & Hossfeld, T. (2013). Monitoring YouTube QoE: Is Your Mobile Network Delivering the Right Experience to your Customers? IEEE Wireless Communications and Networking Conference, WCNC, 1609–1614. <https://doi.org/10.1109/WCNC.2013.6554804>
- Çangal, Ö. (2020). *Yabancılarla Türkçe öğretiminde sosyal medya kullanımının yazma becerisine*

- Etkisi*. [The effect of social media usage on writing skills in teaching Turkish to foreigners]. Unpublished master thesis. Hacettepe University.
- Cihangir, H.H. (2021). *Youtube'un Eğitim Ortamı Olarak Kullanımının İzleyici Ve Eğitimci Bağlamında İncelenmesi*. [An investigation of the use of youtube as an educational environment in the context of viewers and trainers]. Unpublished master thesis. Necmettin Erbakan University.
- Jones, T., & Cuthrell, K. (2011). YouTube: Educational potentials and pitfalls. *Computers in the Schools*, 28(1), 75–85. <https://doi.org/10.1080/07380569.2011.553149>
- Kesim, E. (2014). Kitlelesel Açık Çevrimiçi Derslerin Kullanımına İlişkin Uzaktan Eğitim Uzmanlarının Görüşleri. [Perceptions of Distance Education Experts Regarding the Use of MOOCs]. *Turkish Online Journal of Qualitative Inquiry*, 5(4), 62–86.
- Zinderen, İ. E. (2020). Yeni Medya Ekolojisi Ekseninde YouTube : Türkiye Örneği. [Youtube on the axis of new media ecology: the case of Turkey]. *Atatürk University Journal of the Institute of Social Sciences*, 24(1), 215–232.



Publication Outcomes Doctoral Dissertations in Teaching Turkish as a Foreign Language Field

Bayram Özbal¹

¹ Ministry of National Education, Kastamonu, Turkey

Correspondence: Bayram Özbal, Göl Anatolian High School, Kastamonu, Turkey.
Tel: +905068601840. E-mail: ozbalbayram@hotmail.com

Abstract

This research determines the rates of converting doctoral dissertations into publications, types of publications (book, book chapter, journal article), and the status of publications according to indexes in the field of teaching Turkish as a foreign language. For this purpose, first, doctoral dissertations in this field until 2020 were identified through the keywords in the Council of Higher Education Thesis Centre database. Then, the status of the dissertations being converted into publications was investigated. The sample of the research consisted of 98 doctoral dissertations. Document analysis, a qualitative research method, was employed in the research. According to the findings of the research, most doctoral dissertations were completed in 2018. Hacettepe University, Gazi University, and Atatürk University are the universities with the highest number of doctoral dissertations in the relevant field. It was also detected that 28% of the doctoral dissertations in the research sample were not converted into any publication, and articles were mostly preferred (81%) in the conversion of doctoral dissertations into publications. Articles were mostly published in journals indexed in the TR index (61%). According to the results of the research, it can be suggested that the quality of doctoral dissertations in the field of teaching Turkish as a foreign language should be reviewed, and publications in internationally recognized journals should be encouraged.

Keywords: Teaching Turkish as a Foreign Language, Doctoral Dissertations, Publications from Doctoral Dissertations

1. Introduction

The doctoral dissertation, which is the most important step of postgraduate education, can be seen as a turning point for researchers to become scientists. To have been awarded a doctorate degree, publishing academic studies based on their dissertation is automatically viewed as the next step for most new graduates. These are in the form of converting the entire dissertation into a book, converting the dissertation into a journal article or splitting it into several articles, and using an aspect of a dissertation in an edited book.

It is not easy to obtain a dissertation published as a book, book chapter, or an article without making major revisions to it because a dissertation differs from these in many ways (Bowen, 2010; Paltridge, 2017; Paltridge & Starfield,

2020). The length of a dissertation is unlimited, but the length of a book is strategically controlled for marketability. A dissertation has a few long chapters, but a book has several chapters of readable length (Germano, 2013). Similarly, publishing an academic article based on a dissertation “is not just a matter of cutting and pasting it” (Paltridge & Starfield, 2020, p. 157) or “simply a matter of summarizing” (Bowen, 2010, p. 875). There are, obviously, fundamental differences in “the content, format, and length of a journal article” (Bowen, 2010, p. 865) or “goal and objectives” (Pollard, 2004, p. 2) compared to a dissertation. Mesquita (2018) lists some of these differences as follows: A dissertation meets academic requirements, is reviewed by a director and a supervisor committee member, has some chapters, no word limits, a table of contents, is lengthy research of literature, whereas an article meets journalistic standards, is reviewed by a panel of blind reviewers, has sections, word limits, manuscript format, is succinct research of literature. Another key difference between a dissertation and an article is the audience. It will therefore mainly go unread aside by examiners, supervisors, other doctorate students, peers, and perhaps rare scholars, making it exceedingly unlikely to affect practice or thought (Tribe & Tunariu, 2016). It is important in terms of scientific communication, that dissertations are converted into publications to reach broader audiences. The publication of a dissertation in a peer-reviewed journal contributes to a more accessible, permanent, and rapid dissemination of research results. Journals serve as hubs of scientific thinking and forums for idea exchange since they have evolved into the fundamental tool for scientific communication. In the form of explicit guidelines for academic discourse, ethics, and accountability for the calibre of research, they have also influenced the mindsets of generations of researchers (Kachniewska, 2019). Therefore, an unpublished dissertation in a peer-viewed journal may become just “shelf-bending” research, sitting in your university library and slowly bending a shelf over the years (Dunleavy, 2003, p. 227).

Articles derived from dissertations supply an excellent database from which to disseminate, share and convey new ideas, information, or concepts. Dissemination of a dissertation through peer-reviewed journals is an indicator of the scientific value of a dissertation and of the acceptability of its content by the international scientific community as to whether it has been published in a peer-reviewed journal (Nieminen et al., 2007). An unpublished dissertation is a lost opportunity for both the graduate and the scientific community at large because research findings reported in dissertations are less likely to be cited in academic journals (Thomas, 2015), and the nonpublication of a dissertation can also be detrimental to the advancement of scientific knowledge in other ways (Evans, Amaro, Herbert, Blossom & Roberts, 2018).

When we look at the issue of producing publications from doctoral dissertations from the perspective of Turkey, it is seen that this situation is a compulsory requirement. In Turkey, it has become compulsory for scientists who want to pursue an academic career after doctoral education to produce at least one publication from their doctoral theses as of December 2016 by the Turkish Interuniversity Board (Interuniversity Board, 2016). Additionally, some universities in Turkey (Gazi University Postgraduate, 2019; Bursa Uludağ University Postgraduate, 2020) encourage the production of publications from doctoral theses by accepting at least one scientific article related to the student’s doctoral thesis topic published or accepted for publication in national/international refereed journals as a condition for going in for doctoral thesis defense. In the workshop on improving doctoral education organized by the Council of Higher Education (CoHE) in Turkey in 2022, recommendations such as encouraging students to convert their theses into publications, evaluating publishing from the dissertation together with the supervisor, rewarding qualified publications produced within the scope of the dissertation, and making it compulsory to publish at least one article in international indexed journals related to the doctoral dissertation for graduation increase the importance of producing publications from doctoral dissertations (CoHE, 2022).

Recently, there has been a growing body of literature has examined postgraduate theses in the field of teaching Turkish as a foreign language (TTFL). The majority of these articles have focused on the trends of postgraduate theses (Baki, 2019; Çelebi, Ergül, Büsra & Mutlu, 2019; Kahtalı & Günata, 2021; Karagöz & Şeref, 2021; Kılıç, 2022; Maden & Önal, 2021). In these articles, postgraduate theses were analyzed in terms of the year of publication, supervisor titles, method, design, subject areas, etc., by content analysis. These articles are important in terms of describing the productivity, tendencies, and evolution of scientific and research activity in the relevant field. However, to date, far too little attention has been given to publications derived from dissertations in the TTFL field. It is also significant to describe the rates of converting doctoral theses in this field into publications, types of publications (book, book chapter, journal article), and the status of publications according to indexes. It

should be noted that this research does not aim to evaluate doctoral students, their supervisors, published or unpublished doctoral dissertations and doctoral programs or universities, nor does it support the publication of all doctoral dissertations regardless of their quality. Rather, this research aims to draw attention by shedding light on the rates of publication of doctoral dissertations in the field of TTFL, publication preferences and the status of publications according to indexes. It is thought that increasing research on the quality and publishing of doctoral dissertations in the relevant field will contribute to the quality of doctoral education, dissertations and the productivity of doctoral students. It is also thought that this research is the first research in the related field and will fill the gap in the literature. This research is important in terms of guiding researchers by revealing the trends in publications from doctoral dissertations in the related field, evaluating and self-criticizing doctoral theses and guiding future studies. In this framework, in the research, an answer to the main question “What is the status of publications produced from doctoral dissertations in the field of teaching Turkish as a foreign language?” was sought.

2. Method

2.1 Research Design

In this research, a qualitative research method, document analysis, was employed to identify the publications produced from doctoral dissertations in the field of TTFL. Like other methods used in qualitative research, document analysis requires the examination and interpretation of data to make sense, to create an understanding of the subject matter and to develop empirical knowledge (Corbin & Strauss, 2008). In this research, TTFL dissertations and publications produced from these dissertations were collected, systematically analyzed and evaluated.

2.2 Data Collection

The data collection process in this study consisted of two stages. In the first stage, it was oriented toward the identification of doctoral dissertations. For this purpose, the Turkey Council of Higher Education Thesis Centre database was used as a data source. On this platform, on August 30, 2022, the query terms “Turkish as a foreign language”, “teaching Turkish to foreigners”, “teaching Turkish as a second language” and “Turkish for foreigners” were entered in the search section using the advanced search tab. The doctorate was selected as the thesis type, and all dissertations with or without permission until 2020 were scanned. A total of 108 doctoral dissertations were identified in the search query. The Turkish and English names, universities, author and supervisor names of the dissertations were recorded by the researcher.

The second stage of the data collection process was to detect the publications produced from doctoral dissertations. Doctoral dissertation names were queried in the Web of Science (<http://apps.webofknowledge.com/>), ERIC (<https://eric.ed.gov/>), Google Scholar, and TR Index (<https://trdizin.gov.tr/>) databases in English or Turkish. The query process of the databases commenced on September 3, 2020, and query scanning was completed on September 30, 2020. Considering that the name of the thesis and the study converted into a publication might not have the same name, the query was continued by typing the name of the author and/or thesis supervisor into the databases. With the idea that a part of the dissertation might be converted into a publication, the personal page of the dissertation author in the academic data systems of universities (<https://akademik.yok.gov.tr/AkademikArama/>) and Google Scholar, Researchgate, Academia, Sobiad and Scopus user profiles were checked. An e-mail was sent to a total of 38 thesis authors whose publications could not be identified in all scans, and information was obtained on whether any publications were produced from their theses. As data could not be obtained from 10 thesis authors to whom e-mails were sent, the research sample consisted of 98 doctoral dissertations. Conference papers produced from doctoral dissertations and publications that are not stated to be produced from doctoral dissertations are excluded in the research.

2.3 Data analysis

The identified publications were analyzed by content analysis, which is the process of organizing information into categories related to the central research questions (Bowen, 2009). In the classification of the identified publications, the publication criterion related to graduate theses prepared by the Turkish Interuniversity Board for associate professor candidates in the basic field of educational sciences was used as a reference. According to these criteria, books were divided into two groups: books published by well-known international and national publishers. Similarly, book chapters were divided into two groups as chapters in books published by international and national publishers. The articles were classified into four groups: articles published in journals indexed in the SSCI, SCI, SCI-Expanded and AHCI indexes, international field indexes (Australian Education Index, British Education Index, Journals Indexed in ERIC, Education Full Text, ESCI), TR index and international indexes (SCOPUS, EBSCO, DOAJ, MLA, Index Copernicus, etc.). The identified books and book chapters were sorted into groups by checking whether the publishing houses in which they were published had international or national publishing status. Articles were categorized by verifying the indexes of the journals in which they were published. Descriptive statistics such as percentage, average and frequency were utilized to present the data using the SPSS-18 program.

3. Results

The results of the research are presented below in order of the year of acceptance of the doctoral dissertations, the university where they were conducted, the rate of dissertations converted into publications, the types of publications and the indexes of the publications. The approval years of the 98 doctoral dissertations included in the research sample are presented in Table 1.

Table 1: Distribution of dissertations by year

2002	1
2004	1
2010	1
2011	1
2012	1
2014	5
2015	8
2016	8
2017	6
2018	21
2019	28
2020	17
Total	98

As Table 1 indicates, 28 (28.6%) of the dissertations were completed in 2019, 21 (21.4%) in 2018, and 17 (17.3%) in 2020. Eight (16.4%) dissertations were completed in 2015 and 2016, 6 (6.1%) in 2017, and 5 (5.1%) in 2014. A dissertation completed in 2002, 2004, 2010, 2011, and 2012 (5%) was included in the research sample. It is concluded that the 98 theses included in the research sample were conducted in 19 different universities. The universities where the dissertations were conducted are presented in Table 2.

Table 2: Distribution of dissertations by universities

<i>Universities</i>	<i>f</i>	<i>%</i>
Hacettepe University	26	26,5
Gazi University	19	19,4
Atatürk University	13	13,3
Inönü University	7	7,1
Çanakkale Onsekiz Mart University	7	7,1
Sakarya University	6	6,1

Erciyes University	3	3,1
Dokuz Eylül University	2	2,0
Marmara University	2	2,0
Ankara University	2	2,0
Bolu Abant İzzet Baysal University	2	2,0
Hatay Mustafa Kemal University	2	2,0
Selçuk University	1	1,0
İstanbul University	1	1,0
Fırat University	1	1,0
Necmettin Erbakan University	1	1,0
Eskişehir Osmangazi University	1	1,0
Muğla Sıtkı Koçman University	1	1,0
Yıldız Teknik University	1	1,0
Total	98	100,0

Table 2 reveals that 26 (26.5%) dissertations were conducted at Hacettepe University, 19 (14%) at Gazi University, 13 (13.3%) at Atatürk University, 7 (7.1%) each at Çanakkale Onsekiz Mart University and İnönü University, 6 (6.1%) at Sakarya University, and 3 (3.1%) at Erciyes University. At Dokuz Eylül University, Ankara University, Marmara University, Bolu Abant İzzet Baysal University, and Hatay Mustafa Kemal University, 2 (2.0%) doctoral dissertations were conducted at Selçuk University, Istanbul University, Fırat University, Necmettin Erbakan University, Eskişehir Osmangazi University, Muğla Sıtkı Koçman University, and Yıldız Technical University, and 1 (1.0%) doctoral dissertation was conducted at each university. The rates of conversion of doctoral dissertations into publications are presented in Figure 1.

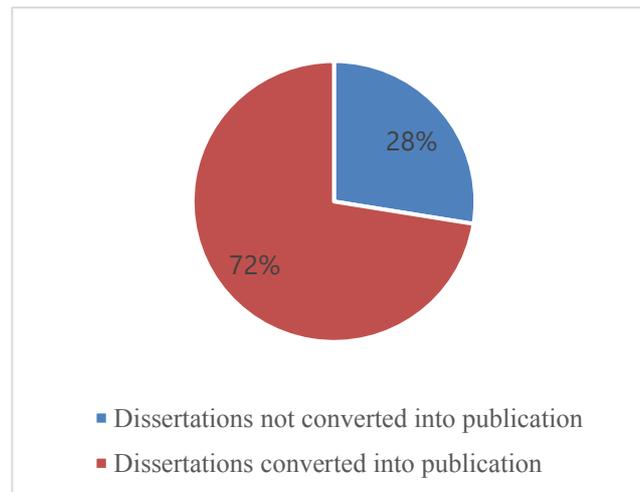


Figure 1: The rates of conversion of dissertations into publication

As Figure 1 demonstrates, out of the 98 doctoral dissertations included in the research sample, 27 (28%) were not converted into any publication, while 71 (72%) were converted into publications. It is worth looking at the types of publications produced by doctoral dissertations. The publications produced from doctoral theses are categorized into three groups: books, book chapters and articles. The ratios of publications according to these groups are illustrated in Figure 2.

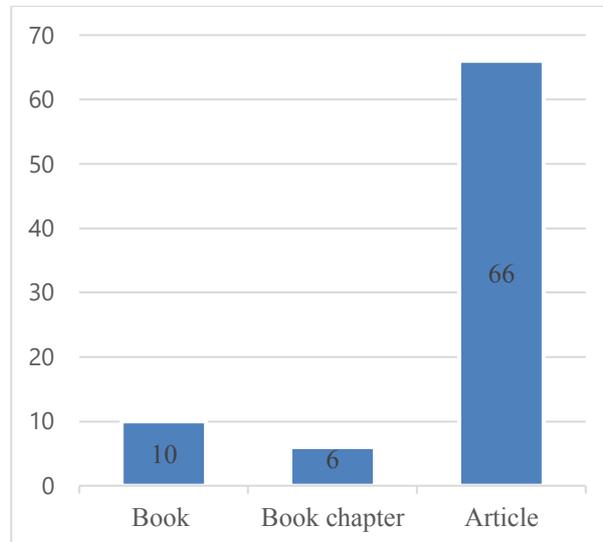


Figure 2: Types of publications extracted from dissertations

Figure 2 indicates that a total of 82 publications were produced from doctoral dissertations. Of these publications, 66 (81%) are articles, 10 (12%) are books and 6 (7%) are book chapters. It is apparent that articles are mostly preferred in the conversion of doctoral dissertations into publications. From some dissertations, more than one publication was produced. In the research, it was determined that two publications-two articles or one article and one book chapter-were produced from 9 doctoral dissertations, and three publications-two articles and one book chapter-were produced from one dissertation.

It was also determined that all of the doctoral dissertations that were converted into books or book chapters were published by international well-known publishers. Figure 3 presents the distribution of articles produced from dissertations according to indexes.

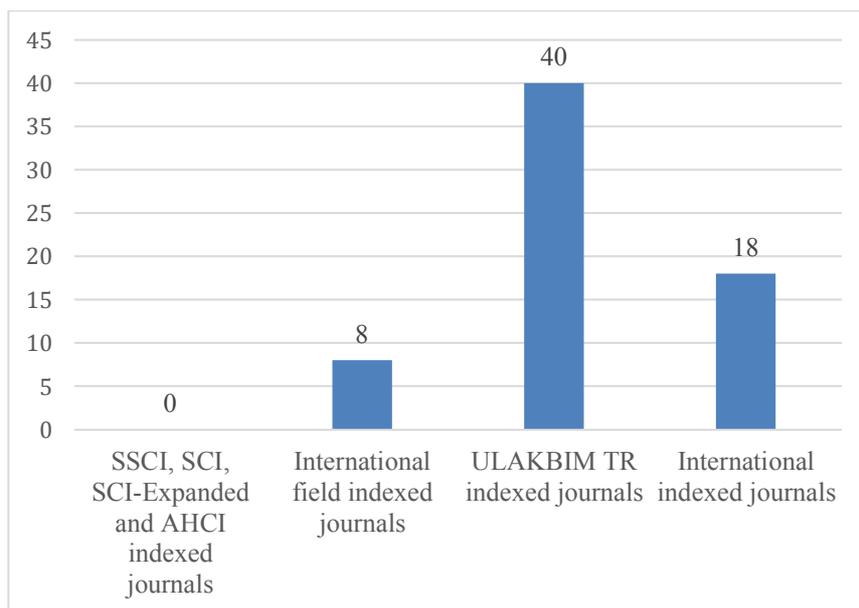


Figure 3: Distribution of articles by index

As shown in Figure 3, 40 (61%) of the articles produced from doctoral dissertations were published in journals indexed in the TR index, 18 (27%) in international indexes and 8 (12%) in international field indexes. It was determined that more than half of the articles were published in journals indexed in the TR index. The fact that no articles were encountered in journals indexed in SSCI, SCI, SCI-Expanded and AHCI indexes can be regarded as one of the striking findings of the research. The Selçuk University Journal of Faculty of Letters ($f=3$) and Journal

of Language and Linguistic Studies ($f=2$) were the most preferred journals in international field indexes. The journals indexed in the TR index in which the most articles are published are as follows: Journal of Bayburt Education Faculty ($f=5$), International Journal of Turkish Literature Culture Education ($f=5$), Turkish Studies ($f=4$), and Hacettepe University Journal of Turkish Studies ($f=4$). The journals indexed in international indexes in which the most articles are published are as follows: Mustafa Kemal University Journal of Social Sciences Institute ($f=4$) and International Journal of Languages' Education and Teaching ($f=3$).

In the Results section, summarize the collected data and the analysis performed on those data relevant to the discourse that is to follow. Report the data in sufficient detail to justify your conclusions. Mention all relevant results, including those that run counter to expectation; be sure to include small effect sizes (or statistically nonsignificant findings) when theory predicts large (or statistically significant) ones. Do not hide uncomfortable results by omission. Do not include individual scores or raw data with the exception, for example, of single-case designs or illustrative examples. In the spirit of data sharing (encouraged by APA and other professional associations and sometimes required by funding agencies), raw data, including study characteristics and individual effect sizes used in a meta-analysis, can be made available on supplemental online archives.

4. Discussion

In the present research, the rate of conversion of doctoral dissertations in the field of TTFL into publications, the type of publications, and the distribution of publications according to indexes were examined.

In this research, in which 98 doctoral dissertations in the field of TTFL were examined, the number of doctoral dissertations has experienced a significant increase since 2018. The years in which the most doctoral dissertations were completed in the data source were 2018 ($f=21$), 2019 ($f=28$) and 2020 ($f=17$). Therefore, as Seref & Karagöz (2020) point out, 2018 was an important milestone for the field. Kahtalı & Günata (2021), in their research analyzing postgraduate theses between 2014 and 2020, and Maden & Önal (2021), in their research analyzing the research trends of postgraduate theses in the related field between 2015 and 2020, reached similar results. However, Kahtalı & Günata (2021) found that 57 doctoral dissertations were completed between 2014 and 2020, and Maden & Önal (2021) found that 84 doctoral dissertations were completed between 2015 and 2020. This difference between the two studies can be explained by the use of different query terms. In this research, the fact that the data source consists of a total of 98 doctoral dissertations indicates that the representativeness of the research sample is quite high.

It was determined that doctoral dissertations in the field of TTFL were conducted in 19 different universities until 2020. According to the findings of the research, most theses were completed at Hacettepe University, Gazi University and Atatürk University. Maden & Önal (2021) found that postgraduate theses in the related field were conducted in 64 different universities between 2015 and 2020 and that these theses were mostly completed at Gazi University, Hacettepe University and Çanakkale Onsekiz Mart University. In the aforementioned research, it is seen that the number of universities is high since master's and doctoral dissertations are evaluated together. However, Hacettepe University and Gazi University ranked among the top universities in both studies. This can be interpreted by the fact that both universities have masters and doctoral programs in teaching Turkish as a foreign language.

One of the striking results of the research is that 27 doctoral dissertations were not converted into publications. This situation can be explained by the fact that some doctoral students may work in different educational institutions instead of pursuing an academic career within universities or that they cannot find a position at the universities. Negative experiences during doctoral education, lack of motivation, time or communication with the supervisor, personal or family matters and additional mentorship needs can all be other factors that may decrease the likelihood of publication of doctoral dissertations (Evans et al., 2018). New graduates may also underestimate the value of their dissertations. In this regard, supervisors should inspire graduates to produce publications, as doctoral dissertations are an original research and can contribute to disseminating into the scientific literature. However, especially with the increase in publications produced from dissertations completed in 2018, 2019, and

2020, it may be predicted that this number will decrease due to the long publication processes of articles in some journals.

In the research, it was revealed that articles, books and book chapters were the most preferred methods of converting doctoral theses into publications. The conversion time for all doctoral theses to all publications is calculated as a year and 5 months. The obligation to produce publications from graduate theses in associate professorship applications introduced by the Turkish Interuniversity Board and the obligation to publish before the thesis defense in some universities may be considered influential in the conversion of doctoral theses into publications. However, as Karagöz & Şeref (2021) point out, the production of publications from doctoral dissertations should not be seen solely as a means of meeting the criteria for promotion, and it is also important for young researchers to gain recognition and visibility.

Most of the articles are available online and are shorter than dissertations or books; in other words, they are reader-friendly and can contribute to the development of scientific literature faster in terms of reaching a much wider readership. Therefore, it can be argued that articles have a higher impact value than doctoral dissertations. Evans et al. (2018) detected in their research that articles produced from doctoral dissertations received higher citations than doctoral dissertations. Publication in a peer-reviewed journal also indicates that the content of the dissertation is acceptable to the international scientific community (Nieminen et al., 2007). In other words, they do not lack methodological rigor, including fatal flaws, or fail to make a novel, substantive and original contribution to the field (Evans et al., 2018). Ten doctoral dissertations in the research sample were converted into books published by international publishers. It can be claimed that the concern for academic promotion is at the forefront of the preferences of converting doctoral dissertations into publications for new graduates since high points in associate professorship applications are obtained from the book according to the criteria determined by the Interuniversity Board.

The majority of the articles produced from the thesis were published in journals indexed in the TR index ($f=40$) and international indexes ($f=18$). Another striking result of the research is that while the number of articles published in journals indexed in the field indexes is 8, no articles were published in journals indexed in SSCI, SCI, SCI-Expanded and AHCI indexes. Karagöz & Şeref (2021) analyzed doctoral dissertations completed between 1995 and 2020 in Turkish language teaching and concluded that the publications produced from thesis were mostly published as national articles in journals originating from Turkey and that the number of publications listed in the Web of Science (SSCI/ESCI/AHCI) citation index was quite low. Therefore, it is suggested that the quality of doctoral dissertations in the field of TTFL should be reviewed. Publication in internationally recognized journals should be encouraged.

In conclusion, all doctoral students should be encouraged and motivated to publish their dissertations by their supervisors, and the supervisors should support and guide them to contribute to disseminating into the scientific literature. It should not be forgotten that published dissertations may be a prideful event not only for doctoral graduates' careers but also for their supervisors and even for universities.

Acknowledgements

I would like to thank all my colleagues who contributed to the fulfillment of this research by kindly responding to my e-mail.

References

- Baki, Y. (2019). Yabancılara Türkçe öğretimi alanındaki araştırma eğilimleri [Research trends in teaching turkish to foreigners]. *International Journal of Language Academy*, 7(3), 22–41. <http://dx.doi.org/10.18033/ijla.25829>
- Bowen, G. A. (2009). Document analysis as a qualitative research method. *Qualitative Research Journal*, 9(2), 27–40. <https://doi.org/10.3316/QRJ0902027>
- Bowen, G. A. (2010). From qualitative dissertation to quality articles: seven lessons learned. *The Qualitative Report*, 15(4), 864–879. <https://doi.org/10.46743/2160-3715/2010.1185>

- Bursa Uludağ Üniversitesi Lisansüstü Eğitim-Öğretim ve Sınav Yönetmeliği [Bursa Uludag University PostGraduate Education and Examination Regulations] (2020, June 28). *Resmi Gazete* (Sayı: 31169). <https://www.resmigazete.gov.tr/eskiler/2020/06/20200628-21.htm>
- Council of Higher Education [CoHE], (2002). Doktora öğretiminin iyileştirilmesi çalıştay raporu [Improving doctoral teaching workshop report]. <https://www.yok.gov.tr/Documents/Yayinlar/Yayinlarimiz/2022/doktora-ogretimini-iyilestirilmesi-calistayi.pdf>
- Çelebi, C., Ergül, E., Büşra, U., & Mutlu, M. (2019). Türkiye’de yabancılara Türkçe öğretimi alanında hazırlanmış lisansüstü tezler üzerine bir meta-analiz çalışması [A meta-analysis study on graduate dissertations prepared Turkish teaching for foreigners in Turkey]. *Journal of Primary Education*, 1(3), 39–52. <https://dergipark.org.tr/tr/download/article-file/765220>
- Corbin, J., & Strauss, A. (2008). *Basics of qualitative research: Techniques and procedures for developing grounded theory* (3rd ed.). Sage.
- Dunleavy, P. (2003). *Authoring a PhD*. Palgrave Macmillan.
- Evans, S. C., Amaro, C. M., Herbert, R., Blossom, J. B., & Roberts, M. C. (2018). ‘Are you gonna publish that?’ Peer-reviewed publication outcomes of doctoral dissertations in psychology. *PLoS ONE*, 13(2), 1–16. <https://doi.org/10.1371/journal.pone.0192219>
- Gazi Üniversitesi Lisansüstü Eğitim-Öğretim ve Sınav Yönetmeliği [Gazi University Postgraduate Education and Examination Regulation] (2019, June). *Resmi Gazete* (Sayı: 30798). <https://www.resmigazete.gov.tr/eskiler/2019/06/20190611-1.htm>
- Germano, W. (2013). *From Dissertatin to Book* (2nd ed.). The University of Chicago Press.
- Interuniversity Board (2016). 2016 nisan ve öncesi dönemler doçentlik başvuru şartları [2016 application requirements for application for associate professorship in april 2016 and prior period]. [shttps://www.uak.gov.tr/Sayfalar/docentlik/basvuru-sartlari/2016-nisan-ve-oncesi-donemi-docentlik-basvuru-sartlari.aspx](https://www.uak.gov.tr/Sayfalar/docentlik/basvuru-sartlari/2016-nisan-ve-oncesi-donemi-docentlik-basvuru-sartlari.aspx)
- Kachniewska, M. (2019). Scientific communication in the world of digital technologies: conditions and perspectives regarding the development of scientific journals. *Folia Turistica*, 50(1), 307–349. <https://doi.org/10.5604/01.3001.0013.4510>
- Kahtalı, D. B., & Günata, B. (2021). Türkiye’de yabancı dil olarak Türkçe öğretiminin geldiği son nokta [Current situation of teaching turkish as a foreign language]. *Turkish Studies*, 16(3), 931–959. <https://doi.org/10.7827/TurkishStudies.50104>
- Karagöz, B., & Şeref, I. (2021). Türkçe eğitimi doktora tezlerine bütünsel bir yaklaşım (1995-2020) (A holistic approach to PhD theses in turkish language education (1995-2020)). *Selcuk University Journal of Faculty of Letters (SEFAD)*, 46, 4368. <https://doi.org/10.21497/sefad.1031689>
- Kılıç, F. G. (2022). An examination of theses and dissertations on teaching Turkish as a foreign language: a documentary analysis of studies carried out between 2008 and 2020. *Journal of Innovative Research in Teacher Education*, 3(1), 37–49. <https://doi.org/10.29329/jirte.2022.436.3>
- Mesquite, L. (2018). Eight top tips to help you to turn your PhD thesis into an article. *Elsevier*. <https://www.elsevier.com/connect/authors-update/eight-top-tips-to-help-you-turn-your-phd-thesis-into-an-article>
- Maden, S., & Önal, A. (2021). Yabancı dil olarak Türkçe öğretimi ile ilgili lisansüstü tezlerin araştırma eğilimleri [Research tendencies of postgraduate theses related to teaching Turkish as a foreign language]. *International Journal of Education Science and Technology*, 7(1), 42–56. <https://doi.org/10.47714/uebt.878270>
- Nieminen, P., Sipilä, K., Takkinen, H.-M., Renko, M., & Risteli, L. (2007). *Medical theses as part of the scientific training in basic medical and dental education: experiences from Finland*. 7(51), 1–7. <https://doi.org/10.1186/1472-6920-7-51>
- Paltridge, B. (2017). Publishing from a dissertatin. A book or article. In J. McKinley & R. Heath (Eds.), *Doing research in applied linguistics: Realitis, dilemmas and solutions* (pp. 243–252). Routledge.
- Paltridge, B., & Starfield, S. (2020). *Thesis and dissertation writing in a second language* (2nd ed.). Routledge.
- Pollard, R. J. (2004). From dissertation to journal article: a useful method for planning and writing any manuscript. *The Internet Journal of Mental Health*, 2(2). https://journaldatabase.info/articles/from_dissertation_journal_article.html
- Şeref, I., & Karagöz, B. (2020). Yabancılara Türkçe öğretimi lisansüstü tezlerinin atf analizi (1988-2019) [Citation analysis of graduate theses on teaching of Turkish as a foreign language (1988-2019)]. *Çukurova Üniversitesi Eğitim Fakültesi Dergisi*, 49(2), 1145–1183. <https://doi.org/10.14812/cufej.740826>
- Thomas, R. A. (2015). *The effectiveness of alternative dissertation models in graduate education* [Brigham Young University]. <https://scholarsarchive.byu.edu/cgi/viewcontent.cgi?article=6275&context=etd>
- Tribe, R., & Tunariu, A. D. (2016). Turning your dissertation into a publishable journal article. *Counselling Psychology Review*, 31(1), 50–58. <https://repository.uel.ac.uk/item/850v9>

Parameters Affecting Training Effectiveness: A Study of Wastewater Treatment Training in Politeknik Negeri Bandung

Herawati Budiastuti¹, Dhyna Analyses Trirahayu¹, Tifa Paramitha¹, Bambang Soeswanto¹, Endang Kusumawati¹, Retno Indarti¹, Emmanuela Maria Widyanti¹, Pratap Pullammanappallil²

¹ Chemical Engineering Department, Politeknik Negeri Bandung, Bandung, Indonesia

² Department of Agricultural and Biological Engineering, University of Florida, USA

Correspondence: Dhyna Analyses Trirahayu, Chemical Engineering Department, Politeknik Negeri Bandung, Bandung, 40559 Indonesia. E-mail: dhyna.analyses@polban.ac.id

Abstract

Training is one of many activities to improve the competencies of employees. Politeknik Negeri Bandung conducted wastewater treatment training for teachers from one of the vocational high schools in Bandung, Indonesia. To analyze the parameters influencing the training effectiveness of its training, this study employed quantitative research. Data regarding the demographics of respondents and respondents' perceptions about various parameters influencing the training effectiveness were gathered by a survey questionnaire. In addition, the paper-based final test was used to identify the understanding of trainees about the content provided, and further, the data was used for analyzing training effectiveness. The data were then analyzed by using the statistical package for social sciences software. The findings suggested that the respondents have positive perceptions of training materials, training atmosphere, training facilities, training plan and schedule, and presentation mode. The average value of the Likert scale ranges from 3.33 to 3.89 of 4. It reflected that wastewater treatment training satisfied the trainee's expectations from their point of view. Additionally, a positive linear correlation between the dependent parameter (training effectiveness) and five independent parameters could be inferred. The results of the study are valuable in encouraging organizations that hold training to take these parameters into account when carrying out similar training.

Keywords: Training Effectiveness, Training Materials, Training Atmosphere, Training Facilities, Training and Plan Schedule, Presentation Mode

1. Introduction

The Indonesian National Qualification Framework (IQF) Level 4 Equalization Program at Professional Certification Body at Politeknik Negeri Bandung for vocational high school instructors who have had more than 5 (five) years work experience was implemented in 2019. The educational qualifications of the instructors with high school diplomas were increased to the equivalent of level 4 of Indonesian National Qualification Framework. This program was followed in 2020 by detailed understanding activities pertaining to heat exchanger operation

and extraction, as well as spectrophotometric and UV/Visible analysis competence. Assessors who carried out the IQF level 4 equivalent competency test feel obligated to truly transfer the theoretical and practical knowledge that these vocational high school Instructors must possess so that those holding IQF Level 4 truly have competencies in accordance with the intended competencies (Budiastuti, et al., 2021).

This program was then continued in 2021. The principal of this vocational High School in Bandung, Indonesia proposed that the transfer of understanding of competence and improvement of insight be also given to teachers by adjusting the competence of teachers who are also assessors when carrying out competency tests for their students. The competence in question is the competence to operate wastewater treatment and matters related to the dangers of its operation. Due to pandemic conditions that were still worrying, this competency improvement activity was carried out online, both for theoretical understanding and practical understanding (Budiastuti, et al., 2022). For this reason, in 2022, these trainees hope that competency improvement can be carried out offline so that practical competencies (hard skills) can be obtained optimally. The teacher's wishes were welcomed by the principal who strongly supports the implementation of competency improvement activities for teachers, especially wastewater treatment competencies which have not been taught optimally at this school. So far, wastewater treatment material has only been inserted into related subjects and is not a separate subject that supports the competencies needed by students at vocational high school.

The effectiveness of training typically assesses by administering an exam to participants without taking into account training factors for instance training contents, training environment, facilities and materials, training schedule, and presentation style. It is critical to emphasis on the needs of participants when evaluating any training programs to ensure training effectiveness (Hajjar and Alkhanaizi, 2018). Based on this statement, the purpose of this study was to investigate the influence of the several factors to training effectiveness on a training program about wastewater treatment for vocational high school teachers based on the perspectives of participants and final examination results.

2. Method

This study employed quantitative research which produces numerical data by using a statistical method with aims to investigate the causal relationships and determine the strength and significance of the relationships (Apuke, 2017). There were independent parameters including training materials (TM), training atmosphere (TA), training facilities (FA), training plan and schedule (TPS), and presentation mode (PM) that was partially analyzed the relationship to training effectiveness (TF) as a dependent parameter.

2.1 Respondents of the Study

Participants in the wastewater treatment training that was held at Politeknik Negeri Bandung from July to August 2022, became the object of this study. The trainees work as teachers at one of the vocational high schools in Bandung, Indonesia. The number of trainees was 18 trainees and all of them filled out questionnaires. This indicates that the sample used was suitably representative.

2.2 Instrument of the Study

The instruments used were a questionnaire and a paper-based final test. The questionnaire was developed by referring to the study of Hajjar and Alkhanaizi (2018) with minor modifications. The first part of the questionnaire was to get information about the demographics of respondents (4 indicators). In addition, the second part of the questionnaire was to ask respondents about their perceptions of several training program parameters including TM (4 indicators), TA (4 indicators), FA (3 indicators), TPS (3 indicators), and PM (4 indicators). The degree of agreement among the respondents to the questionnaire's questions was measured using Likert-type scales. The questionnaire's scale ranged from 1 for strongly disagreeing to 4 for strongly agreeing. Furthermore, a paper-based final test was developed by each trainer for six modules to identify the understanding of trainees. The modules consist of coagulation and flocculation, sedimentation, filtration, reverse osmosis, aerobic waste treatment, and

anaerobic waste treatment. The final test score was used as primary data for training effectiveness (TF). The scale of the final test score was based on 1 = 50-60, 2 = 60-70, 3 = 70-80, and 4 = 80-100.

2.3 Data Analysis Techniques

The statistical package for social sciences (SPSS) software was used to analyze the data. The following are the steps in data analysis.

1. Instrument Test

a. Validity Test

The validity test aims to find out whether the questions in the questionnaire can describe what will be studied. The validity test was conducted by comparing the value of the r table against the value of the r count. If the value of the r table is smaller than the r count, it can be inferred that the questionnaire statement meets the validity test. In this study, a validity test was carried out using the Pearson correlation.

b. Reliability Test

The reliability test aims to measure the reliability of the questionnaire, which is indicated by the consistency of respondents' answers to questions in the questionnaire. The formula applied to test this instrument is the formula of Cronbach's alpha. If the value of Cronbach's alpha > 0.70 , it is stated as reliable.

The questions in the questionnaire were expressed by the following codes:

TM 1: Training content is delivered in a good sequence

TM 2: Training content is well organized

TM 3: The trainer provides comprehensive training content in the form of theory and practice

TM 4: The topics covered are relevant to the trainee's needs

TA 1: The training place is conveniently located

TA 2: There is adequate space for all trainees

TA 3: Training space free of noise

TA 4: There are comfortable seats for all trainees

FA 1: The laboratory is equipped with adequate equipment

FA 2: Practicum materials are available as needed

FA 3: The practicum instructions have clearly presented the work procedure

TPS 1: The schedule of the training program is clear and thorough

TPS 2: The allocated time is adequate

TPS 3: The training program's goals and objectives are clear

PM 1: Trainers use audiovisual aids

PM 2: Trainers communicate dynamically, fluently, and vigorously

PM 3: Trainers engage the trainees during the training program

PM 4: Trainers create a conducive and interesting training atmosphere

2. Analysis Prerequisites Test

Analysis prerequisites test was carried out by using the normality test. The normality test aims to ensure whether the residual value is distributed or not. For small sample sizes, it is better suited to utilize the Shapiro-Wilk test for the normality test. For the data to be considered normal, the significant result of the Shapiro-Wilk test must be greater than 0.05.

3. Hypothesis Test

The strength of a relationship between two parameters-the independent parameter and the dependent parameter-was determined using correlation analysis. In addition, the influence of independent parameters on a dependent parameter was also determined using regression analysis. The research hypothesis is as follows.

H1: what is TM that has a positive correlation with TF?

H2: what is TA has a positive correlation with TF?

H3: what is FA has a positive correlation with TF?

H4: what is TPS has a positive correlation with TF?

H5: what is PM has a positive correlation with TF?

3. Results

3.1 Demographic of Respondents

The demographics of the respondents are of interest to the researchers in this section. Demographics are quantifiable statistics about a specific population. Demographic mapping is essentially a practice of generalizing population characteristics. This research work includes demographic characteristics such as age, gender, educational level, and work experience.

3.1.1 Age of Respondents

Out of the total sample of 18 teachers, the majority (66.7%) were found to be between the ages of 26 and 45, indicating that they have the potential to work for a longer period of time and can focus on training and development. According to Table 1, there was no sample that was between the ages of 18 and 25 years old, and 33.3% were over the age of 45.

Table 1: Age of Respondents

Age	Response	Percentage
Between 18-25	0	0.0
Between 26-45	12	66.7
Above 45 years	6	33.3
Total	18	100.0

3.1.2 Gender

According to the Table 2, female respondents exceeded that of male respondents, 13 to 18 teachers of various designations. Table 2 indicates that 72.2% were females and 27.8% were males.

Table 2: Gender

Gender	Response	Percentage
Male	5	27.8
Female	13	72.2
Total	18	100.0

3.1.3 Educational Level of Respondents

Table 3 shows the educational level of the respondents. It means that 22.2% of the participants hold postgraduate degrees, while 77.8% hold undergraduate degrees. These findings suggest that this region has a good number of well-qualified and skilled teachers, which can have a greater impact on students' academic performance.

Table 3: Educational Level

Educational Level	Response	Percentage
Bachelor	14	77.8
Postgraduate	4	22.2
Total	18	100.0

3.1.4 Work Experience

Teacher tenure indicated that 88.9% have more than 5 years of teaching experience, 11.1% have 3-5 years of teaching experience, and none have little experience or less than 3 years of experience. This finding indicates that teachers have sufficient experience and understand how to improve their productivity following training and development.

Table 4: Work Experience

Educational Level	Response	Percentage
Less than 3 years	0	0.0
3-5 years	2	11.1
More than 5 years	16	88.9
Total	18	100.0

3.2 Data Analysis

The validity test is implemented at the beginning to find out whether the questions on the questionnaire can describe what will be studied. Reliability test is used to determine whether the respondent can answer the questions in the questionnaire consistently. Weighted mean, Pearson's r , and regression were the statistical instrument that applied in this study. The weighted mean was applied in this study to calculate the central tendency on every aspect of the questionnaire. Similarly, correlation test was applied to determine the connection involving the independent parameters (TM, TA, FA, TPS, and PM) and the dependent parameter (TF). Furthermore, linear regression was implemented to investigate the influence of the independent parameters on the dependent parameter. In this study, regression is required to inspect the connection of independent parameters to the dependent parameter. In addition, standard deviation was assigned to the questionnaires to measure the trainee' perceptions of various aspects. The results of each statistical test performed are as follows:

3.2.1 Validity Test

Table 5 shows that each statement instrument has a total of 18 statements originating from 5 parameters, namely training materials (TM), training atmosphere (TA), training facilities (FA), training plan and schedule (TPS), and presentation mode (PM). The overall value of the r table is smaller than the r count, where the r table value is 0.468 at a significance value of 0.05 so that it can be presumed that the whole questionnaire statement instrument meets the validity test.

Table 5: Validity Test Results

Parameter	Indicator	R_{count}	R_{table}	Result
Training Materials (TM)	TM1	.723	.468	valid
	TM2	.759	.468	valid
	TM3	.867	.468	valid
	TM4	.765	.468	valid
Training Atmosphere (TA)	TA1	.630	.468	valid
	TA2	.650	.468	valid
	TA3	.785	.468	valid
	TA4	.692	.468	valid
Training Facilities (FA)	FA1	.545	.468	valid
	FA2	.785	.468	valid
	FA3	.759	.468	valid

Training Plan Schedule (TPS)	TPS1	.759	.468	valid
	TPS2	.742	.468	valid
	TPS3	.777	.468	valid
Presentation Mode (PM)	PM1	.742	.468	valid
	PM2	.867	.468	valid
	PM3	.867	.468	valid
	PM4	.855	.468	valid

3.2.2 Reliability Test

Table 6 shows that all the statement instrument items submitted on the research parameters, namely training materials (TM), training atmosphere (TA), training facilities (FA), training plan and schedule (TPS), and presentation mode (PM) are called reliable because all have Cronbach alpha results > 0.70

Table 6: Reliability Test Result

Parameter	Cronbach Alpha	Standard Alpha	Cronbach Result
TM	.876	.700	reliable
TA	.727	.700	reliable
FA	.840	.700	reliable
TPS	.857	.700	reliable
PM	.886	.700	reliable

3.2.3 Normality Test

The lopsidedness and kurtosis of the parameters in this study need to be investigated, Shapiro-Wilk test for normality test is the most appropriate for small sample size, this study sample size is only 18. When conducting hypothesis testing, it is critical to test the normality of the data for the reason that abnormal distribution of data has a large impact on the overall result. For the data to be considered normal, the statistic value of the Shapiro-Wilk test must be larger than 0.05. In case the significance value is less than 0.05, it is indicated that the data differs extensively from a normal distribution. The Shapiro-Wilk test results (Table 7), with all samples scoring larger than 0.05 and values as follow .638, .609, .845, .595, .676, and .697, indicating that all samples are deemed within normal distribution.

Table 7: Shapiro–Wilk Tests

	Statistic	df	Significance
TM	.638	18	.000
TA	.609	18	.000
FA	.845	18	.007
TPS	.595	18	.000
PM	.676	18	.000
TM	.697	18	.000

3.2.4 Perception of Respondents on Each Parameter

Table 8 shows how respondents felt about each parameter. Each statement was evaluated by computing their mean and standard deviation. The details were represented in Table 6. The findings indicate that the participants are satisfied with the training materials from the training programs, agreed on the TA, approved on the FA, agreed on

the TPS, had a positive perception of the speakers' presentation mode when operating training programs, and the trainees test results as the training effectiveness parameter is comply with the questionnaire response.

Table 8: Perceptions of Respondents on Each Statement of Questionnaire

Question	M	SD
TM1	3.78	.428
TM2	3.78	.428
TM3	3.78	.428
TM4	3.83	.383
TA1	3.33	.594
TA2	3.61	.502
TA3	3.83	.383
TA4	3.89	.323
FA1	3.83	.383
FA2	3.83	.383
FA3	3.78	.428
TPS1	3.78	.428
TPS2	3.61	.502
TPS3	3.78	.428
PM1	3.56	.616
PM2	3.78	.428
PM3	3.78	.428
PM4	3.72	.461
TF1	3.22	1.114
TF2	2.78	.732
TF3	3.28	.461
TF4	3.17	.985
TF5	3.72	.461
TF6	3.56	.511

3.2.5 Correlation Test

The significance of the linear relationship involving independent and dependent parameters was determined using a correlation test. Table 7 shows that all independent parameters, TM, TA, FA, TPS, and PM, have a positive connection with training effectiveness. As shown in Table 9, the independent parameters (TM, TA, FA, TPS, and PM) and the dependent parameter TF have statistically significant correlations.

- The linear correlation of TM and TF show a fair positive value ($r = .504^*$, $p = .033 < .05$), can be interpreted as significant.
- The linear correlation of TA and TF have a good positive value ($r = .811^{**}$, $p = .000 < .01$), can be interpreted as significant.
- The linear correlation of FA and TF shows a fair positive value ($r = .490^*$, $p = .039 < .05$), can be interpreted as significant.
- The linear correlation of TPS and TF display a good positive value ($r = .636^{**}$, $p = .0005 < .01$), can be interpreted as significant.
- The linear correlation of PM and TF indicate a fair positive value ($r = .544^*$, $p = .020 < .05$), can be interpreted as significant.

Table 9: Correlation Between Training Effectiveness with Each Independent Parameter

		TM	TA	FA	TPS	PM
TF	R	.504*	.811**	.490*	.636**	.544*
	Significance	.033	.000	.039	.005	.020

3.2.6 Linear Regression Analysis

This section investigates how substantial each of the independent parameters (TM, TA, FA, TPS, and PM) explains the result of the dependent parameter, TF. Furthermore, it simplifies the impact of each parameter on TF. To accomplish this, the coefficient of determination and test its significance, as well as construct the regression line and review its slope need to be done. R^2 denotes the change of the dependent parameter Y by explained it as the portion of the independent parameter X. The coefficient of determination (R^2) as the result of the linear regression linking independent and dependent parameters is shown in Table 10. The result in training effectiveness can be defined by a significant portion of the result in training parameters: TM (25.4%), TA (65.7%), FA (24.0%), TPS (40.4%), and PM (29.5%). Finally, the regression line will determine whether there is enough indication that each of the independent parameter's TM, TA, FA, TPS, and PM implicate the result of the dependent parameter training effectiveness. Table 7 demonstrates that each independent parameter has a positive influence on training effectiveness (all coefficients are positive), and that this outcome is significant because each p value is less than 0.05, indicating that varied number of the predictor's value are resulted to difference in the dependent parameter value obtained. The regression lines' equation is defined as follows:

$$TF = 0.780 + 0.335TM,$$

$$TF = 0.218 + 1.208TA,$$

$$TF = 0.321 + 0.722FA,$$

$$TF = 0.224 + 0.770TPS,$$

$$TF = 0.268 + 0.694PM.$$

These findings indicate that the above-mentioned models' tests revealed a positive, significant connection of the studied parameters— TM, TA, FA, TPS, and PM —on the effectiveness of the training system.

Table 10: Coefficient of Determination Between Each Parameter and Training Effectiveness.

		TM	TA	FA	TPS	PM
TF	R^2	.254	.657	.240	.404	.295
	significance	.033	.000	.039	.005	0.02

Table 11: Coefficients of Each Parameter in a Regression Line.

		TM	TA	FA	TPS	PM
	Constant	.780	.218	.321	.224	.268
TF	Coefficient	.335	1.208	.722	.770	.694
	Coefficient significance	.033	.000	.039	.005	.020

4. Discussion

This wastewater treatment training had a goal to improve the competencies of teachers from one of the vocational high schools in Bandung, Indonesia. This is in line with the opinion of Karim et al. (2109) that the training program is one of the crucial factors in improving people's performance. To identify the parameters influencing the training effectiveness of its training, a survey was conducted on trainees.

According to the results of the survey, trainees satisfied with the training material (TM), agreed on the training atmosphere (TA), approved of the training facilities (FA), agreed on the training plan and schedule (TPS), as well as had a positive perception of the speakers' presenting mode (PM). The average value of the Likert scale ranges from 3.33 to 3.89 of 4. It reflected that the training program satisfied the trainee's expectations from their point of view. It occurred because this training program was held by considering the needs of trainees that had delivered at the evaluation meeting of the previous year's training program. The trainees suggested to have offline training as a continuation and follow-up of the online training program that was implemented in 2021. These results are supported by the study of Brimstin and Hester (2015) that the evaluation of a training program is to identify how the program can be improved. Besides that, the training effectiveness depends on well design and implementation

of a good training program (Farjad, 2012). This training was held based on the results of the previous year's evaluation and was well prepared by involving lecturers and laboratory staff who are experienced in the field of wastewater treatment.

TM and training effectiveness has a fair positive linear correlation ($r = .504^*$, $p = .033 < .05$). This implies that there is a positive influence of TM on training effectiveness. It occurred because the training content was easily understood by trainees and further can improve their performance. In this training program, trainers delivered training content in a good sequence and provided comprehensive training content in the form of theory and practice. In addition, the topics about wastewater treatment are very important for the trainees and can improve their knowledge and skills. It is similar to the view of Driskell (2012) as well as Punia and Kant (2013), in which the training content affects the training outcomes.

TA and training effectiveness has a good positive linear correlation ($r = .811^*$, $p = .000 < .05$). This implies that there is a positive influence of TA on training effectiveness. It occurred because the training program was carried out in the laboratory in which the capacity was sufficient and the atmosphere was comfortable. As pointed out by Hutchins (2009), the training atmosphere has significant character in training transfer. In addition, Venkatesh and Speier (2000) pointed out that a training atmosphere positively helps to enhance workability.

FA and training effectiveness ($r = .490^*$, $p = .039 < .05$) as well as TPS and training effectiveness ($r = .636^{**}$, $p = .0005 < .01$) have a fair positive linear correlation. These imply that there is positive influence of FA on training effectiveness as well as TPS on training effectiveness. The results correspond to the statement Shakila (2014), which reviews that the training will be effective if all of these conditions such as the training plan and training facilities are satisfied provided. In this program, a pre-training meeting was conducted before the implementation of the main training to explain the plans and schedules according to the time of the trainees and to convey practical instructions before the laboratory activities are carried out.

PM and training effectiveness has a fair positive linear correlation ($r = .544^*$, $p = .020 < .05$). This implies there is a positive influence of PM on training effectiveness. This result is in line with the study of Alshuwairekh (2016) that the parameter of the trainer is positively correlated to the employee's performance. According to Lin and Shariff (2016), the quality of the trainer will have an impact on how effective the training program is. In this training program, all trainers have competence in the field of wastewater treatment and have experience as a lecturer of wastewater treatment practicum, so the training was conducive and interesting. Based on Mohanty et al. (2019), the success of a training program can be achieved because the trainer can explain the program objectives, training materials, and benefits; encourage the trainees to be involved during the training program; enlighten the ideas and clarify misunderstandings; do the excellent presentation; answer the question clearly; and use audio-visual aids.

The coefficient of determination for the linear regression between TM and training effectiveness is 0.254, TA and training effectiveness is 0.657, FA and training effectiveness is 0.240, TPS and training effectiveness is 0.404, and PM and training effectiveness is 0.295. These findings show that the independent parameter TM explained 25.4% of the variation in the training effectiveness, the independent parameter TA explained 65.7% of the variation in the training effectiveness, the independent parameter FA explained 24.0% of the variation in the training effectiveness, the independent parameter TPS explained 40.4% of the variation in the training effectiveness, and the independent parameter PM accounted for 29.5% of the variation in the training effectiveness.

5. Conclusion

The findings imply the respondents or trainees have positive perceptions of TM, TA, FA, TPS, and PM. It can be concluded that the training program held by Politeknik Negeri Bandung for teachers from one of the vocational high schools in Bandung met their expectations. Additionally, it found that there is positive linear relationship between the training effectiveness as a dependent parameter and the five independent parameters (TM, TA, FA, TPS, and PM). The results of the study are valuable in encouraging organizations that hold training to take these parameters into account when carrying out similar training.

References

- Alshuwaikeh, K. N. (2016). The Effectiveness of The Training Programs on Employees Performance: An Empirical Study at Private Sector Companies in Saudi Arabia. *International Journal of Business and Management Review*. 4(9): 1-23.
- Apuke, O. D. (2017). Quantitative Research Methods: A Synopsis Approach. *Arabian Journal of Business and Management Review (Kuwait Chapter)*. 6(11): 40-47.
- Brimstin, J. and Hester, A. (2015). Training Evaluation: Knowing What to Measure. Retrieved from <https://www.trainingindustry.com/content-development/articles/training-evaluation-knowing-what-to-measure.aspx>
- Budiatuti, H., Trirahayu, D. A., Paramitha, T., Soeswanto, B., Kusumawati, E., Indarti, R., Widyanti, E. M., & Ghozali, M. (2022). Improving the Competency of Vocational School Teachers through Online Training. <https://doi.org/10.2991/assehr.k.220101.014>
- Budiatuti, H., Trirahayu, D., Paramitha, T., Indarti, R., widyanti, E., Marlina, A., Widiyastuti, E., & Wellid, I. (2021). Training of Competency Test Modules Conducted in LSP-P1 Politeknik Negeri Bandung. Proceedings of the 1st International Conference on Social Science, Humanities, Education and Society Development, ICONS 2020, 30 November, Tegal, Indonesia. <https://doi.org/10.4108/eai.30-11-2020.2303707>
- Driskell, J.E. (2012). Effectiveness of deception detection training: a meta-analysis. *Psychology, Crime & Law*. 18(8): 713-731.
- Farjad, S. (2012). The Evaluation Effectiveness of Training Courses in University by Kirkpatrick Model (Case Study: Islamshahr University). *Procedia-Social and Behavioral Sciences*. 46: 2837-2841.
- Hajjar, S. T. E. and Alkhanaizi, M. S. (2018). Exploring the factors that affect employee training effectiveness: A case study in Bahrain. *SAGE Open – Research Paper*. <https://doi.org/10.1177/215824401878303>
- Hutchins, H. M. (2009). In the Trainer's Voice: A Study of Training Transfer Practices. *Performance Improvement Quarterly*. 22(1): 69-93.
- Karim, M., Choudhury, M. M., and Latif, W. B. (2019). The Impact of Training and Development on Employees' Performance: An Analysis of Quantitative Data. *Noble International Journal of Business and Management Research*. 03(02): 25-33.
- Lin, A. and Shariff, M. Y. (2008). Factors Affecting Training Effectiveness. A Study of Semiconductor Wafer Fabrication Industry in Malaysia. The 4th National Human Resource Management Conference.
- Mohanty, P. C., Dash, M., Dash, M., and Das, S. (2018). A Study on Factors Influencing Training Effectiveness. *Revista ESPACIOS*. 40(2).
- Punia, B.K. and Kant, S. (2013). A Review of Factors Affecting Training Effectiveness Vis-à-vis Managerial Implications and Future Research Directions. *International Journal of Advanced Research in Management and Social Sciences*. 2(1). 151-164.
- Shakila, P., (2014). A Literature Review and Reports on Training and Development. *The International Journal of Management*. 3 (1): 23-30.
- Venkatesh, V. and Speier, C. (2000). Creating an effective training environment for enhancing telework. *International Journal of Human-Computer Studies*. 52(6): 991-1005.

Examination of Yao Henglu's Artistic Development and the Influence on Chinese Contemporary Music Composition

Song Kexin¹, Phiphat Sornyai²

¹ Ph.D. Student, College of Music, Mahasarakham University

² Assoc. Prof., College of Music, Mahasarakham University

Correspondence: Phiphat Sornyai, College of Music, Mahasarakham University, Kantharawichai, Maha-Sarakham, 44150, Thailand. E-mail: phiphat.s@msu.ac.th

Abstract

The qualitative research method is used in this study. The objectives were to: 1) investigate Yao Henglu's artistic developments. 2) Examine the influence of Chinese contemporary music. This study selects six music works composed by Professor Yao Henglu, using the literature research method and the field investigation method. The method is then used to sort out Yao Henglu's music composition developments and the formation of music composition thought. The results of the research are as follows: 1) Yao Henglu's six musical works are created by combining traditional Chinese music elements with modern western composition techniques, particularly the theory and practice of three-pitch arrangements as well as the connotation of latent tonality in tonal music. 2) Through analysis, the influence of Yao Henglu's music works on modern Chinese music creation aids musicians in understanding modern music and promotes the development of modern western composition techniques in China. Yao has developed musical talents and created the foundation for music analysis through composition practice. Yao preserves his academic vitality and influence, drives curriculum reform, and promotes the development of modern music analysis systems and the development of modern music creation.

Keywords: Investigation, Yao Henglu, Chinese Contemporary Music, Chinese Music Composition

1. Introduction

In the middle and late 19th century, with the trend of world music emerging with the characteristics of diversification, the combination of western composition technique and Chinese national music elements has become a new way for contemporary Chinese composers to explore (Wen-Chung, 1971; Jing, 1991; Lee, 2006; Jang, 2010; Jiao, 2014; Li, 2019; Deng, 2022). Professor Yao Henglu returned from abroad to promote western modern composition techniques and apply them to Chinese modern music composition, thus promoting Chinese modern music composition and academic research. Therefore, he is a "scholar composer" with milestone significance. Yao Henglu was a doctor who graduated from the University of Leeds in the UK and works as a professor and doctoral supervisor at the Department of Composition of the Central Conservatory of Music of China (Wang, 2021). He was the project leader of "Analysis System Research on Contemporary Western Composing Techniques" in the "Trans-century Excellent Talents Training Plan" of the Ministry of Education of China. In the

history of modern music development in China, he was the first to set up the professional course of "Modern Composing Techniques" at the Central Conservatory of Music of China, breaking the barrier between traditional and modern composing techniques. He guided practice through theory and applied it in modern composition, paving the way for a creative path of integrating western modern composition techniques with Chinese traditional music, having a significant influence and promotion of Chinese modern music composition (Wai-Ling, 2000).

His academic activities were frequent, and he had great social influence. From 1996 to 2001, he gave lectures at the Conservatory of Music of Shanxi University, the Shenyang Conservatory of Music, the Sichuan Conservatory of Music, the Wuhan Conservatory of Music, the Xinghai Conservatory of Music, and the Xi'an Conservatory of Music. While he was studying at the University of Leeds in the UK, his personal works were performed there many times. He paid an exchange visit to the Chinese University of Hong Kong in 1999. In 2000, he went to Seoul, South Korea, to participate in the "China-South Korea Music Week" performance. In 2001, he performed his own works in the Beijing Concert Hall and the Zhongshan Concert Hall, respectively. In 2002, he was funded by the British Academy and worked as a visiting scholar at the University of Southampton in the UK. During this period, he had extensive exchanges with music circles and music institutions in the UK, Germany, Austria, and other countries. In the past few years, he has organized an exchange concert of new music works between China and South Korea with Korean composers every year. The participating countries include China, South Korea, and Japan (Schröder, 2022).

These academic views have greatly influenced a group of music composers and played a guiding role in their composition. From the theoretical level of music analysis theory, tone set analysis theory, twelve-tone sequence analysis theory, musicology theory, Chinese national tonality theory, and so on, this paper comprehensively and deeply introduces Yao Henglu's modern composition techniques (Yung, 1996; Chou, 2008; Hoi-Yan, 2011; Huang, 2015). He uses atonality, pantonality, twelve-tone composition techniques, and other modern composition techniques and applies them to music creation. It provides a theoretical research reference for learners to analyze and interpret Chinese and Western modern music works. This study comprehensively and deeply introduces Yao Henglu's modern composition techniques from music analysis theory, pitch class set analysis, twelve-tone sequence analysis theory, musicology theory, and Chinese national mode theory. He applied atonality, pantonality, and twelve-tone composition techniques to music composition, providing theoretical research reference value for learning the analysis and interpretation of modern music works in China and the West. The composition track of each stage of China's new music development after the reform and opening up could be recorded by studying the modern music works composed by Professor Yao Henglu, which not only have strong academic value but also show the timing characteristics of Chinese traditional music culture, laying a theoretical foundation for music researchers in previous dynasties to study and analyze the composition techniques of China's modern music works (Chen, 1985; Kouwenhoven, 1992; Li, 2003; Tenzer, 2003; Cheong & Hong, 2018; Wang, et al., 2022).

Based on the above reasons, the researcher studied Yao Henglu's life background and artistic composition development process, which summarized the characteristics of Yao Henglu's modern music composition techniques and music composition ideas and their impact on China's modern music composition through the analysis of his six modern music works, to provide the author with creative ideas and experience in future composition research.

2. Method

The research methods of this article are as follows: 1) Documentary data method: through collecting, sorting out, and identifying existing documents and forming a scientific method of understanding by studying these data. 2) Field investigation method: Field investigation is the basic method to obtain first-hand information. 3) Qualitative research method: Explain the collected data (Oun & Bach, 2014).

2.1 Key informants

Investigating the composer's artistic background and creative development process, as well as interviewing the composer, is the greatest way to understand the creative objective of his music works and the method of combining his works using modern composition techniques.

2.2.1 Mr. Yao Henglu. The criteria for selecting key informants are:

- 1) Professor Yao Henglu is a famous music theorist and composer in China. The six modern music works he composed are representative works as well as experimental works in that he combines western modern school composition technique with Chinese national music elements. In China, modern music composition has pioneering experimental significance. It opened a way to explore modern composing techniques in China.
- 2) Professor Yao Henglu is a teacher whom the author is familiar with. The author is very interested in his theoretical research results and his musical works. We have a certain intersection in the research field, and we also have certain communication and exchange in academic research and music creation. Professor Yao Henglu has given me great help and laid a solid theoretical foundation for my composition.
- 3) The author has many academic materials, such as music literature, video, audio, music works, and other academic materials by Professor Yao Henglu. The author can save a lot of time and facilitate an in-depth study by collecting data.

Through an interview with Professor Yao Henglu, he recommended to me six representative modern music works created by him, as follows:

- 1) Chamber music "recalls" atonal sequence, pitch-class set, and interval writing.
- 2) Orchestral music, "Rainbow," twelve-tone music (post-romantic style)
- 3) Chamber music "Triptych of Yang Guan" Pantonality
- 4) Chamber music, "The Mountain Tunes," atonality, interval writing, accidental music
- 5) Chamber music "Bangzi Tune": Chinese national linear thinking harmony
- 6) "Stylistic Variation for BA BAN," Piano Solo -- Style Grip

The reasons why chose these six musical works are as follows: 1) as an important composer and theorist in modern China, Professor Yao Henglu's works enjoy a certain reputation throughout the country. Many scholars recommend the author study Professor Yao's works. 2) These six works reflect the development status and creative thinking of modern Chinese music composition at a certain level. These works show different modern composition techniques, apply creative thinking combined with Chinese traditional music elements, and study the development path and musical characteristics of Chinese modern music composition, which can provide creative ideas and experience for researchers in the field of composition in the future.



Figure 1: Mr. Yao Henglu

Source: Song Kexin, (2022)

2.2.2 The casual informant and general informant.

In addition, the author also interviewed Professor Gao Weijie of the China Conservatory of Music, Ms. Liu Changjie, and Dr. Huang Yanjun, a student of Professor Yao Henglu. Through interviews with the above-mentioned three people, the author understands Yao Henglu from different angles (Weijie, 2015).

1) Mr. Gao Weijie, who graduated from the Sichuan Conservatory of Music in 1960, is now a professor and doctoral supervisor at the China Conservatory of Music. He once served as the director of the composition department of the Sichuan Conservatory of Music, the director of the composition department of the China Conservatory of Music, the librarian, and the chair of the Editorial Committee of people's music. He founded and served as the president of the Composition Exploration Society of composers, the first modern music group in China. Gao Weijie has published or performed more than 40 works since the late 1950s. His adapted and arranged works involve symphonies, dance dramas, chamber music, concertos, solos, vocal works, and other genres. He has performed, participated in competitions, and won awards at home and abroad many times. In "On the Structure and Classification Of Scales" and "The Matching Of Pitch Class Sets," he expounded two theoretical systems, "non-octave cyclic artificial scales" and "the matching of pitch class sets," and used these two techniques to create a number of excellent works. Yao Henglu and Gao Weijie, both Chinese modern music composers and theorists, have in common that they have never completely abandoned the traditional composition techniques but integrated the modern composition techniques into the traditional composition techniques and adapted and composited several excellent music works, which provides theoretical and technical support for the composition of current music works (Lu Lu, 2009).



Figure 2: Mr. Gao Weijie
Source: Song Kexin, (2022)

2) Ms. Liu Changjie, in 2018, played the stylistic variation for BA BAN composed by Professor Yao Henglu. She explained that this work adopts a well-known tune card from China, making it a theme variation. She believes that this variation is more than just a variation of the music theme, but emphasizes the difference of "music style" in each variation, particularly the change of harmony language and rotation habit as a result of the change of multi-part technique, which causes the music to change from the typical Chinese statement as the theme of the entire music: from western Baroque style, classical, romantic, impressionist New classicism, expressionism, and so on different styles, to accidental. Through the interview with Ms. Liu Changjie, we will further understand the works composed by Professor Yao Henglu and provide help for the analysis of the works.



Figure 3: Ms. Liu Changjie
Source: Song Kexin, (2022)

3) Ms. Huang Yanjun, born in 1982, is now a young teacher at the School of Art of Guangxi University and holds a Ph.D. in composition from the College of Music at Mahasarakham University in Thailand. She went to the Central Conservatory of Music as a visiting scholar from 2012 to 2013 and studied under Professor Yao Henglu. During her study, Ms. Huang Yanjun studied modern composition techniques with Professor Yao Henglu, analyzed many modern music works, and laid a solid foundation for later theoretical research and modern music creation. As a student of Professor Yao Henglu, Ms. Huang Yanjun said that Professor Yao has a distinctive personal style. His modern musical works have a rich Chinese cultural heritage, both musical and technical. He is a landmark composer and music theorist. He occupies an important position in the field of Chinese music creation and the academic field and is known as a "scholar composer." The author gained a deeper understanding of Professor Yao Henglu's modern music works through her interview with Ms. Huang Yanjun, which will help me with my next thesis.



Figure 4: Ms. Huang Yanjun
Source: Song Kexin, (2022)

2.2 Data collection

The author searches for and acquires important information about Yao Henglu in the literature library by reading books and literacy materials to comprehend his life background and the development process of music composition. The author comprehends Yao Henglu's reference and learns from Western harmony methods and composition approaches through the examination of music score samples. The study naturally merges Chinese national and folk music elements with western composition techniques and describes the compositional qualities of the selected sample pieces. Going to the research site (Beijing) to investigate the composer's creative experience and ideas in depth through an on-site interview, observation, and video shooting. On this basis, the author conducts classification and interdisciplinary research, creates a thorough and realistic account of Professor Yao Henglu's creative traits and musical concepts, and describes its impacting elements on the evolution of Chinese music.

2.4 Data analysis

The information acquired from all the experiments is analyzed by the researchers using the theory of composition technique. The music score examples, and sound data acquired for work analysis were compiled. Using composition technique theory and the selected works as research objects, he studied Professor Yao Henglu's musical works, extracted all the information gathered, analyzed the problem's objective, and obtained the most comprehensive summary.

3. Results

3.1 Yao Henglu's artistic developments

Yao Henglu (1951–2022) was born in Beijing, China, and is a professor and doctoral supervisor of the composing department of the Central Conservatory of Music. China's famous composer, music theorist, and music educator.

In 1994, after graduation, Dr. Yao Henglu returned to the Department of Composition of the Central Conservatory of Music to teach and set up the main course of composition and teach specialized courses such as "Analysis of 20th Century Composing Techniques" and "20th Century Composing." Since 2001, his academic works and papers have emerged in large numbers (Sichen, 2019).

1) The main academic works include *Analysis of Composing Techniques in the 20th Century* (Shanghai Conservatory of Music Press, 2000); *A Study of Rutoslavsky's Accidental Composing Techniques* (Hong Kong Chinese Publishing House, 2001 edition, 2005 reprint); *Course of Modern Music Analysis Methods* (Hunan Literature and Art Publishing House, 2003); *Comprehensive Music Technique Analysis Course* (Higher Education Press, 2009); *Basic Training in Composing* (People's Music Publishing House, 2010).

2) More than 70 academic theses. The research field involves the analysis and research of the composition concept and techniques of modern and contemporary music works (such as the structural approach of Schoenberg's orchestra in "A Warsaw Survivor," the analysis of Rutoslavsky's "The Third Symphony," the composition concept of three kinds of pitch thinking, as well as the evolution of Schoenberg's early creation thinking and its far-reaching impact, and the special forms in contemporary works) (Kunjie, 2019). As an expert in the field of music composition and music analysis in the 20th century in China, he has composed many music works, published academic monographs and many academic theses, and cultivated a large number of music composition talents. He paved the way for modern Chinese composition and composition techniques to spread throughout the world. He is a landmark composer and music theorist and has made important contributions to Chinese music composition.

Yao Henglu's music composition, we can see that, based on traditional composition techniques, he used a lot of modern music composition techniques. He respected tradition and had a pioneering spirit. Through a lot of creative practice, he formed his own musical composition ideas:

- 1) In terms of composition techniques, the composition concept is based on the five-tone national consciousness and the modern consciousness of the twelve-tone serial system.
- 2) In the practice of blending semitone and national harmony, the first step is to follow the movement rules of traditional harmony functions and actively explore the application of national harmony and the practical value of modernity.
- 3) He paid attention to organizing music thoughts with Chinese flavor with fewer music materials and improved the sound logic in the process of music, which reflected that he inherited the essence of Chinese culture in the innovation of creating musical works.

In the field of composition techniques, the concept, method, and revolution of music composition start from the disintegration of tonality to the reconstruction of the new order of sequential music from the perspective of expression form; from the perspective of music writing methods, it is the result of a sharp revolution in the pitch system (Henglu, 2008). This is Professor Yao Henglu's opinion on the integration of modern music composition technique and multi-dimensional composition techniques. He believed that "the origin of the composition should be implemented more in its practical significance than in the results of conceptual reasoning." Composition techniques are developed through creative thinking. The relationship between the way of thinking and the implementation of techniques is like the relationship between the root and the branches. Finding and discovering the origin of things is the key to solving practical problems. These two paragraphs clearly express his view that, under the control of multiple pitch arrangements, multi-dimensional composition techniques should be rationally integrated with Chinese national music elements to achieve a new order of reconstructing sequential music.

From the standpoint of music creation practice, the concept determines the path and guides the path. The practice produces a situation where a hundred flowers bloom in music composition and diverse sound forms. When you listen to the modern music works composed by Professor Yao Henglu, you will feel not only kind and fresh but also mysterious and familiar. The reason is that most of his musical works use Chinese national music elements to develop musical ideas. In the use of modern music composition techniques, he fully integrates with Chinese national music elements, transforms, digests, decomposes, and reconstructs the traditional national memory and genes, and composites new music languages with individual unique thinking, ideas, and life experiences, fully absorbing the nutrition of western modern composition technique.

3.2 *The influence of Chinese contemporary music*

Professor Yao Henglu's music works have a profound influence on Chinese modern music composition and play a leading role in practice. According to the evaluation of many scholars, Professor Yao Henglu is a teacher with broad thinking and profound scholarship. On the one hand, he laid a solid foundation for the theoretical system during his doctorate study at the University of Leeds in England. He learned a lot of modern Western composition techniques and music analysis methods. On the other hand, he had lived in northern Shanxi for many years, and the elements of national folk music and local feelings were imperceptibly incorporated into his music. Professor Yao Henglu is a teacher with broad thinking and profound scholarship. On the one hand, he laid a solid foundation for the theoretical system during his doctorate study at the University of Leeds in England. He learned a lot of modern Western composition techniques and music analysis methods. On the other hand, he had lived in northern Shanxi for many years, and the elements of national folk music and local feelings were imperceptibly incorporated into his music. It can be said that Yao Henglu's rigorous theoretical thinking, deep academic foundation, and diverse work styles have an important impact on his music composition and teaching practice. At the same time, it also has a long-term impact on his students and the composition of modern Chinese music.

3.2.1 Western modern composition techniques were introduced in the middle and late 20th century.

With the increasingly frequent exchange of music and culture between China and the West, modern western composition techniques have broadened the artistic vision of Chinese composers. People have been exposed to new creative techniques, shown great interest, and made efforts to explore their unknown fields. Western modern composition techniques were gradually introduced into China in the middle and late twentieth centuries, thanks to the efforts of musicians (Zuqiang, 2000). Professor Yao Henglu was exposed to many modern music works of the 20th century during his doctoral study at the School of Music, University of Leeds, UK. These works use many modern composition techniques, such as the twelve-tone serial technique, pitch-class set, pan tonality, and latent tonality. During his stay in England, Professor Yao systematically studied modern music analysis methods. After his return to China, he set up a course in modern music analysis at the Central Conservatory of Music, which filled the gap in the teaching of modern music in China. The difference in music aesthetics inevitably leads to the difference between modern music and traditional music aesthetics. Traditional music appreciation methods and composition techniques are fundamentally different from modern music. In cultural pluralism, only by understanding its characteristics and mastering its laws can we respect the aesthetic differences presented by different cultural pluralisms. The introduction of the composition techniques of Western University only requires a deep understanding of the characteristics of modern composition techniques, which can be incorporated into the curriculum teaching system of the discipline and applied to the composition of actual music works.

After learning western modern composition techniques and modern music analysis methods, Professor Yao Henglu composed many modern music works in China. He systematically taught professional musicians the characteristics of modern music composition techniques, which promoted the development of western modern music composition in China. In particular, he composited modern music works with Chinese national style through the integration of multi-dimensional composition techniques—the integration of western modern composition techniques and Chinese national music elements—which helped professional musicians analyze and study his works carefully, summarize the rules, and composite more modern music works. This enables composers and music teachers to have more reflection and reference in the practice of modern music so as to promote the development of modern music in China and make do contributions to the continuous progress of world music culture.

3.2.2 The training of many music analysis and music composition talents in China.

Professor Yao Henglu trained many talents in music composition and music analysis when he was teaching in the composition department of the Central Conservatory of Music in China. He asked himself to teach every lesson well and train every student who loves composition well. Today, many of these students are major music teachers in colleges and universities across the country. The young composers he trained were active in various art festivals

and high-standard competitions and achieved fruitful results. Some outstanding students trained by Professor Yao Henglu are listed below:

1) Professor Xie Fuyuan was born in Leiyang County, Hunan Province, in November 1979. He graduated from the Composing Department of the Central Conservatory of Music with a master's degree and a doctor's degree. The doctoral thesis "Research on Alfred Schnittke's Symphony Creation" won the honor of being an excellent doctoral thesis at the Central Conservatory of Music. In 2009, he joined the Conservatory of Music of Hunan Normal University, mainly engaging in the theoretical teaching and research of composition technique. The research direction mainly focuses on western modern music and modern Chinese music. Professor Xie has presided over and participated in several projects of the Ministry of Education and at the provincial level; published more than 20 core papers; and published two monographs, *Research on the Composition of Alfred Schnittke's Symphony*, and *Research on the Composition of Alfred Schnittke's Grand Concerto*, which are important documents for studying the composition of Russian composer Schnittke at home and abroad. He has published a textbook, *Music Analysis: Music Score Collection*, which is now the designated textbook of many music colleges and universities. From September 2016 to September 2017, as a national visiting scholar, he studied with Professor Chen Yi, an American Chinese composer, at the Kansas City campus of the University of Missouri for one year. He has been recognized as the young academic backbone of Hunan Normal University and the young backbone teacher of Hunan Province. Professor Xie Fuyuan's article focuses on the theory of composition techniques and the analysis of musical works. Among them, the thesis *Blending of Multiple Composing Techniques: Analyzing Schnittke's The Third Concerto* introduced Schnittke's creative design of chord sequences composed of twelve large and small chords and took them as the core pitch materials of the whole song, thus organically unifying the multiple composition techniques within a framework and making the multiple composition techniques blend, thus forming a "complex style" integrating multiple style characteristics. This kind of compositional method by Schnittke is enlightening to composers in the era of multicultural interaction. Through the literature analysis of Professor Xie Fuyuan's academic thesis, under the guidance and influence of Professor Yao Henglu, who has a very solid foundation in the analysis vision of modern music works and the mastery of music analysis techniques, He inherited and developed modern music analysis methods, making great contributions to the development of modern music in China.

2) Ye Hongde, who was admitted to the Composing Department of the Central Conservatory of Music in 2003, studied modern composition techniques and music analysis under the guidance of Professor Yao Henglu. In 2006, he received a doctorate in literature with his graduation thesis, *Research on the Creation of Hans Werner Henze's Symphony*. In recent years, he has published more than ten academic papers in such journals as *Music Research*, *Journal of the Central Conservatory of Music*, *People's Music*, and *Chinese Music*; Many music works won prizes in the competition; "Theory and Practice of Music Analysis" (a series of papers) won the first prize of the Shandong Provincial Excellent Achievement Award of Culture, Arts, and Science in 2007; he undertook many national and provincial projects. He is now a professor in the Department of Composition at the China Conservatory of Music.

Table 1: The list of music analysis published by Ye Hongde is as follows:

No.	Title	Published Journal	Published time
1	Song without definite Rules, Form and Method are natural	Journal of central Conservatory of Music	Issue 2, 2012
2	Rational Rigor and Poetic Flourish -- A Study of Boulez's First Piano Music	Music study	Issue 1, 2012
3	Theory and Practice of Tonality Logic in Sonata Form	Music performance	Issue 4, 2011
4	An Analysis of Henze's Symphony No. 6	Journal of Tianjin Conservatory of Music	Issue 4, 2011
5	An Analysis of Henze's Symphony No. 9	Music and Performance	Issue 4, 2010
6	The Structure and Function of Hengce's "Moving Chords"	Journal of central Conservatory of Music	Issue 4, 2009
7	Chapter in The Study of Opera Music	People's music	Issue 5, 2008

No.	Title	Published Journal	Published time
8	The Mathematical Spirit of Equal Rhythm and its Expanded Application in the 20th Century	Poems new	Issue 3, 2008
9	Perspective, Style, Chain, Structure -- An Analysis of Symphony No. 1	Journal of central Conservatory of Music	Issue 4, 2007
10	Analysis of The Techniques of Henze symphony No. 5	Music performance	Issue 4, 2007
11	Structural Approaches to Free Atonal Music	Journal of Tianjin Conservatory of Music	Issue 4, 2007
12	The Key to Modern Music	People's music	Issue 4, 2007
13	Combinatorial Logic and Structural Function of Pitch Materials	Journal of Tianjin Conservatory of Music	Issue 2, 2006
14	Complementary Exploration and Practice of Music Analysis in the 20th Century	Music study	Issue 1, 2006
15	Deconstruction of logic, Mutual Integration of Techniques and Leap of style	Journal of Tianjin Conservatory of Music	Issue 3, 2005
16	On the History and Thinking Orientation of Music Analysis	Journal of central Conservatory of Music	Issue 3, 2004
17	Messiaen's Finite Shift Mode and its Application in Chinese Works	Chinese Music (Cooperation)	Issue 1, 2004
18	"Linear Thinking in music Analysis in the 20th Century"	Journal of Central Conservatory of Music (Cooperative)	Issue 3, 2003
19	The Role of Piano Music in Piano Teaching in the 20th Century	People's Music (Cooperation)	Issue 5, 2003
20	A Study of Liszt's Piano Sonata in B Minor	A small player	Issue 6, 2003
21	"The Penetration of structural Force in the Analysis of Music in the twentieth century"	Journal of Northwest Normal University	Theory edition 2003
22	Homology and Differentiation	Qilian Singing	Issue 5, 1998

3) He Qingtao is currently the deputy dean of the School of Music of the Shandong Academy of Arts, the director of the Department of Theoretical Composition, a professor of composition, and the tutor of master's degree students. He is a member of the Chinese Musicians Association, the University Music Alliance of the Chinese Musicians Association, and the Music Education Society of Chinese Colleges and Universities. He is a member of the Music Analysis Society of the China Music Association and the Shandong Musicians Association. For many years, he has mainly been engaged in the teaching, creation, and scientific research of composition and composition technique theory. His previous courses have included composition, analysis of works, music appreciation, folk music orchestration, orchestra method, piano accompaniment writing, orchestra rehearsal class (as conductor), modern music theory, 20th century music appreciation, modern music analysis, analysis of music literature techniques, etc. Art Practice: 1) Over the years, he has composed many musical works in various genres. Many instrumental works are included in the main works, including orchestral works Jian Jia, Breaking the Array, Characteristics of Qilu, saxophone, and orchestra. Dao Qing, clarinet solo Shanbei Customs, Sea, violin solo Song of the Wild Goose, zither solo Daguandeng; chamber music works: Lu Tune, Mei Di, He He; Many musicals: Little White Turtle, Baby, Young Shun, The Song of the Forest, The Song of the Swan, Health Together; Many choral works: The Bell of Return, and the unaccompanied chorus Yimeng Mountain Minor; dramatic music: How Far is Heaven; Vocal music works: nearly 100 vocal music works, including the solos Motherland, I Talk to You, Motherland Forever, Wandering, Huanxi Sand, Drunken Flower, Chinese Family, The Wind of the Earth, Love Together, 55 Red Candles, Love You in My Heart, Beauty Yu, Hear the Rain, etc. 2) Over the past few years, Professor He Qingtao has participated in various academic seminars many times, made conference speeches and paper discussions, participated in the research group of the key reform curriculum of Solfeggio organized by the Education Commission of Shandong Province, and presided over and participated in many national, provincial, and ministerial projects; He has written many theses, such as Music Analysis of Tippert's Double String Orchestra Concerto, Technical Research of Ligeti's "Six Piano Etudes," IV, Preliminary Exploration of the Composing

Technique of the Chinese Blowpipe Concerto "Divine Comedy," Modern New Tone Color Expression Characteristics, and Evolution of the Structure of the Violin Plate.

4) Li Ruchun, a male doctor who graduated from the composing department of the Central Conservatory of Music, is now an associate professor and master's supervisor at the Shandong Academy of Arts; a core member of the research team of "Taishan Scholars," a distinguished professor; and an external professor at Jinan University and Qilu University of Technology. His research fields include composition and composition technique theory, music analysis in the 20th century, modern music analysis technique, harmony, polyphony, orchestration, music culture, and other fields. Achievements of Li Ruchun's papers on music analysis:

Table 2: Li Ruchun's achievements in music analysis:

No.	Title	Published Journal	Published time
1	Tippett's Core Rhythm Vocabulary	The music	Issue 4, 2012
2	An Analysis of metronomic Techniques in the Composition of Tippit's Symphonies,	Shanghai Conservatory of Music Publishing House, "The First Symposium on Music Analysis"	First edition 2011
3	Structural Analysis of Three Shandong Folk Songs from the Perspective of Modern Music Analysis	Qilu Yichang Newspaper	Issue 1, 2011
4	The Contrast of Polarization and the Alternate Expansion of "Dynamic" and "Static"	The music	Issue 3, 2009
5	A chart analysis of schoenberg & LT; Piano Sketch 6 & GT; Op.19	Qilu Art Garden	Issue 2, 2008
6	A Study of polyphonic Structure in Tippit symphonies	The music	Issue 3, 2007
7	Wedding in Orkney with Sunrise & GT; Music Analysis	Journal of Nanjing University of the Arts	Issue 4, 2006
8	The Tonal Analysis of the Small Universe of Boating.	Yuefu New Voice	Issue 3, 2006
9	Lt; Lyrical Sketch & GT; Contribution of Composition Technique	Journal of Shandong Institute of Education	Issue 2, 2004
10	Grigg & LT; Anitra & GT; An Analytical Study	Journal of Shandong University of Arts	Issue 2, 2000
11	A Comparison of Artistic Songs between Huang Zi and Chen Tianhe	Outstanding Bachelor's Dissertation award of Shandong Province	In 1999,
12	Analysis and Research on composing Technique of Tippit's Four Symphonies	The dissertation	N/A

5) Xiong Xiaoyu, a male born in 1976 in Zhangshu, Jiangxi Province, is a member of the Communist Party of China. He is currently the dean, professor, and doctoral supervisor of the School of Music of Jiangxi Normal University, a doctor in the direction of work analysis in the composing department of the Central Conservatory of Music, and a visiting scholar at the Kansas City campus of the University of Missouri. He is an expert member of the National Art Professional Degree Postgraduate Education Steering Committee, a vice chairman of the National College Composition Theory Society, a vice chairman of the Jiangxi Musicians Association, an expert on aesthetic education in Jiangxi schools, a member of the Chinese Musicians Association, and a special creative member of the Central People's Radio Broadcasting Selected Songs. Professor Xiong Xiaoyu has presided over more than ten national, provincial, and ministerial projects: he has presided over one national social science fund key project in art, presided over and completed one youth literary and artistic composition support plan project of the China Federation of Literary and Art Circles, one provincial major horizontal topic, and five provincial and ministerial general project topics; he has published one CD album and four monographs (edits); his theses and treatises won the third and second prizes of the 16th and 17th Outstanding Achievement Awards of Social Sciences in Jiangxi

Province, respectively, and the second prize of Jiangxi Province; he has won many honorary titles such as "Excellent Lecturer", "Advanced Individual" and "Xi"

4. Discussion

Through the research for this study, we have combed the different musical style characteristics of the modern music works composed by Yao Henglu and then explored the cultural value and work connotation of the integration of modern music composition techniques and Chinese national music elements, which has great academic value for the development of Chinese modern music composition. It inherits and protects local music in the form of modern chamber music, deeply excavates local folk music materials, and explores new ways to protect and inherit Chinese folk music from the perspective of the integration of modern music composition and folk music materials. Based on previous analysis, this study makes an in-depth analysis of some of Yao Henglu's music works through modern music analysis methods and obtains a breakthrough in the theory of modern music works:

1) The use of multiple creative thinking Professor Yao integrated western modern composition techniques with Chinese national music elements in his musical work *Recall* by applying three types of thinking (pitch organization, interval, and vector) based on the western musical form structure framework. In harmony, the Chinese national pentatonic mode system is used, especially the national pentatonic and artificial modes. In terms of modern composition techniques, the use of the twelve-tone serial technique, pitch class sets, and pan-tonality has added modern color to the works. This endows modern music composition techniques with innovation and diversity of musical styles. The composition concept and intention have a profound impact on later generations of composers, providing a creative idea of "making the past serve the present and making foreign things serve China," realizing a new breakthrough in the localization of modern composition techniques in music composition, and guiding the direction and laying a theoretical foundation for subsequent modern music composers.

2) Using a classical Chinese aesthetic approach to composites. *Triptych* by Yang Guan, for example, combines the musical characteristics of the East and the West and employs a Chinese artistic conception approach to describe the ethereal artistic conception of ancient poetry. The principles of reproduction and the form of variation suite are used extensively at the level of composition technique. In terms of theme, it employs a combination of penetration and core interval and mode change. In terms of harmony, based on pentatonic harmony, the tendency toward semitones is strengthened. The *Mountain Tunes* reflect the characteristics of Chinese folk music. The overall music style is free and atonal. The core control of the whole song is established through the combination of interval and pitch class. The voice part and texture writing are mainly written by the traditional neo-classical music school and are interspersed with Debussy's texture style. *Bangzi Melody* is a chamber music work in local opera style. The structure of the music is short, with the characteristics of classical chamber music and the charm of opera music. *Bangzi Melody* is a ternary form structure with a main musical theme of pentatonic tone. *Stylistic Variation for BA BAN*, with the theme of "Old BA BAN," an Erhu Qupai of Peking Opera, is mainly composed of five tones, adopts a variety of modern composition techniques, and uses different musical styles throughout the history of music to form a quite interesting piano variation.

3) Professor Yao Henglu's modern music works have high humanistic research value and music academic practice value. Through the research, u's modern music works have high humanistic research value and music academic practice value. Through the research, analysis, and summary of the characteristics of the six modern music works studied in this study, the author will explore the charm of Professor Yao's works and the depth of humanistic feelings. The author will continue to study his works.

The modern western composition techniques used by Professor Yao Henglu to create musical works are relatively complex. Local folk singers or villagers who have not systematically learned professional theories cannot accept or enjoy such music to some extent. The recipients of such works are often professionally trained college music teachers, students, personnel engaged in modern music composition, or performers with certain theoretical knowledge. The public still needs time to understand and enjoy the beauty of modern music.

Acknowledgments

This research project was financially supported by Mahasarakham University.

References

- Chen, W. F. (1985). *History and development of theory of "lu": a translation of selected chapters of huang ti-pe'i's "perspectives of chinese music"*. University of North Texas.
- Cheong, W. L., & Hong, D. (2018). Sposobin Remains: A Soviet Harmony Textbook's Twisted Fate in China. *Zeitschrift der Gesellschaft für Musiktheorie. Journal of the German-speaking Society of Music Theory*, 15(2), 45-77.
- Chou, G. K. (2008). *Twelve-tone equal temperament: Prince Zhu Zhaiyu—his discovery and inspiration*. American Conservatory of Music.
- Deng, Y. (2022). The timbre relationship between piano performance skills and piano combined with opera music elements in the context of the internet of things. *Security and Communication Networks*, 2022, 1-14.
- Henglu, Y. (2008). The Creation Concept and Practice of Three Pitch Thinking -- The Integration of Traditional and Modern Composing Techniques. *Journal of Central Conservatory of music*, (03), 57-69+80. doi:10.16504/j.cnki.cn11-1183/j.2008.03.007.
- Hoi-Yan, W. (2011). Diversified Twelve-note Techniques in the Music of Luo Zhongrong. *The Musicology Review*, 7, 161-197.
- Huang, J., & Li, S. (2015, September). Discussion on Importance and Entry Point of Imitation Writing in Composition Instruction. In *2016 International Conference on Contemporary Education, Social Sciences and Humanities (pp. 426-428)*. Atlantis Press.
- Jang, S. H. (2010). *Interpretation of Extended Techniques in Unaccompanied Flute Works by East-Asian Composers: Isang Yun, Toru Takemitsu, and Kazuo Fukushima*. Doctoral dissertation, University of Cincinnati.
- Jiao, W. (2014). *Chinese and Western elements in contemporary Chinese composer Zhou Long's works for solo piano "Mongolian Folk-Tune Variations," "Wu Kui," and "Pianogongs"*. The University of North Carolina at Greensboro.
- Jing, J. (1991). The influence of traditional Chinese music on professional instrumental composition. *Asian Music*, 22(2), 83-96.
- Kouwenhoven, F. (1992). Developments in Mainland China's New Music: Part I: From China to the United States. *China Information*, 7(1), 17-39.
- Kunjie, Z. (2019). *Research on "tonality" thinking in Chinese serial music creation from 1980s to 1990s*. Master's thesis of Shanghai Conservatory of music. Zhoukunjie two thousand and nineteen.
- Lee, W. W. K. (2006). *Unpacking aspects of musical influence in three piano works by Chinese composers*. University of Michigan.
- Li, J. (2019). *The Preludes in Chinese style: three selected piano preludes from Ding Shan-de, Chen Ming-zhi and Zhang Shuai to exemplify the varieties of Chinese piano preludes*. The Ohio State University.
- Li, X. (2003). *Chen Yi's piano music: Chinese aesthetics and Western models*. University of Hawai'i at Manoa.
- Lu, L. (2009). Research on Gao Weijie's Modern Music Creation Techniques. *Shanghai Conservatory of Music Press*, P(45).
- Oun, M. A., & Bach, C. (2014). Qualitative research method summary. *Qualitative Research*, 1(5), 252-258.
- Schröder, L. O. (2022). *Treasonous repertoires: Performing collaboration and musical life in Japanese-occupied Beijing, 1937–1945*. Doctoral dissertation, University of Nottingham.
- Sichen, Y. & Yu, J. (2019). *Research about piano suite creation with Jin dialect-Heng-Lu Yao style*. Master's thesis, Central China Normal University.
- Tenzer, M. (2003). José Maceda and the paradoxes of modern composition in southeast asia. *Ethnomusicology*, 93-120.
- Wai-Ling, C. (2000). Music Theory International globe1. gif (3608 bytes). *The Online Journal of the Society for Music Theory*, 6(3).
- Wang, Y. (2021). *A Pedagogical Analysis of Henglu Yao's Microkosmos from Chinese Nationalities*. Doctoral dissertation, University of South Carolina.
- Wang, Z., Che, M., Yang, Y., Meng, W., Li, Q., Xia, F., & Li, W. (2022). Automatic Chinese National Pentatonic Modes Recognition Using Convolutional Neural Network. In *Ismir 2022 Hybrid Conference*.
- Weijie, G. (2015). Creating in "transformation" Notes on the creation of gangladio. *Music exploration*, 33(02), 3-7. Doi: 10.15929/j.cnki.1004-2172.2015.02.002.
- Wen-Chung, C. (1971). Asian concepts and twentieth-century Western composers. *The Musical Quarterly*, 57(2), 211-229.

- Yung, B. (1996). *Suspended Music: Chime-Bells in the Culture of Bronze Age China*. By Lothar von Falkenhausen. Berkeley, Los Angeles, Oxford: University of California Press, 1993. xxvi, 481 pp. \$70.00. *The Journal of Asian Studies*, 55(1), 161-164.
- Zuqiang, W. (2000). Introduction to the basic theory and practice of music technique analysis in the 20th century. *People's music*, 51(03), 48. doi:CNKI:SUN:RMYY.0.2000-03-025.

Learner's Perception in Using Social Media for Foreign Languages Acquisition

Shorouk Mohamed Farag Mohamed Aboudahr¹, Abderrahim Benlahcene²

¹ Faculty of Education & Humanities, Unitar International University. Email: shorouk@unitar.my

² Department of psychology, College of humanities and sciences, Ajman University, UAE. Email: a.benlahcene@ajman.ac.ae

Abstract

Social media use is a crucial component of modern education. The overuse of social media has completely captivated learners' attention. This study conducted to examine the perception of foreigner language learners toward utilization of social media. This descriptive study's data was gathered using a qualitative approach with a custom-made questionnaire. 60 students participated in this study. The study's findings demonstrated that learners' regular use of social media had a substantial impact on their performance. It has also showed that, and learners had positive attitude toward using social media in order to acquisition of foreigner language. Therefore, one of the educational tools that learners can use to improve their foreign language skills is social media. This study offers insights into how important of technology to support learner the integration and utilization of social media platforms as instructional tools in the context of acquisition foreign languages.

Keywords: Learner's Perception, Social Media, Foreign Languages

1. Introduction

The quick advancement of technology has aided the development of rapidly expanding social media tools, which are increasingly being used by students in social and academic settings. In Teaching and Learning, social networking sites are seen as beneficial in language acquisition because their community-centred design encourages meaningful interactions outside of the classroom and fosters the transmission of real language. Teaching and learning are currently being made more engaging and exciting through the use of technology (Manca, 2020). According to global digital statistics in 2017, with 10% annual growth, more than half of the world now uses smartphones and more than half of the world's web traffic comes from mobile phones with broadband mobile connections (Ceci, 2022). Similar to this, the 2016 International Telecommunication Union research shows that 84% of the world's population can access mobile broadband networks (3G or higher) and that 95% of people worldwide live in areas served by mobile cellular networks (ITU, 2020). Since the millennium generation tends to employ mobile technologies in all part of their lives, it goes without saying that modern educational procedures are being built and modified in response to these advancements.

There are various websites and platforms are affecting communication, information delivery, knowledge exchange, commerce, education, and all different aspects of life such as Facebook, YouTube, Twitter, WhatsApp, and telegram which becoming a part of the teaching and learning process (Rieger and Christoph, 2018; Bhatti et al., 2019; Amin et al., 2020). Several research studies have been carried out in the field of education to determine their efficacy in various fields. As young users of social media networks spend more than half of their days using and interacting on these networking sites using their language and communication skills, the influx of linguistic output on social media represents numerous opportunities for language learners to process language and obtain input (Al Jahromi, 2020).

As a result, face-to-face conversations have been supplanted by online chats and discussions, both written and spoken, which has had a significant impact on users' everyday language and linguistic abilities. The widespread use of smartphones, laptops, and tablets coupled with popular social media platforms may have made rich linguistic input available at the users' fingertips and helped to produce understandable second language output (Al Jahromi, 2020; Pikhart and Botezat, 2021). There aren't many studies that examine social media's effects on learning and education, particularly in the context of foreign language, despite the fact that it will undoubtedly have an impact on people's lives everywhere and that today's students are disinterested in traditional teaching methods and learning strategies. Determining the effect of social media on learning second language is the goal of the current study. Therefore, based on the background stated above, the researcher will further discuss how social media platforms can affect the learning of a foreign language positively.

2. Social Media and Learning foreign languages

The advancement of social media has widened the students' access to education through formal and informal learning environments (Herri & Gunawan, 2020). According to many authors, integrating advanced social media into educational settings will not only enable unrestricted communication and interaction between students and teachers as well as between students themselves (Blaine, 2019; Kazanidis et al., 2018), but will also help students become more interested in and motivated to demonstrate mastery of learning outcomes (Rozal et al., 2021). In the field of education, employing social media tools to enhance both formal and informal learning has particularly been advised in the literature.

According to Lambton-Howard et al., (2021), social media is generally conceded to be the most popular way to communicate and learn foreign languages. Students easily accept the integration of social media in educational practice. For example, Blaine (2019) and Simamora (2020) emphasised that the social media gives every student the opportunity to show independence in learning; The instructor controls the learning process in an interactive mode; Studies by Shodiyev (2022) identified the importance of social media as part of the linguistic educational environment in teaching a foreign language. There is constant and immediate feedback for both the teacher and the students; In a foreign language lesson, group interaction is planned, and the teacher facilitates the students' learning activities; You can develop your academic independence through a variety of online activities. Also, Social media, according to Chugh and Ruhi (2018), facilitates peer-to-peer learning, encourages the sharing of educational resources, and fosters an increase in student contact and participation. Yunus et al., (2019) also reported that the advantage of social media helps develop students' writing ability. Jenaibi and Mansoori (2022) contended that social media context allows learners to manage and maintain a learning space that facilitates their learning activities and connections to peers and social networks across time and place. To achieve this aim, the present work specifically seeks to investigate the following research objectives.

To investigate to what extent social media platforms can affect the learning of a foreign language positively.

To examine how foreign language learners use social media for learning second language.

To what extent social media influence learners' performance.

3. Theoretical Background

Social learning theory have been used to adopt social media in teaching and learning foreign languages. On the basis of social learning theory, a major tenet of the social learning theory advocates that people are impelled to

undertake and accomplish a task they feel confident in performing. The instinctive perception of behaviors that induce positive results depicts an individual's self-efficacy (Bandura, 1982; Schunk, 2011).

According to the behavioral theory about learning, learning always occurred within a social context. Learning Theories Knowledgebase Edgar (2012) states that According to Bandura's Social Learning Theory, people pick up knowledge from one another through modelling, imitation, and observation. The theory, which takes into account attention, memory, and motivation, has frequently been referred to as a bridge between behaviourist and cognitive learning theories.

Therefore, learners understand by imitating the actions, attitudes, and results of others. As stated by Bandura (1982), "learning would be exceedingly laborious, not to mention hazardous, if people had to rely solely on the effects of their own actions to inform them what to do. Fortunately, most human behavior is learned observationally through modeling: from observing others, one forms an idea of how new behaviors are performed, and on later occasions, this coded information serves as a guide for action". (p. 22). A review of the literature on the integration of theory and practice within the social learning discovered several studies that found that student who's learning through social media felt that their learning process more adequately prepared them for real world practice.

An online environment has provided learners with more social contact with each other, hence the greater opportunities to learn from others and to be influenced to a greater extent (Chatterjee & Correia, 2020). This environment has offered the opportunity for teachers and students from all over the place to unite and develop communities of practice in their areas of research (Scavarelli et al., 2021). Moreover, online education could provide educators more opportunities enlarge and enhance his or her knowledge (Sepulveda-Escobar & Morrison, 2020). Kuo et al., (2022) revealed that after undergoing the web-based education using self-regulatory strategies, learners become more self-assured, challengeable, and highly assessing of what they learnt.

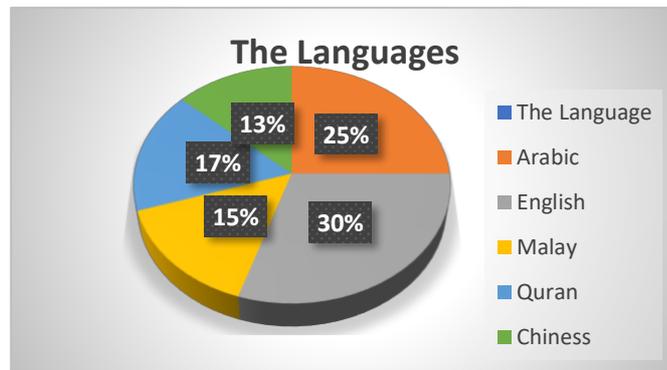
4. Methodology

The main objective of the current study is to determine how different social media platforms affect learning a foreign language, as well as to highlight any potential improvements to future virtual language learning. In the light of that, the study applied quantitative approach by using descriptive analysis method to analyse the research objectives by calculating the percentages from the answers to each question. The questionnaire was used, with multiple choice items coming last and open-ended and closed-ended questions coming first. 60 people made up the study's population; 40.4% of the men and 59.6% of the women who volunteered to learn a foreign language on Facebook were men.

5. Results and Discussion

A questionnaire sent to students who are currently learning a foreign language through social media served as the main source of data gathering. Based on the results of the study obtained data that there is a significant impact of using social media on learning foreign language. The findings show that most participants use social media as a tool for language acquisition.

The pie chart below shows that there are five languages that learner willing to acquisition. Overall, English language being the highest percentage with (30%) follow by Arabic language with (25%) of the population while Chinese was the lowest percentage of learner with (13%).



In terms of second question the results shows that the learners who believe social media can have a positive impact on learning a foreign language. The findings imply that social media is a common method of language acquisition among participants. Approximately, 96.6% of the learners think that social media can have a positive influence on learning foreign language, while 3.4% think it can have a detrimental impact on the language learning process shows figure 1.

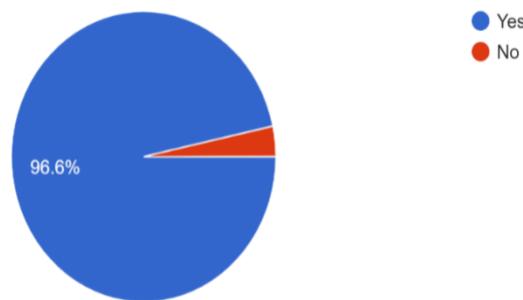


Figure 1: Do you think that social media platforms (e.g., Facebook, WhatsApp, Twitter, Instagram, Google and etc.: can affect learning foreign languages positively.

The result of question 3 reveals that majority of participant use several platforms in order to learn for instant as figure 2 displayed one participant use 1platform for learning while 12 of learner used two, 8 participants used 5 platforms, 16 utilized 4 and majority of participant used.

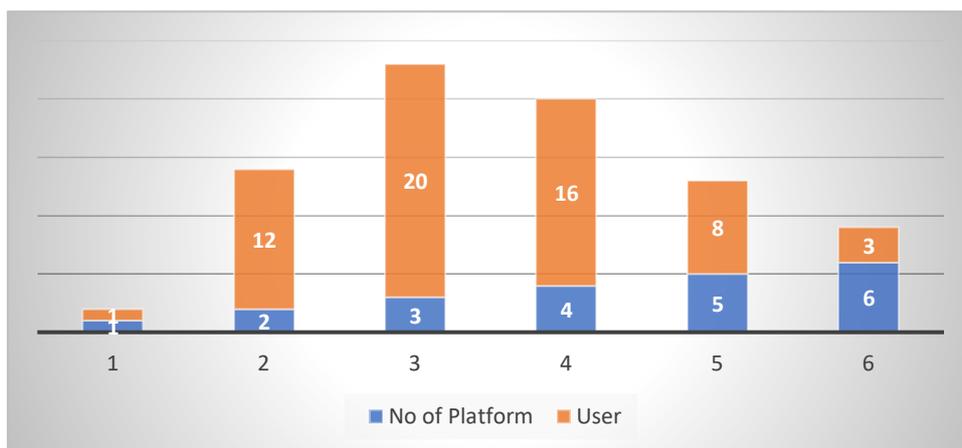


Figure 2: How many Social Media platforms do you use.

The answer to the fourth question revealed that, according to the data, WhatsApp has the highest percentage of users of any social networking site, as seen in Figure 3 above. Second in terms of popularity is Facebook. Additionally, some students use platforms like Twitter, Instagram, LinkedIn, and Wechat, among other social media sites that they prefer to use.

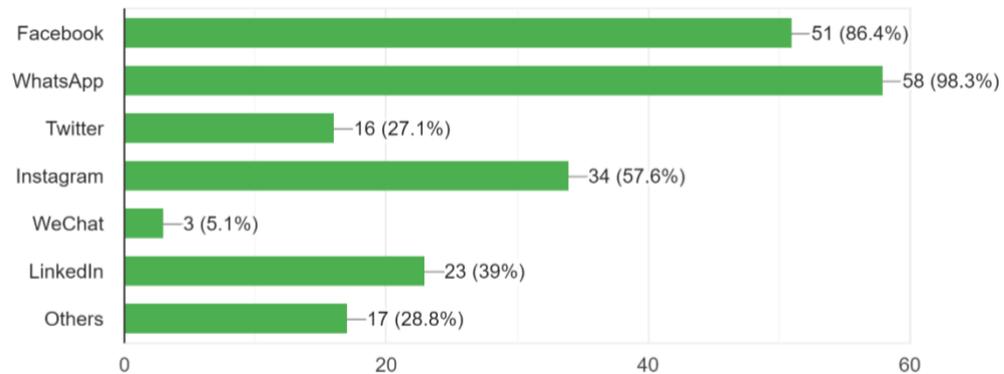


Figure 3: Which of the following social media platforms do you use

The next question results exposed that pertaining to the usage of social media as a communication tool during the learning process is shown in Figure 4 below. According to the findings, 91.5% of learners prefer to use social media platforms for learning. They think that social media gives pupils the opportunity to communicate with one another and with their friends. However, 8.5% of respondents said they didn't use social media for learning since they didn't think it helped with their studies. They think that the purpose of these platforms is to increase their sense of community.

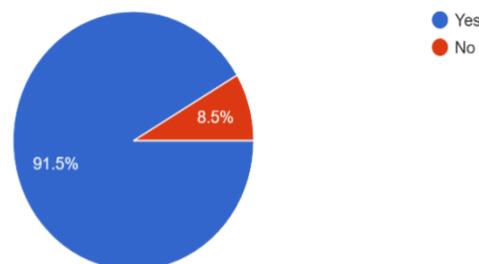


Figure 4: Would you be interested in using social media platforms as an educational tool.

The results in figure 5 show that most learners are enthusiastic about adopting social media as a teaching tool, and that a higher percentage of students approximately 54.2 and 33.9%—use social media to study foreign languages at "good" and "excellent" rates, respectively. It is further claimed that none of the learners assessed the use of social media platforms on learning a foreign language as being poor, and only 11.9% of the learners percentage the use of social media on learning foreign languages as "average".

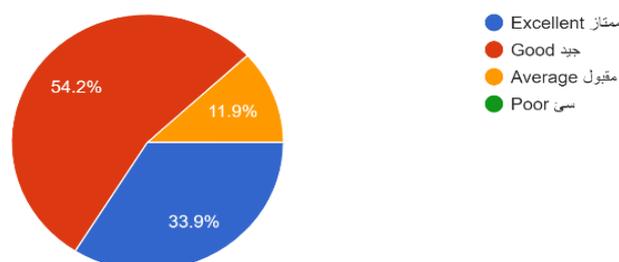


Figure 5: How would you rate the use of social media platforms on learning a foreign language.

The final question explores how social networking sites affect learners' academic performance. 52.2% of the participants said that social networking sites had a significant impact on their studies, according to the data, while 42.2% said that social networking sites had just a minor impact on their performance and language proficiency. However, 18.07% of the students concurred that social networking sites have no influence on their academic performance. Figure 6 below illustrates how social networking sites are influencing students' academic performance.

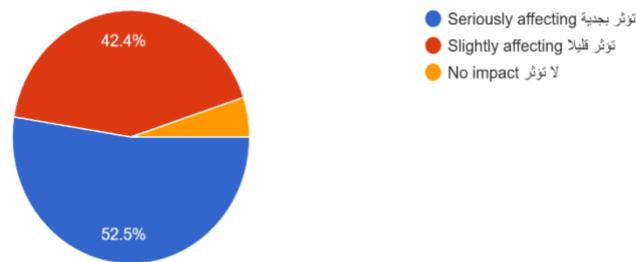


Figure 6: influence of social media on learners' performance

6. Conclusion

The current study aims to examine the most significant effects of using social media for foreign language acquisition. Based on the result has shown that there has been a change to teaching and learning methodology in which traditional face-to-face teaching and learning have been replaced with new methods of online teaching that use information technology. The study concluded that since the outbreak of online learning, there are a number of platforms have appeared to ease the teaching and learning of foreign language processes. Consequently, the Process of teaching and learning foreign languages can be conducted at any time anywhere.

Furthermore, the study revealed that social media can be used as a beneficial communication and teaching tool since the learner is not constrained by specific learning situations. This finding is consistent with how foreign language learners perceive social media. Additionally, numerous foreign language learner use this method to advance their practises because of the significant options it offers.

The study recommended that social media should be used by students and instructors as a tool for experiential, contextual learning and as social practises deserving of critical attention because it is becoming more commonplace and omnipresent. Therefore, it is necessary to continue investigating how certain media and situational factors might amplify, activate, diminish, or nullify technologically agnostic social media dynamics.

References

- Al Jahromi, D. (2020). A quantitative study of the perceived impact of social media networks on Bahraini users' English language learning. *Teaching English with Technology*, 20(4), 23-40.
- Amin, B., Rafiq, R. and Mehmood, N. (2020). The impact of social media in English language learning. *Journal of Critical Reviews*, 7(10), 3126-3135, doi: 10.31838/jcr.07.10.507.
- Bhatti, A., Bano, T. and Rehman, S.-U. (2019). Social media and consumer satisfaction effect on consumer purchase intention with the moderating role of trust. *International Journal of Business Management*, 4 (2), 131-141.
- Blaine, A. M. (2019). Interaction and presence in the virtual classroom: An analysis of the perceptions of students and teachers in online and blended Advanced Placement courses. *Computers & Education*, 132, 31-43.
- Bandura, A. (1982). Self-efficacy mechanism in human agency. *American psychologist*, 37(2), 122.

- Ceci, L. (2022). Mobile internet usage worldwide - statistics & facts. Retrieved from <https://www.statista.com/topics/779/mobile-internet/#dossierKeyfigures>
- Chatterjee, R., & Correia, A. P. (2020). Online students' attitudes toward collaborative learning and sense of community. *American Journal of Distance Education*, 34(1), 53-68.
- Chugh, R., & Ruhi, U. (2018). Social media in higher education: A literature review of Facebook. *Education and Information Technologies*, 23(2), 605-616. DOI: <https://doi.org/10.1007/s10639-017-9621-2>
- Edgar, D. W. (2012). Learning theories and historical events affecting instructional design in education: Recitation literacy toward extraction literacy practices. *Sage Open*, 2(4), 2158244012462707.
- Herri, M., & Gunawan, S. (2020). The use of social media platform to promote authentic learning environment in higher education setting. *Science for Education Today*, 10(2), 105-123.
- International Telecommunication Union (ITU) (2020) ICT facts and figures 2020. Available at <https://www.itu.int/en/ITU-D/Statistics/Documents/facts/FactsFigures2020.pdf>.
- Jenaibi, B. A., & Mansoori, A. A. (2022). Use of social media in teaching high school students: A case of United Arab Emirates. *Contemporary Review of the Middle East*, 9(2), 158-183.
- Kazanidis, I., Pellas, N., Fotaris, P., & Tsinakos, A. (2018). Facebook and Moodle integration into instructional media design courses: A comparative analysis of students' learning experiences using the Community of Inquiry (CoI) model. *International Journal of Human-Computer Interaction*, 34(10), 932-942.
- Kuo, T. M., Tsai, C. C., & Wang, J. C. (2021). Linking web-based learning self-efficacy and learning engagement in MOOCs: The role of online academic hardiness. *The Internet and Higher Education*, 51, 100819.
- Lambton-Howard, D., Kiaer, J., & Kharrufa, A. (2021). 'Social media is their space': student and teacher use and perception of features of social media in language education. *Behaviour & Information Technology*, 40(16), 1700-1715.
- Manca, S. (2020). Snapping, pinning, liking or texting: Investigating social media in higher education beyond Facebook. *The Internet and Higher Education*, 44, 100707.
- Mohamed Farag Mohamed Aboudahr, S. (2020). The Effect of Using Youtube to Increase the Level of Listening Skills among Non-Native Students of Arabic Speakers in Malaysian Universities. *Education Quarterly Reviews*, 3(2). <https://ssrn.com/abstract=3612888>
- Pikhart, M. and Botezat, O. (2021). The impact of the use of social media on second language acquisition. *Procedia Computer Science*, 192, 1621-1628.
- Rieger, D. and Christoph, K. (2018). The daily dose of digital inspiration: a multi-method exploration of meaningful communication in social media. *New Media and Society*, 21(1), 97-118.
- Rozal, E., Ananda, R., Zb, A., Fauziddin, M., & Sulman, F. (2021). The Effect of Project-Based Learning through YouTube Presentations on English Learning Outcomes in Physics. *AL-Ishlah: Jurnal Pendidikan*, 13(3), 1924-1933.
- Scavarelli, A., Arya, A., & Teather, R. J. (2021). Virtual reality and augmented reality in social learning spaces: a literature review. *Virtual Reality*, 25(1), 257-277.
- Schunk, D. H., & Usher, E. L. (2011). Assessing self-efficacy for self-regulated learning. *Handbook of self-regulation of learning and performance*, 282-297.
- Sepulveda-Escobar, P., & Morrison, A. (2020). Online teaching placement during the COVID-19 pandemic in Chile: challenges and opportunities. *European Journal of Teacher Education*, 43(4), 587-607.
- Shodiyev, M. B. (2022). The usage of web technologies as social network (Facebook) in teaching a foreign language to adults. *Science and Education*, 3(2), 973-977.
- Simamora, R. M. (2020). The Challenges of online learning during the COVID-19 pandemic: An essay analysis of performing arts education students. *Studies in Learning and Teaching*, 1(2), 86-103.
- Yunus, M. M., Zakaria, S., & Suliman, A. (2019). The Potential Use of Social Media on Malaysian Primary Students to Improve Writing. *International Journal of Education and Practice*, 7(4), 450-458.



An Analysis of Social Studies Teachers' Opinions on Distance Education After Covid-19 Pandemic

Murat Tartuk¹

¹ İstanbul University-Cerrahpaşa, İstanbul, Turkey. m.tartuk@hotmail.com ORCID: 0000-0002-3226-2123

Correspondence: Murat Tartuk, İstanbul University-Cerrahpaşa, İstanbul, 34000, Turkey. Tel: 05352045353.
E-mail: m.tartuk@hotmail.com

Abstract

Distance education offers an important teaching method in our age thanks to the development and widespread use of digital technologies. Distance education has been used especially during the Covid-19 pandemic in recent years and has significantly shaped education and training activities since then. This study aims to examine the opinions of social studies teachers on distance education. The study addresses the effect of distance education on teaching from various aspects. The study was designed as a case study, one of the qualitative research designs. The data were obtained using a semi-structured interview form developed by the researcher. The study group consisted of 10 social studies teachers working in different provinces of Turkey. According to the results of the study, teachers evaluated distance education as different from face-to-face education in 5 different categories. These are physical, social, time and space, material use and difference in skills training. According to the teachers, classroom management is artificially easier in distance education. They evaluated distance education as unfavorable in terms of communication. Teachers reported that the use of materials is more advantageous in distance education and that these materials are mostly digital materials. These teachers also believe that distance education decreases student success, face-to-face education is the most appropriate method for learning activities, and distance education should be used merely as a supportive element for face-to-face education.

Keywords: Covid-19, Distance Education, Social Studies, Teachers' Opinions

1. Introduction

The World Health Organization (WHO) recognized Covid-19, starting in Wuhan, China in December 2020 and spreading rapidly around the world, as a "pandemic" on 11 March 2020 (WHO, 2020). The WHO mid-year report for 2022 reported more than 574 million confirmed cases and 6.3 million deaths by the end of July 2022 (WHO, 2022). UNESCO's updated Covid-19 education data shows that the pandemic has affected more than 1.5 billion students. In addition, there has been a loss in the achievements towards the goals of the 2030 education agenda (UNESCO, 2022).

With the Covid-19 pandemic, there has been a mandatory change process in the field of education as in many fields (Bakioğlu & Çevik, 2020). Many students receiving compulsory and basic education worldwide have been affected by this process of change brought by the pandemic (Zhong, 2020). According to the National Education 2021-2022 statistics, 19 million 155 thousand 571 students receive formal education in our country, and 1 million 139 thousand 673 teachers work in schools continuing formal education (MoNE, 2022). Our country, having such a high number of education statistics, continued the education process through distance education for a while during the periods when pandemic measures were taken in order not to disrupt education and training activities. Although students and teachers faced disruptions in different aspects of education during this teaching process, education continued and all stakeholders had an unfamiliar experience. During this process, the Ministry of National Education's (MoNE) EBA (Education Information Network) portal has assumed an important role. EBA has been the dominant digital social education platform used in the distance education process. EBA ensured the continuity of education both through TV broadcasts and online during the Covid-19 mandatory distance education period.

The pandemic has opened a new chapter in distance education and digital learning and has led to its increasing use and development. It has revolutionized the effective use of digital devices, online resources and social media for education (Mulenga & Marban, 2020). In this way, different disciplines and sectors, as well as the majority of society, have learned to use distance education in a more physically and financially effective way. After the pandemic was brought under control, trainings started to be held face-to-face again instead of distance education. Through this process, teachers and students have gained significant experience in distance education. In addition, the infrastructure, content and tools of distance education in our country have shown a significant development. According to Holmberg (1995), distance education is a process that has planning, teaching and guidance dimensions and students and teachers do not have to share the same environment. Distance education is a type of education in which the learner and the teacher are far away from each other in terms of space in the teaching-learning process and digital materials and tools are used more easily (Uşun, 2006). Distance education was first implemented by mail in 1728, and in our age, thanks to the advancing information technologies, it is now being implemented effectively using more qualified internet applications. Distance education applications, which were seen as utopia in previous years, can now be implemented using the global communication network infrastructure with the advances in ICT (Information Communication Technologies) tools (İşman, 2011). In addition to the benefits of distance education presentations such as the ability to send information from the education center to the whole world, allowing students to access information from wherever they want, and providing more detailed and faster feedback, there are limitations such as the inability to establish face-to-face interaction, the inability to immediately solve problems that arise during learning, and the economic burden in the establishment of the infrastructure (Dinçer, 2016).

Distance education has two main components. These are education and information communication technologies. The tradition of science, which is the basis of education, and the rapidly advancing information communication technologies in our age make distance education possible and necessary. Developed countries support lifelong learning in terms of the education level of their citizens and work to ensure this. For this purpose, distance education is important for countries to continue their education and training activities without interruption and to make them continuous (Kırık, 2014). In addition, it is extremely important for distance education institutions to update their existing curricula for distance education and to develop new teaching methods and strategies to be used in distance education (Agnoletto & Queiroz, 2020; Toquero, 2020). Furthermore, in order to use distance education more effectively, studies to improve teachers' and students' skills in using technology should be carried out simultaneously.

Various studies have been conducted on the effects of distance education and the Covid-19 pandemic period on the teaching process. Demir and Özdaş (2020) examined teachers' views on distance education in the Covid-19 process, and teachers evaluated distance education activities in three different ways: satisfactory, unfavorable and limited. Özdoğan and Berkant (2020) examined stakeholder views on distance education during the Covid-19 pandemic period, and it was determined that the stakeholders' views on the advantages of distance education were mostly independent of time and space, the ability to watch the lessons repeatedly, the ability to meet the need for education during the pandemic period, protection against the transmission of the disease, the importance of

technology in education and the development of technological skills. Kırıkçı et al. (2022) evaluated the views of teachers teaching social studies courses on distance education, and found that teachers did not find it appropriate to provide knowledge, skills, values and achievements related to their fields through distance education.

This study aims to examine social studies teachers' views on distance education after the Covid-19 pandemic. Unlike similar studies, this study deals with distance education holistically from various aspects and evaluates the effects of distance education on the teaching process (classroom management, communication, material use, class participation, time management, student achievement). The main problem of the study was "how do social studies teachers evaluate distance education as an alternative to face-to-face education in all stages of teaching in the post-pandemic period?". For this purpose, answers to the following questions were sought:

1. What are the opinions of social studies teachers about the differences between distance education and face-to-face education?
2. How do social studies teachers think distance education affects the teaching process (classroom management, communication, material use, class participation, time management)?
3. How do social studies teachers evaluate the effect of distance education on student achievement?
4. How do social studies teachers evaluate the advantages and disadvantages of distance education for teachers and students?
5. What kind of problems have social studies teachers generally encountered in distance education?
6. Which type of education do social studies teachers want to continue as the dominant type of education?

2. Method

2.1 Research Design

This study, which was conducted in accordance with the qualitative research procedure, examined teacher views in depth. Qualitative research involves the use of qualitative data collection methods such as observation, interview and document analysis to determine perceptions and events in a realistic and holistic way (Yıldırım & Şimşek, 2013). The study was designed as a case study, one of the qualitative research designs. Case study is a type of study in which any real situation encountered in life is examined in all aspects (Yin, 2009). In a case study, the researcher aims to collect in-depth information through multiple sources of information (e.g. observations, interviews, documents, and reports) to create a case description or case themes (Creswell, 2015).

2.2 Participants

The study group consisted of 10 social studies teachers working in different cities in Turkey. Online interviews lasting 25-35 minutes on average were conducted using Zoom and Skype programs with the teachers whom the researcher could reach and who agreed to be interviewed. These interviews were recorded with the permission of the participants and then transcribed. The study group was selected according to the convenience sampling technique, one of the purposeful sampling types. In addition to providing speed and practicality to the researcher, convenience sampling method is mostly preferred in cases where it is not possible to use other sampling methods (Yıldırım & Şimşek, 2013).

2.3 Data Collection Tools and Data Analysis

The data of the study were obtained by using a semi-structured interview form with 8 open-ended questions developed by the researcher. The interview form included questions to determine teachers' general opinions and evaluations about distance education. There are questions about the most significant differences between distance education and face-to-face education, the effects of distance education on the teaching process and student success in all aspects, the advantages and disadvantages of distance education for teachers and students, and the problems encountered in distance education. The interview form was prepared in accordance with the purpose of the study and expert opinion was obtained from 2 faculty members with doctoral degrees. After being examined in terms of structure, content and language validity, the interview form was finalized. Before starting the data collection

process, a pilot study was conducted with 2 social studies teachers to determine the suitability of the form and its suitability for the research was tested. The data were obtained through in-depth interviews (Creswell, 2019), which are widely used in qualitative research and are one of the main data collection tools. Interview is a method used to obtain information that is difficult to observe directly or that we cannot obtain through observation (Patton, 2015). Presenting the themes, categories and codes obtained from the interviews in this study to expert confirmation, including direct quotations, focusing on all the characteristics of the phenomenon examined and clearly expressing the study process contributed to its validity and reliability.

The data obtained from the interviews were analyzed using content analysis and descriptive analysis. Content analysis attempts to define the data and reveal the facts that may be hidden in these data. The main action in content analysis is to bring together similar data within the framework of concepts and themes and to interpret them by organizing them in a format that readers can understand. In descriptive analysis, the data collected from the participants are interpreted and summarized by considering the predetermined themes. Direct quotations are frequently used in descriptive analysis (Yıldırım & Şimşek, 2013).

3. Results

In this study, conducted to determine the general opinions and evaluations of social studies teachers about distance education, the interviewed teachers were coded as T1, T2... T10 in the presentation of the findings obtained for confidentiality reasons. The findings were analyzed and explained in 6 sections depending on the study questions.

3.1 Social studies teachers' opinions on the differences between distance education and face-to-face education

The social studies teachers were asked to compare distance education and face-to-face education and to state what the most significant differences were. Teachers' answers were analyzed and presented in detail in Table 1.

Table 1: Opinions on the differences between distance education and face-to-face education

Theme	Categories	Codes
Basic Differences	Physical differences	Course environment
		Virtuality
		Face-to-face interaction
		Eye contact
		Content sharing
		Continuity of training
	Social differences	Communication
		Socialization
		Student interest
		Emotional differences
Time and space difference	Student intervention	
	Student behavior	
	Teacher behavior	
Difference in material use	Teacher teacher interaction	
	Teacher control	
	Student feedback	
Difference in skills training	Time flexibility	
	Space flexibility	
	Use of time	
Difference in skills training	Technology use	
	Material sharing	
	Use of physical whiteboards	
Difference in skills training	Opportunity to work together	
	Cooperation and interaction	

A review of Table 1 reveals that social studies teachers' views on the main differences between distance education and face-to-face education are grouped into five categories. These categories are physical differences, social differences, time and space differences, differences in the use of materials and differences in skills training. Distance education and face-to-face education have basic features that differ in many respects. In the category of physical differences, the main differences frequently mentioned by social studies teachers are course environment, virtuality, face-to-face interaction, eye contact, content sharing and continuity of education.

T1 said: *"I think the most obvious difference is that the course environment is a virtual environment, that is, it is not face-to-face communication, everyone participates remotely, there is no live classroom environment"* while T2 expressed the following *"we cannot provide eye contact, sometimes we make a joke, we try to activate the student from there, we can somehow manage to involve our students who are resting in the back rows in face-to-face education. However, this is quite difficult in distance education."* On the other hand, T4 stated that *"the most obvious difference is basically the interaction between the teacher and the student, while the interaction with the student is more in face-to-face education, it is less in distance education."* The teachers' statements indicate that the fact that distance education does not require a physical presence, that is, it is carried out in a computer environment, causes it to differ from face-to-face education in many ways. In particular, the fact that distance education is virtual, not interactive, and therefore teachers cannot use message-oriented elements such as eye contact with their students causes limitations.

T7 stated that *"sharing is much easier in distance education, it is a great convenience to be able to share all kinds of materials such as questions, videos, etc."* In terms of content sharing, it is much more possible to use materials that are difficult to bring to the classroom, especially in time and space, in distance education. It is possible to say that distance education infrastructure differs from face-to-face education in terms of content integrated with technology, document use and content sharing. T8 said: *"It is very good that distance education can be used in terms of continuity of education or in terms of providing education when faced with compulsory situations. When face-to-face education is interrupted, you can somehow continue it with distance education."* Distance education has become both a good alternative when face-to-face education is not possible due to necessity, and a more frequently used alternative with the various opportunities it offers. During the Covid-19 pandemic faced by the whole world, distance education has assumed an important role and duty in the continuation of education and training activities without interruption during periods when face-to-face education could not be provided.

The social differences frequently mentioned by teachers consisted of communication, socialization, student interest, emotional differences, student intervention, student behavior, teacher behavior, student-teacher interaction, teacher control and student feedback. Social studies teachers mostly emphasized the social differences between distance education and face-to-face education.

T2 stated the following: *"in distance education, even if the student's camera is on, even if he/she is eager for the lesson, there cannot be a full communication with the teacher"*. Again, T2 said: *"In the classroom, the student is more comfortable with his/her friends and therefore can express himself/herself better, whereas in distance education, since the family is at home, sometimes when the family demands to listen to the lesson, it is as if the student becomes more arrested. The student who is normally cheerful and participates in the lesson can stand further back. This also happens with us teachers. Families also listen to us sometimes, and this causes me to get nervous."* Home environment and external factors have negative effects on the teaching process in distance education. Therefore, this situation negatively affects the natural flow of the lesson process and differentiates teacher and student behavior. In addition, communication and classroom environment in distance education and face-to-face education differ significantly.

Teachers think that face-to-face education is much more instructive in terms of real life experience and interaction, that verbal communication as well as some non-verbal communication elements are used more effectively in face-to-face education and that this has a significant effect on teaching. In this regard, T8 stated the following: *"When it is noticed that the student's interest in the lesson has decreased or he/she is bored, activity mobility or activity change can be applied in face-to-face education"*. On the other hand T4 said: *"During the lesson, the student can sometimes be physically in the classroom and mentally somewhere else, and as a teacher we can understand this."*

You ask a question to the student instantly and the student gives you feedback immediately. In distance education, on the other hand, the student seems to be present in the class, you ask a question to the student, and when the student cannot answer the question, he/she immediately leaves the class and then says, "My teacher, the internet has gone out" and it is easier to make excuses for this. In face-to-face education, it is easier to understand whether the student is really there or not, but this is not possible in distance education." As can be understood from T4's statements, it is very difficult for the teacher to predict whether the students are following the lesson and what they are dealing with in distance education. One of the main strengths of face-to-face education is that the teacher can establish a real contact with the students during the lesson. During the interviews, social studies teachers frequently emphasized this issue. This also positively affects student interest during the lesson.

T7 said: "The biggest handicap of distance education is not being able to reach the students, that is, not being able to reach them emotionally", T8, on the other hand, stated that "the excitement of the student, the sparkle in his/her eyes, the victory gesture of understanding are not seen, in short, it is not remotely noticeable whether that emotional integrity that should be awakened in the student is present or not." In face-to-face education the relationships that teachers establish with their students and students with their peers fill an important gap in their minds emotionally. Therefore, this is an important element that nourishes them socially. One of the main and important differences between distance education and face-to-face education is that distance education is inadequate in the dimension of in-class relationships, which is frequently mentioned in teachers' statements.

When an undesirable situation occurs in the classroom, it is much easier for the teacher to intervene in this situation in face-to-face education. Regarding this situation, T4 stated the following "in face-to-face education, for example, if a student does not have a pen, we can give a pen to the student and continue from there, but in distance education, it is much more difficult to eliminate these as a teacher when the internet is cut or the student does not have internet access." The ability of the teacher to establish an organic bond with the students in the classroom makes face-to-face education stand out against distance education. The opportunity for the teacher to intervene in the teaching process is much more in face-to-face education than in distance education.

T8 stated that distance education is quite limited compared to face-to-face education in terms of getting feedback from students with the following statements: "Face-to-face education is healthier in terms of getting feedback from students and correcting them if there is a deficiency or mistake. In distance education, when the students say, "Did you understand this?" there is no way to measure this and it cannot be measured and it is not very comprehensive." In distance education, it is also very difficult for the teacher to get real and healthy feedback from the students in front of the computer. It is possible to say that the possibility of misleading the teacher is relatively high with the limited number of student feedbacks in live lessons in distance education.

Social studies teachers' dimensions related to the time and space differences of distance education and face-to-face education consist of time flexibility, space flexibility and time utilization codes. Distance education and face-to-face education basically differ in time and space. In distance education, the teacher has the flexibility to choose the time of the lesson and the place to attend the lesson, while this is not the case in face-to-face education. T3 stated the following regarding this issue: "Flexibility of time and place, that is, it is more flexible in distance education, whereas in face-to-face education it is carried out in a certain place in a certain period of time."

The codes created from the teachers' statements about the difference between distance education and face-to-face education in terms of material use are technology use, material sharing and physical board use. Distance education and face-to-face education differ in terms of using technology, sharing course materials and using physical or virtual whiteboards. Regarding these differences, T10 said: "In face-to-face education, you are not so dependent on technology, but in distance education, technology is absolutely indispensable. The most important difference is the use of technology." In addition to the fact that distance education is realized with the possibilities of technology, it stands out in the use of different technological tools in the teaching process. Therefore, we can say that the material sharing expressed in teacher opinions is stronger than face-to-face education in this direction. In addition, the use of virtual board in distance education makes the use of the board more practical for teachers and students. The statements of social studies teachers under the category of differentiation between distance education and face-to-face education in skills training are the opportunity to work together and cooperation and interaction. The

prominent point here is that face-to-face education is suitable for skills training, that is, it is suitable for cooperative learning and interaction. While in face-to-face education, it is expected and desired that students learn socially or interact and cooperate in the course process, distance education is unfavorable in this respect. In this regard, T8 said: *"Social activities that support education are the activities on certain days and weeks. In face-to-face education, these can be supported and very productive social activities can emerge. However, in distance education, it is more difficult to overlap such skills based on social work, practice, visuals and interaction with the course outcomes."*

3.2 Social studies teachers' opinions on the impact of distance education and face-to-face education on the teaching process

The impact of distance education and face-to-face education on the teaching process were analyzed under 5 headings and presented in detail by the researcher in Table 2.

Table 2: The impact of distance education and face-to-face education on the teaching process

Theme	Categories	Codes
Impact on Teaching Process	Class management	Artificial convenience Distance of students Accessibility to students Routing Student intervention
	Communication with the Students	Negative Individual differences Technical issues
	Material Use	Advantageous Digital materials Tangible materials
	Attendance	Low Access to computer Siblings' sharing of IT tools
	Time management	Available Dependence on external factors

An examination of Table 2 reveals that social studies teachers' views on the effects of distance education and face-to-face education on the teaching process are grouped into 5 different categories. These categories are classified as classroom management, communication with students, use of materials, attendance and time management. The results revealed that distance education facilitates classroom management in the teaching process in terms of its basic structure and possibilities, but this facilitation is artificial. Most of the interviewed teachers stated that classroom management in distance education is under the control of the teacher with the possibilities of technology in live classes, and that this situation is due to the distance of students from each other.

T6 said: *"Classroom management is a little easier in distance education because the children are not in the same environment, for example, when someone speaks, it can distract other students in the class, even me, and I have to intervene, classroom management is easier, but artificially easier"* while T3 made the following statement *"in face-to-face education, one mischievous student in the classroom can distract the whole class, in distance education it is completely under the control of the teacher, you can turn off the student's screen and prevent him from disturbing other students, I think classroom management is easier in distance education."* Social studies teachers think that the opportunity to direct and intervene with students during the lesson is stronger in distance education. In face-to-face education, unexpected events in the classroom or students arguing among themselves are among the factors that make the flow of the lesson and therefore classroom management difficult.

In terms of communication with students, teachers think that distance education offers a lower level of communication than face-to-face education. T1, one of the teachers who thought that distance education was limited in this regard, said, *"teaching a lesson by looking at the child's eyes in the classroom environment and teaching a lesson on the computer are very different things, the level of communication is naturally at a low level"*, T8 stated that *"face-to-face education is more reasonable in terms of students and teachers passing their feelings to each other."* T2, one of the teachers who think that there are some individual differences in communication and that middle school students who are in adolescence do not communicate, especially due to their shyness, stated that *"students are more timid, I do not think they ask questions comfortably, they are afraid that their voices and images will be bad."* T6 stated that distance education decreases communication mostly due to lack of infrastructure with the following words: *"Due to technical problems, connection problems, infrastructure problems, lack of equipment, students cannot communicate easily with students."*

Social studies teachers believe that distance education is advantageous in terms of the use of materials in the teaching process. Especially in live lessons in distance education, it is possible to use various visual and interactive materials with the opportunities offered by technology. In this regard, teachers stated that there is a variety of materials and the speed of accessing the materials is high. They stated that they could access many materials during the lesson, especially through Google and Youtube, and that they used teaching materials more frequently in distance education due to the ease of access and display. T9 stated the following in this regard: *"I think it is more advantageous in terms of material use. There is no interactive board in my classroom. However, with the applications I use in computer environment in distance education, I can easily access many contents and course materials and reflect them on my screen"* while T2 said: *"This aspect is very nice, it makes it very easy to use the material, everything is at hand. For our course, social studies, youtube is a very rich environment. I cannot use youtube at school because of the low internet speed, but not in distance education."*

Stating that distance education is convenient in terms of digital materials in the teaching process and that it is not possible to use tangible materials, T3 said: *"It is very rich in terms of digital content materials, we can easily access visual and auditory resources in distance education. Naturally, we cannot use physical, concrete materials."* T4 expressed that in distance education, students can also present materials in the course and that students also contribute to the enrichment of the course content: *"In distance education, it is possible to instantly reflect a content on the child's screen. Or the child presents you a content, the teacher says there is such a video, for example, we watch and evaluate that video in the lesson."* In addition to increasing student-teacher interaction, this is a supportive factor for students' active role in the teaching process. Students' contribution to course content and materials in distance education can also support the acquisition of some skills. Especially research and communication skills are expected to improve.

Teachers stated that class participation in distance education is lower than in face-to-face education. According to them, in face-to-face education there is the concern of being counted absent, whereas in distance education, even if the student comes to class, he/she somehow leaves the class and makes the excuse that he/she cannot attend the class due to technical problems. Another issue is students' access to digital tools. In families with a high number of siblings, some students cannot participate in distance education due to lack of computers or tablets. Regarding this issue, T1 said: *"I think distance education is disadvantageous in terms of student participation. Sometimes I see that I started the lesson with 15 people and then the number dropped to 7, some of them lost their connection, ran out of internet or had to leave due to their siblings' class, such problems can occur"* while T3 said: *"One of the most common problems encountered in distance education is low attendance. The reasons for this are the high number of siblings in the family, for example, there is 1 tool and internet is not enough."*

Social studies teachers believe that distance education is convenient in terms of time management but can be interrupted due to some external factors. Regarding this issue, T2 said: *"I finished the subjects earlier in distance education and did much more activities than in face-to-face education. Although the duration of the lesson was 30 minutes, the lessons were full"*, while T7 said: *"The subject that I could not teach in 40 minutes in face-to-face education, I taught comfortably in distance education because I supported it with materials, i.e. videos"* and T3 said: *"While the time was not enough in face-to-face education, we taught our lessons comfortably in distance education. There may be undesirable situations caused by external factors in distance education. For example,*

the family can intervene or problems with the internet can cause loss of time." Since the number of stimuli is more limited in distance education than in face-to-face education, there is less lost time during the lesson. With the start of the lesson, the teacher can make a quick introduction to the subject on the screen and does not deal with routines as in face-to-face education. Therefore, the time allocated for the lesson can be used more effectively.

3.3 Social studies teachers' opinions on the impact of distance education on student success

The impact of distance education and face-to-face education on student success was analyzed holistically and the codes formed in the interviews are presented in Table 3.

Table 3. The impact of distance education on student success

Theme	Codes
Student Success	Low
	Classroom environment
	Teacher follow-up
	Misuse of technology
	Lack of teacher reinforcement
	Peer learning
	Motivation
	Competition
	Social learning
	Social activities

The interviews conducted with social studies teachers about the effects of distance education and face-to-face education on student academic success revealed that, without exception, they stated that distance education decreases student success. They believe that face-to-face education is the most appropriate method for learning and that distance education should be used as a supportive element of face-to-face education. They stated that in face-to-face education, the school environment and its elements constitute a whole, and that students are not only given academic information at schools, but also prepared for society as cultured individuals. They also state that the classroom environment and rules also prepare students.

T3 said: *"in face-to-face education, the student attends school and the teacher can follow him/her closely in class, in distance education, I think student success is negatively affected because the teacher does not have the opportunity to monitor the student."*

Teachers believe that technology makes students addicted to technology and internet and individualizes them in the distance education process. Addressing this situation, T5 said: *"Students who sit in front of the screen to attend class may be interested in other things rather than the lesson. Students who spend time individually can become addicted to technology and games."*

In face-to-face education, the role of the teacher in the classroom is unquestionably an important factor in success. The fact that teacher reinforcement is more limited in distance education limits students' motivation for success. Regarding this situation, T9 said: *"In face-to-face education, I sign the student's notebook, sometimes I give a star to the homework they have prepared, I reward them in different ways. In distance education, this is not possible, partly verbally or sometimes with emojis."*

In face-to-face education, students learning from their peers, sometimes competing with their peers or social learning through social activities have an important place in learning. In this respect, T2 said: *"Through social activities such as sports activities, we can win students over, indirectly increasing their motivation."*

3.4 Social studies teachers' opinions on the advantages of distance education

Table 4 presents the opinions of social studies teachers on the advantages of distance education in detail.

Table 4: Advantages of distance education

Theme	Categories	Codes
Advantages	For teachers	Comfort Time saving Financial savings Ability to use technology
	For students	Comfort Course repetition Reinforcement Ability to use technology

Teachers' opinions on the advantages of distance education were analyzed in 2 different categories. For the teacher, distance education was coded as comfort, time saving, financial savings and the ability to use technology. For students, the advantages were coded as comfort, course repetition, reinforcement and the ability to use technology. The advantages of distance education that are similar for teachers and students are that the opportunity to make the lessons from anywhere offers comfort to the stakeholders and also provides the stakeholders with the ability to use technology. The majority of the teachers interviewed stated that distance education provides significant comfort and that they can focus on the education process with less preparation without leaving home. In addition, they think that distance education improves their ability to use technology and that spending more time with the internet and digital tools increases their knowledge and skills in this direction.

T1: *"In face-to-face education, I spend more energy when I enter the classroom. In distance education, you can calmly explain your lesson from wherever you want"*, T2: *"Being able to take classes from home means less physical fatigue"*, T3: *"Distance education has been very beneficial to me, especially from my own point of view, in terms of integrating digital technology into education, because before the widespread use of distance education, we could not use most of the web 2.0 tools, but with distance education, we learned many applications and started to use them actively in the lessons."*

Teachers also stated that distance education saves time and money. Teachers who participate in distance education from home have the opportunity to prepare to go to school and use the time spent on the road for different tasks. Likewise, this also creates a financial saving opportunity for teachers.

The advantages of distance education for students as opposed to teachers are the opportunity to repeat and reinforce courses. Recording courses in distance education gives students the opportunity to repeat the topics later. In this way, students have the opportunity to reinforce the subjects they have learned. Accordingly T2 said: *"If you can re-enter the missed lesson, it is good and advantageous in this respect. It is also good for reinforcement if it is possible to follow several teachers."*

3.5 Social studies teachers' opinions on the disadvantages of distance education

Table 5 presents the opinions of social studies teachers on the disadvantages of distance education in detail.

Table 5: Disadvantages of distance education

Theme	Categories	Codes
Disadvantages	For teachers	Difficulty in monitoring students Being teacher-centered Inability to communicate with the student Failure to socialize

	Failure to cooperate
For students	Failure to socialize
	Failure to communicate properly
	Failure to develop skills
	Failure to develop value
	Inequality of opportunity
	Lack of practice

Teachers' opinions on the disadvantages of distance education were analyzed in 2 different categories. From the teacher's point of view, the codes consisted of difficulty in monitoring students, being teacher-centered, inability to communicate with students, inability to socialize and inability to cooperate. In terms of students, they were coded as inability to socialize, inability to communicate properly, inability to develop skills, inability to develop values, inequality of opportunity and lack of practice.

Social studies teachers reported that distance education posed difficulties for teachers in monitoring students and did not provide sufficient and accurate communication with students. T1: *"I don't know what my student is doing on the other side, he may play with something else, he may get distracted"*, T5: *"You can't make eye contact, you can't see what the student is doing, it can be difficult to manage the lesson, that is, classroom management."*

T2, one of the teachers who criticized the fact that distance education is more teacher-centered, said: *"The teacher is active in the lessons as a one-sided feeder organ and this is a disadvantage. The lack of participation in the lesson can affect the teacher."* While sharing the content, teachers cannot do many activities and practices that they apply in face-to-face education due to the nature of distance education. For this reason, lessons are generally teacher-oriented and teacher-centered lecture method is preferred. In this regard, T8 thinking that students are lacking in different aspects in terms of application in distance education said: *"The gap of lack of practice is evident in the students. Emotional, cognitive, psychomotor skills are not engaged and students are lacking in this part."* Distance education has a significant disadvantage for teachers and students in terms of communication, collaboration and socialization. Students who can communicate and cooperate with their teachers and peers in face-to-face education may become isolated in distance education. In the time spent in front of the computer, students are mostly informed about the content at the theoretical level. The 21st century educational approach of learning by doing and experiencing is not possible in distance education. In addition, it is very difficult for students to acquire some skills and values in distance education. In this regard, T2 said: *"Students' interactive learning and development with each other is not fully realized. Behavior training is incomplete. It is difficult for skills to come to the fore. Value perceptions are not fully developed."*

3.6 Social studies teachers' opinions on problems encountered in distance education

The opinions of social studies teachers on the problems they face in distance education were examined in detail and presented in Table 6.

Table 6: Problems encountered in distance education

Theme	Categories	Codes
Problems	Technical problems	Connection problem
	Structural problems	Dependence on external factors
		Contact
		Absenteeism
		Lack of measurement and evaluation
		Digital security
	Digital morality	
Access problems	Access to the internet	
	Access to digital tools	

The opinions of social studies teachers about the problems encountered in distance education were analyzed in 3 different categories. These are technical problems, structural problems and access problems. Teachers stated that they mostly experienced connection problems regarding technical problems. Connection problems negatively affect the flow of the course and the general functioning. In this regard, T1 said: *"The most common problem we encountered was the connection, sometimes it kicked me out of the classroom, whereas my internet at home is fiber internet."*

Regarding structural problems, teachers stated that they had problems in the areas of dependence on external factors, communication, absenteeism, inability to conduct measurement and evaluation, digital security, and digital ethics. Stating that distance education is affected by many undesirable external factors, T6 said: *"The battery runs out, the electricity cuts off, even when a potato seller or onion seller passes by the door, it reflects on the children, because you cannot turn off the external sound."*

Teachers generally consider that communication between teachers and students is often limited in distance education. They state that the positive structure of face-to-face education on communication motivates both students and teachers positively. In this regard, T1 said: *"I think nothing can ever replace face-to-face communication, no matter how much these things develop. Sometimes I tell children that in this age there are unlimited resources, if internet access is provided to everyone and education continues remotely, the cost of education will decrease, but it can never match the vitality of the school, the school atmosphere is something different, adapting to society is learned here, acting in accordance with society, addressing the teacher, addressing friends, etc."*

Teachers reported that students were more absent in distance education and that assessment and evaluation could not be done in a healthy way. Regarding this situation, T3 said: *"Assessment and evaluation in virtual environment is not healthy, it is not reliable. I could not measure how much my students actually learned". It is not possible for teachers to apply assessment tools effectively and reliably via computer."*

T4, one of the teachers who stated that digital security and digital ethics problems can be experienced in distance education said: *"I can experience digital security and digital ethics problems. Students can take a photo of the teacher and share it on different platforms. Sometimes children's writing option is on and swearing words may suddenly appear on the screen, or they may share a different image."* Students face a security and ethical problem every time they spend time in front of the screen. In distance education, it is thought that especially students who are in adolescence in terms of age may face some security and ethical problems along with behavioral disorders. Teachers stated that there may be problems in terms of access in distance education in terms of students' access to the internet and digital tools. T5: *"Tablets were distributed in order to improve distance education, but tablets do not mean much if there is no internet in them. Students have a certain quota and when they exceed that quota, they cannot access."* It should be considered that distance education can be equally effective for all students, especially with full access to digital tools and the internet.

3.7 Social studies teachers' opinions on distance education and face-to-face education preferences

This chapter analyzes and presents the opinions of social studies teachers about their preferences for distance education and face-to-face education in detail. In the interviews, almost all of the teachers think that face-to-face education is more effective and convenient in terms of educational activities. They see distance education as a supportive element of face-to-face education and they have stated that the highest level of efficiency will be obtained when used in this way. In addition, they argued that the implicit dimension of face-to-face education is very different and that schools not only provide children with education, but also develop behaviors and values, thus preparing them to be active citizens of society. They also believe that distance education is not appropriate at the primary and secondary school level and can be used more at the high school and university level.

T1: *"The priority should always be face-to-face education. Because we cannot think of education only as academic success. Social learning, affective learning, students' memories, social cohesion are very important for school. At school, students communicate with us, communicate with their friends, learn to act collectively."* T2: *"School*

culture is very important for children." T3: "Distance education can be used as a type of education that supports face-to-face education."

T4, one of the teachers who expressed the opinion that education can continue as a mixed distance and face-to-face education said: *"It can be mixed education, both distance education and face-to-face education. It can be face-to-face learning, maybe, the theoretical part can be done remotely at home, and the practical part can be left to the school. With experiments, maybe with various games, we can actually make schools more fun."* The planned use of distance education and face-to-face education when and where they are strong can be effective in increasing the effectiveness of education and student achievement. Instead of thinking completely as distance education or completely face-to-face education, an education method that blends both systems was also suggested by the teachers.

4. Discussion

This study, focusing on social studies teachers' opinions on distance education as an alternative to face-to-face education in the post-pandemic period, examined all aspects of distance education in a holistic manner. According to the results of the study, the differences between distance education and face-to-face education were analyzed in 5 different categories. These are physical differences, social differences, time and space differences, differences in the use of materials and differences in skills training. According to teachers' views, distance education differs from face-to-face education mainly in terms of physical and social characteristics. The fact that the courses are held online in a computer environment and that face-to-face interaction and eye contact cannot be established also brings along some social differences. The low level of communication and socialization in distance education leads to differentiation in student and teacher behaviors. In this respect, student-teacher interaction, teachers' classroom control, student interest and student feedback are limited. In some studies (Alharthi, 2020; Başaran et al., 2020; Hebebcı et al., 2020; Kırıkçı et al., 2022), the limited interaction in distance education activities is among the negative opinions. Kaya (2002) argues that distance education differs from face-to-face education in terms of some features. The most fundamental difference in distance education is that teachers and students are in separate places. In this respect, distance education is more flexible and requires constant motivation of students since interaction cannot be established.

In distance education, the type of materials used in the courses differs, and the development of skills in students is limited compared to face-to-face education due to the lack of interaction and practice. In this respect, it is extremely important to prefer face-to-face education in teaching subjects that require interaction and practice.

The effects of distance education and face-to-face education on the teaching process were analyzed in 5 different categories. These are classroom management, communication with students, use of materials, class participation and time management. According to the teachers, classroom management is artificially easier in distance education. With the opportunities offered by technology, the teacher's control over the classroom is artificially stronger. However, although this situation seems positive, it may cause some problems in practice. In Özdoğan and Berkant's (2020) research, teachers stated classroom management as an advantage under the sub-theme of learning environment functionality. Social studies teachers evaluate distance education as unfavorable in terms of communication. They believe that there are some individual differences in communication and that middle school students in adolescence do not communicate, especially due to their shyness. In addition, it was also reported that some technical problems in distance education negatively affect communication. Technical problems such as connection problems negatively affect the teaching process and teaching experiences in distance education in different ways. Arat and Bakan (2011) also reported that the difficulties encountered in communication in distance education negatively affect education.

Teachers stated that the use of materials is more advantageous in the distance education process, that these materials are mostly digital materials, and that physical materials cannot be used. The teachers indicated that they can access many materials during the lesson, especially through Google and Youtube, and that teaching materials are used more frequently in distance education due to the ease of access and display. Pregowska et al. (2021) noted that distance education has many advantages, especially fast access to materials. In the study conducted by

Özdoğan and Berkant (2020), teachers considered the inability to use physical materials in distance education as a disadvantage. The fact that the materials used in distance education are interactive materials that students can interact and feel more will positively affect teaching. Uçar (2016) also determined that the design, visuals, interaction and exercises used in distance education increase students' motivation towards the course.

Class attendance in distance education is often lower due to the limited access to digital tools and the internet. In the digital age we live in, it is imperative that digital tools and the internet are made widely available, especially for educational purposes. In the digital age, children use technology not only for entertainment and personal purposes, but also for research, learning, information, career and developing technology skills (Ardıç & Altun, 2017). Considering that access to the internet may not be possible for every student during the compulsory distance education period due to Covid-19, TRT EBA TV was established and educational activities were carried out through television (Emin, 2020). Teachers think that distance education is convenient in terms of time management but can be interrupted due to some external factors. Since the number of stimuli is more limited in distance education compared to face-to-face education, there is less lost time during the lesson. With the start of the lesson, the teacher can make a quick introduction to the subject in front of the screen and does not deal with routines as in face-to-face education. Therefore, they can use the time allocated for the lesson more effectively. Burke and Dempsey (2020) state that a significant amount of time is saved in distance education due to the practicality of resources and learning plans.

Social studies teachers consider that distance education decreases student achievement. They stated that face-to-face education is the most appropriate method for learning and distance education should be used as a supportive element of face-to-face education. We can see that student success in distance education is 10 to 20 percent lower than in face-to-face education (Bawa, 2016). Adnan and Anwar (2020) state in their study that online learning is not as effective as traditional face-to-face learning. Teachers reported that low academic achievement in distance education is due to the lack of classroom climate, teacher monitoring, teacher reinforcement, peer learning, competition and social activities.

According to the teachers, distance education provides convenience, financial savings, time savings and the ability to use technology for teachers. In addition to these for students, they stated that it offers the opportunity to repeat and reinforce lessons. In a study by Özdoğan and Berkant (2020), teachers also mentioned that distance education provides the opportunity to watch over and over again thanks to its time-independence.

From the teacher's point of view, the opinions on the disadvantages of distance education are as follows: difficulty in monitoring students, teacher-centeredness, inability to communicate with students, inability to socialize and inability to cooperate. From the student's point of view, it consists of the codes of not being able to socialize, not being able to communicate correctly, not being able to develop skills, not being able to develop values, inequality of opportunity and lack of practice. In a study by Kırıkçı et al. (2022), 57 percent of teachers found distance education methods and practices disadvantageous in terms of field education. Distance education also has a significant disadvantage in terms of communication, cooperation and socialization for teachers and students. Students who can communicate and cooperate with their teachers and peers in face-to-face education may become isolated in distance education. In the time spent in front of the computer, students are mostly informed about the content at the theoretical level. The 21st century educational approach of learning by doing and experiencing is not possible in distance education. In addition, it is very difficult for students to acquire some skills and values in distance education.

Social studies teachers face technical problems, structural problems and access problems in distance education. Teachers indicated that they mostly experience connection failures regarding technical problems. In terms of structural problems; they have difficulties with dependence on external factors, communication, absenteeism, inability to conduct measurement and evaluation, digital security, and digital ethics. Studies (Demir & Özdaş, 2020; Özdoğan & Berkant, 2020; Kırıkçı et al., 2022) have found that measurement and evaluation in distance education cannot be carried out adequately. The study conducted by Adıgüzel (2020) determined that teachers tend to use the measurement and evaluation methods used in face-to-face education in distance education. Considering that the measurement dimension as well as the teaching dimension of education is very important in

terms of directing teaching, it is extremely important to conduct studies on the development of measurement and evaluation in distance education. It is also important to address the issues of digital security and digital ethics and to conduct studies in these areas. The security of users in the digitalizing world requires new and comprehensive measures. In terms of digital morality, it is very important to take rapid measures to solve possible problems, especially in a system where children are involved.

This study evaluated teachers' preferences for distance education and face-to-face education and found that face-to-face education is more effective and convenient in terms of educational activities. Teachers see distance education as a supportive element of face-to-face education. Teachers were of the opinion that the implicit dimension of face-to-face education is very different and that schools not only provide children with education but also develop behaviors and values, thus preparing them to be active citizens of society. Teachers also believe that distance education is not appropriate at the primary and secondary school level, but can be used at the high school and university levels.

Acknowledgments

The author thanks, to Dr. Papatya Demir for supporting the data collection process.

References

- Adıgüzel, A. (2020). Salgın sürecinde uzaktan eğitim ve öğrenci başarısını değerlendirmeye ilişkin öğretmen görüşleri [Teachers' views on distance education and evaluating student success during the epidemic process]. *Milli Eğitim Dergisi*, 49(1), 253-271. doi: 10.37669 / milliegitim.781998
- Adnan, M., & Anwar, K. (2020). Online learning amid the Covid-19 Pandemic: Students' perspectives. *Journal of Pedagogical Sociology and Psychology*, 2(1), 45-51. <http://www.doi.org/10.33902/JPSP.2020261309>
- Agnoletto, R., & Queiroz, V. (2020). *COVID-19 and the challenges in Education*. Retrieved from https://www.researchgate.net/publication/340385425_COVID_19_and_the_challenges_in_Education
- Alharthi, M. (2020). Students' attitudes toward the use of technology in online courses. *International Journal of Technology in Education (IJTE)*, 3(1), 14-23.
- Arat, T., & Bakan, Ö. (2011). Uzaktan eğitim ve uygulamaları [Distance education and its applications]. *Selçuk Üniversitesi Sosyal Bilimler Meslek Yüksekokulu Dergisi*, 14(1-2), 363-374.
- Ardıç, E., & Altun, A. (2017). Dijital çağın öğreneni [The learner of the digital age]. *Uluslararası Sosyal Bilgilerde Yeni Yaklaşımlar Dergisi*, 1, 12-30.
- Bakioğlu, B., & Çevik, M. (2020). Covid-19 pandemisi sürecinde fen bilimleri öğretmenlerinin uzaktan eğitime ilişkin görüşleri [Opinions of science teachers on distance education during the Covid-19 pandemic]. *Electronic Turkish Studies*, 15(4), 109-129. <https://dx.doi.org/10.7827/TurkishStudies.43502>
- Başaran, M., Doğan, E., Karaoğlu, E., & Şahin, E. (2020). Koronavirüs (Covid-19) pandemi sürecinin getirisi olan uzaktan eğitimin etkililiği üzerine bir çalışma [A study on the effectiveness of distance education, which is the result of the coronavirus (Covid-19) pandemic process]. *Acedemia Eğitim Araştırmaları Dergisi (AJER)*, 5(2), 368-397.
- Bawa, P. (2016). Retention in online courses: Exploring issues and solutions - A literature review. *Sage Open*, 6(1), 1-11.
- Burke, J., & Dempsey, M. (2020). *COVID-19 Practice in primary schools in Ireland Report*. National University of Ireland Maynooth, Ireland. Retrieved from <https://www.into.ie/app/uploads/2020/04/Covid-19-Practice-in-Primary-Schools-Report-1.pdf>
- Creswell, J. W. (2019). *Nitel araştırmacılar için 30 temel beceri [30 essential skills for the Qualitative researcher]* (H. Özcan, Translation). Ankara: Anı.
- Creswell, J. W. (2015). *Nitel araştırma yöntemleri – Beş yaklaşıma göre nitel araştırma ve araştırma deseni [Qualitative inquiry – research design – Choosing among five approaches]* (M. Bütün, & S. B. Demir, Translation). Ankara: Siyasal.
- Demir, F., & Özdaş, F. (2020). Covid-19 sürecindeki uzaktan eğitime ilişkin öğretmen görüşlerinin incelenmesi [Examination of teachers' opinions on distance education in the Covid-19 process]. *Milli Eğitim Dergisi*, 49(1), 273-292.
- Diñer, S. (2016). Bilgisayar destekli eğitim ve uzaktan eğitime genel bir bakış [An overview of computer assisted education and distance education]. *Adana, Seyhan, Türkiye*.
- Emin, M. N. (2020). Koronavirüs salgını ve acil durumda eğitim [The coronavirus epidemic and education in an emergency]. *Seta Perspektif*, 268, 1-4.

- Hebebcı, M. T., Bertiz, Y., & Alan, S. (2020). Investigation of views of students and teachers on distance education practices during the Coronavirus (COVID-19) Pandemic. *International Journal of Technology in Education and Science (IJTES)*, 4(4), 267-282.
- Holmberg, B. (1995). *Theory and practice of distance education* (Second edition). London: Routledge.
- İşman, A. (2011). *Uzaktan eğitim [Distance education]*. Ankara: Pegem.
- Kaya, Z. (2002). *Uzaktan eğitim [Distance education]*. Ankara: Pegem.
- Kırıkçı, A. C., Arıkan, İ., & Çetin, G. (2022). Sosyal bilgiler dersine giren öğretmenlerin uzaktan eğitime yönelik görüşlerinin incelenmesi [An investigation on the views of teachers about distance education in social studies course]. *Milli Eğitim Dergisi*, 51(234), 1683-1708.
- Kırık, A. M. (2014). Uzaktan Eğitimin Tarihsel Gelişimi ve Türkiye'deki Durumu [Historical development of distance education and the situation in Turkey]. *Marmara İletişim Dergisi / Marmara University Journal of Communication*, 73-94, 21.
- Ministry of National Education [MoNE]. (2022). *Milli Eğitim İstatistikleri Örgün Eğitim [National education statistics formal education]*. Retrieved from https://sgb.meb.gov.tr/www/icerik_goruntule.php?KNO=460
- Mulenga, E. M., & Marban, J. M. (2020). Is COVID-19 the gateway for dijital learning in mathematics education? *Contemporary Educational Technology*, 12(2), ep269.
- Özdoğan, A. Ç., & Berkant, H. G. (2020). Covid-19 pandemi dönemindeki uzaktan eğitime ilişkin paydaş görüşlerinin incelenmesi [The examination of stakeholders' opinions on distance education during the covid-19 epidemic]. *Milli Eğitim Dergisi*, 49(1), 13-43.
- Patton, M. Q. (2015). *Qualitative evaluation and research methods*. Thousand Oaks, CA: Sage.
- Pregowska, A., Masztalerz, K., Garlinska, M., & Osial, M. A. (2021). Worldwide journey through distance education – from the post office to virtual, augmented and mixed realities, and education during the covid-19 pandemic. *Education Sciences*, 11, 118. <https://doi.org/10.3390/educsci11030118>
- Toquero, C. M. (2020). Challenges and opportunities for higher education amid the COVID-19 pandemic: The Philippine context. *Pedagogical Research*, 5(4).
- Uçar, H. (2016). *Uzaktan eğitimde motivasyon stratejilerinin öğrenenlerin ilgileri, motivasyonları, eylem yeterlikleri ve başarıları üzerine etkisi [The effect of motivational strategies in distance education on learners' interests, motivations, action competencies and achievements]* (Doctoral Thesis). Retrieved from the National Thesis Center of the Council of Higher Education. (Thesis No. 432497)
- UNESCO. (2022). *UNESCO'S education response to COVID-19*. Retrieved from <https://www.unesco.org/en/covid-19/education-response/initiatives>
- Uşun, S. (2006). *Uzaktan Eğitim [Distance education]*. Ankara: Nobel.
- Yıldırım, A., & Şimşek, H. (2013). *Sosyal bilimlerde nitel araştırma yöntemleri [Qualitative research methods in the social sciences]*. Ankara: Editions Seçkin.
- Yin, R. K. (2009). *Case study research: Design and method* (4th. ed). Sage
- WHO. (2022). *WHO's Response to Covid-19, 2022 Mid-Year Report*. Retrieved from <https://www.who.int/publications/m/item/who-s-response-to-covid-19-2022-mid-year-report>
- WHO. (2020). *WHO director-general's opening remarks at the media briefing on COVID-19*. Retrieved from <https://www.who.int/director-general/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---11-march-2020>
- Zhong, R. (2022). *The Coronavirus Exposes Education's Digital Divide*. Retrieved from <https://www.nytimes.com/2020/03/17/technology/china-schools-coronavirus.html>

The Role of Problem Formulation in Problem-Based Learning to Improve the Students' Curiosity

Nyoto Suseno¹, Arif Rahman Aththyby¹, Purwiro Harjati¹, Ratini², Dedi Turmudi²

¹ Physics Education Study Program, Universitas Muhammadiyah Metro

² PPG, Universitas Muhammadiyah Metro

Correspondence: Dedi Turmudi, Teacher Profession Program (PPG), Universitas Muhammadiyah Metro, Metro Lampung Indonesia 34111. E-mail: tdeditur@gmail.com

Abstract

Not many researchers report how to anticipate learning during the new normal, even though students are used to learning online, and it becomes a new challenge if they have to learn face-to-face after the pandemic ends. This article discusses PBL strategies integrated into blended learning (BL) as a solution in the new normal era to develop 21st-century skills, namely with the foundation of curiosity. This study aims to reveal the role of problem formulation in the PBL model in a blended learning framework to grow curiosity. The subjects of this study consisted of students of SMA Negeri 1 Metro and students of Physics education FKIP UM Metro. The research includes two stages, stage 1, the role of problem formulation in Physics subjects at SMA Negeri 1 Metro, to gain good experience in applying PBL, which is then applied to lectures in Higher Education, as stage 2. Data collection is carried out with documentation instruments, observations, and interviews. Data processing is carried out qualitatively based on observation through the involvement of researchers as participant observants—data analysis, including tabulation, classification, description, and interpretation to make conclusions. The results show that current learning needs to take advantage of online learning channels. The formulation of the PBL problem largely determines the occurrence of the learning process. The formulation of problems related to the application of technology is more exciting and can grow curiosity more optimally. So, it is recommended that design learning must facilitate the use of learning channels available online. The formulation of problems in PBL must be designed appropriately. It should be related to the application of technology so that the learning process runs well and can grow student curiosity.

Keywords: Blended Learning, Curiosity, PBL, Problem Formulation

1. Introduction

1.1. Identified problem

Many researchers report results related to PBL in learning in various fields of study and at various levels of schools (K-12) and universities (PT). In general, however, few discuss the formulation of the problem in PBL syntax and its effect on learners' curiosity. Search results in *Google Trends* generated a description as follows:

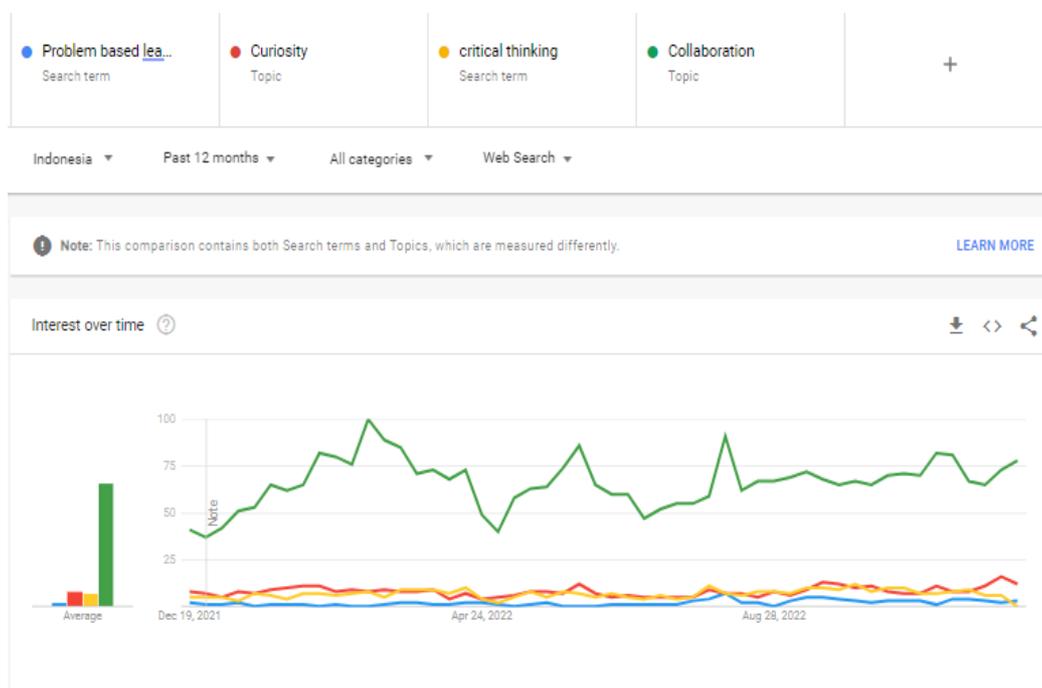


Figure 1: Google Trends Report
(<https://trends.google.com/trends/explore?>)

The picture shows a clear description that the PBL model is more dominant in collaboration, while critical thinking and curiosity intersect. It means that the gap in research in this field is still very high, so researchers are interested in researching this variable. Therefore, *this study aims to reveal the role of problem formulation in the PBL model in the blended learning framework to grow curiosity.* Previous research (Chen et al., 2017) produced findings, namely (1) sentence type classification can improve the performance of sentence-level sentiment analysis; (2) the proposed approach achieves state-of-the-art results on several benchmarking datasets (p.221). Similarly, the subjects and models of analysis and research contacts are different. Chen et al. (2017) studied more about analyzing sentence formulations in a context outside the subject of Physics.

The *COVID-19* pandemic has resulted in all activities being unable to run as they should, including the field of education. The learning process in the classroom cannot be carried out freely. As a consequence, (Ciotti et al., 2020; Daniel, 2020; Pfefferbaum & North, 2020; Watkins, 2020; Kogan et al., 2020; Toquero, 2020) the *COVID-19* pandemic has forced schools to conduct online learning. However, online learning is a new challenge for educators and is the best choice to prevent the transmission (Chick et al., 2020; Ferdig et al., 2020; Astini, 2020; Liguori & Winkler, 2020) of *covid-19* (Handarini & Wulandari, 2020). While still providing meaningful learning for students even though it is becoming the new normal, especially with the availability of technology based on Industrial revolution 4.0 and even 5.0 (Goddess, 2020; Jayul & Irwanto, 2020; Suseno et al., 2021).

As the *COVID-19* pandemic began to recede, learning was again held face-to-face in the classroom. However, it is certainly not easy because students have begun to get used to learning online, which has changed their learning patterns and habits. It can be concluded that (Sugiarto, 2020; Habibi, 2020; Turmudi & Ratini, 2022) *post-covid-19* pandemic habits are certainly not the same as before. Therefore, new learning strategies are needed (Widiantari, 2020; Indrawati, 2020), for example, by changing methods, models, and media (3M) or even changing the learning system to produce excellent and meaningful learning (Gusti, 2020).

Apart from *Covid-19*, the *Industrial Revolution 4.0* (IR-4.0) has also caused problems of millennial disruption in the 21st century. One of the disruptions is that students' mindsets and learning patterns have significantly changed. The memory capacity of his brain is helped by (Saad et al., 2018) *cyber memory*, whose capacity is much larger and more accessible. So, human knowledge is not only what has been learned but also what has not been learned. Even humans can search for it through (Suseno et al., 2019), *the big-data* facility stored in cyberspace (Sagiroglu & Sinanc, 2013). Primary if it is associated with the 21st century, where the characters multitask, *multimedia*,

online social networking, online information searching, and game online (Kurniawan, 2019). All this also impacts the implementation of learning, objectives, strategies, methods, and approaches to learning. Therefore, educators must make changes to prepare a resilient generation with global competitiveness (Sedana, 2019).

The development of technology has also disrupted the field of education. The learning process is no longer a monopoly of educational institutions and teachers/lecturers. Many scholars (Siahaan, 2019; Suseno & Riswanto, 2020), suggest that *learning channels* replace sources of knowledge in the classroom, both in the form of information, animation, tutorials, even *Artificial Intelligence (AI)*, *Augmented Reality (AR)* and so forth (Kibria et al., 2018).

1.2. Literature Review

The spirit of IR-4 and IR-5 has provided a variety of online-based technology features (Keshavarz & Ghoneim, 2021). Therefore, *online learning* uses zoom meetings, Google meet, moodle, Schoology, google classroom, teacher's room, and other social media. *Google makes* it easier for teachers and students to learn during the pandemic because they do not need to download the application, thus reducing storage space on *smartphones* (Haryani, 2020). *Google meet* can be used as a live learning solution via video conferencing. *Google classroom facility* is an application that allows the creation of virtual classrooms, facilitating interaction between lecturers and students online (Wijayanto et al., 2021). *Google Classroom* makes it easier for teachers to manage learning and convey information precisely and accurately, as well as a medium for assignments without using paper (Sutrisna, 2018). With the availability of online-based technology, it is feasible for educators to design learning that benefits all stakeholders in the world of education (Judge, 2016; Gunawan & Sunarman, 2017).

Beyond millennial disruption, the need for competence has also experienced disruption, where many professions are lost and replaced with new professions (Hartati, 2020). *The 21st Century Skills Set* needed critical thinking and problem solving, collaboration, agility & adaptability, initiative & entrepreneurship, assessing & analyzing information, communication, curiosity, and imagination (Rotherham & Willingham, 2010). A high order of thinking (*HOTs*) to face the era of disruption is a solution so that students are trained to think critically (Primary & Pramesti, 2018). In fact, learning objectives essentially include cognitive, affective, and psychomotor aspects. Therefore, the learning (Mazarno & Kendall, 2017) content of the 21st century includes learning and thinking skills, ICT literacy, and *life skills* (Winaryati, 2018).

The curiosity aspect is fundamental to the various capabilities needed in the digital century. Curiosity is an attitude to know and continue to find out about a problem (Harianja, 2020). Curiosity is a significant profit in developing knowledge and skills, and even (Dyche & Zayas, 1995) *the Agility mindset* is greatly influenced by curiosity. Further, curiosity is an essential component in developing an agility mindset. It means that (Storme et al. 2020; Muceldili et al. 2020) *curiosity* is beneficial for developing an agility mindset (Ulrich & Yeung, 2019).

Competencies are needed to build various competencies in the 21st century, so growing *curiosity becomes very important*. Curiosity can be obtained, one of which is by using *Problem-Based Learning (PBL)* or problem-based learning. Basically, *PBL* emphasizes learning as a process of problem-solving and critical thinking in an actual context (Khoiriyah et al., 2018). *PBL* provides opportunities for students to learn a broader range of things focused on preparing students to become active and responsible citizens. The learning patterns of students familiar with online learning and the number of learning channels (Glazer, 2001) that can be accessed online also need to be considered in designing learning. Based on the description above, this paper reveals an important part: developing student *curiosity* in *blended learning* mode through sentence selection in *problem-based learning* (Harianja, 2020).

To empower all the potentials and facilities available both offline and online, it is necessary to apply learning with various modes that combine online and offline learning by utilizing various learning channels in the form of writing, images, animations, and others called *blended learning* (Hockly, 2018).

1.3. Research question

Considering the empirical and theoretical studies above, researchers emphasize that this research is expected to contribute science to science. Therefore, the formulation of the problem is structured as follows:

1. What is the role of the *PBL model problem formulation in the blended learning framework to grow curiosity in stage 1?*
2. What is the role of the *PBL model problem formulation in the blended learning framework to grow curiosity in stage 2?*

2. Research Methods

2.1. Research Design

The study is a descriptive qualitative to describe students' responses to sentence formulation forms in problem-based learning. This type of research uses data in the form of documents and the results of observations on the implementation of learning related to teacher/lecturer statements and student responses when presented with problems expressed by teachers or lecturers in learning (Creswell, 2012).

2.2. Participants

This study involved 186 students of SMAN1 state high school students. All samples were taken from a Physics class of 67 men and 109 women. Learner data can be seen in the following table.

Table 1 Data of selected participants

K-Classes	Males	Females	Total
X IPA 3	8	26	34
XI IPA 6	19	15	34
XII IPA 2	18	18	34
XII IPA 6	9	27	36
XII IPA 7	13	23	36
Total	67	109	176

2.3. Instruments

In this study, the researcher served as the main instrument. However, in taking research data, it uses three auxiliary instruments: documentation review, direct observation, and structured interviews. Researchers took secondary documents from all Physics Teachers at SMAN 1 Metro, and researchers took secondary data by observing directly in the class that carried out PBL in the Physics class. In addition to the secondary data of observation, the researchers also interviewed physics teachers at SMAN1 Metro City.

2.4. Data collecting technique

The data were taken by observation and retrieval in two stages—the first stage of taking data from physics learning activities at SMA Negeri 1 Metro, which uses PBL. Researchers observe learning related to problems posed by teachers and student responses in the form of written and verbal expressions, as well as data on images, gestures, and other data related to student activities when responding to problems expressed by teachers in PBL. In addition, data were obtained from learning activity documents using google meet (Mirhosseini, 2020), *google classroom*, and *WhatsApp groups*, as well as the results of observations and reflections on *lesson study (LS)* activities (Seleznyov, 2018).

Phase 1 research was carried out in physics subjects at SMA Negeri 1 Metro. Five physics teachers at SMA Negeri 1 Metro with relevant education have been certified. Learning is carried out online. Online mode learning at SMA Negeri 1 Metro has been carried out since March 2020 until this partnership program activity was implemented. The second stage is the implementation of PBL in the UM Metro physics education study program in the quantum physics course, which is designed based on the findings of phase 1 research in partner schools related to sentences

used in PBL. In the implementation, observation and data collection are carried out in stage 1 and coupled with questionnaires given to students participating in quantum physics courses. Based on these data, an analysis is carried out through description and interpretation to obtain conclusions.

2.5. Data Analysis Techniques

Researchers analyzed problem sentences (in Indonesian) used in PBL learning to be grouped according to their type and shape. Then the researchers analyzed the effect of the problem sentence on student responses in the form of individual physical activity and student learning interactions. Analysis of student responses in this study focused on the (Turmudi, 2020) *curiosity* of learners. The *curiosity* in this study includes four aspects, namely (1) paying attention, (2) responding to questions, (3) asking follow-up questions, and (4) looking for further information/others from various ways. The curiosity level is set by the researcher as follows:

1. Level 4, if all four aspects are implemented;
2. Level 3, if aspects (1), (2), and (3) are implemented;
3. Level 2 if aspects (1) and (2) are implemented;
4. and level 1 if only aspect (1) is implemented.

Based on the analysis results, the researcher carried out an interpretation to establish good sentences in PBL that could grow students' *curiosity levels*.

3. Results

The research seeks answers to the problem formulation, namely: what is the role of the PBL model problem formulation in the blended learning framework to grow curiosity in stage 1? and play a role of the formulation of the *PBL model problem in the framework of blended learning to grow curiosity in stage 2?*

3.1. Description of PBL Phase 1 Implementation Data

The results of the study of the RPP document (lesson plan) and class observations obtained online learning data using PBL there are three classes as follows:

Table 1. Problem Formulation Data and Online Mode PBL at Partner Schools

No	Teachers, Classes & Materials	Learning Modes and strategies	Raised issues
1.	GM.1 XI IPA 7 Dopler Effect	The online mode uses google meet, assisted by google classroom for materials and assignments. The media uses video, and discussions are carried out through google meet.	1. If a sound source moves, for example, the siren of an ambulance car from afar is heard when it gets closer to us. How is the frequency heard? Is it getting stronger or weaker? 2. Furthermore, what if ambulances move further and further away from us? How is the frequency of the sound heard? (Type 1)
2.	GM.2 XI IPA2 Elasticity	Online mode using WA assisted by Google Classroom. Media using video, and discussion through class WAGs, google classroom materials, and assignments	What is an Elastic object? What are some examples of elastic objects? If there are two identical springs, specify the following: 1. Comparison of total K if arranged in series and parallels? 2. Change the length if given the same style. (Type 2)
3.	GM.3 X IPA 3 Vector Summatio	The online mode uses WA group and google classroom. Media using video, and discussion	About the story: Three people participated in the race, pulling one pole (available pole/other style ignored) with three ropes. Tini pulled the rope towards the east in a force of 2 N.

	n of one field	through group and class WAGs and assignments through google classroom	Tina pulled the rope towards the north in a force of 4 N. Toni pulled the rope in a force of 6 N towards the south. a. Draw vector summation in polygon b. What is the resultant force of the three directions so that the pole collapses c. Where did the pole collapse? (<i>Type 2</i>)
4.	GM.4 XII Static Electricity	The online mode uses WA and <i>google classrooms</i> , and the media uses video and discussion through WAG.	What do protons and electrons mean? Under what circumstances is an object said to be negatively or positively electrically charged? (<i>Type 1</i>)
5	GM.5 XI Fluid	The online mode uses google meet, assisted by WA, for materials and assignments. Media uses real objects, as well as discussions through google meet.	If the bottle contains water, it is given a hole with an equal distance towards the vertical. When the three holes are opened, what is the length of the horizontal flow to the three holes? What is the relationship between the height of the pit from the ground and the horizontal flow length? Why would a higher-mounted water tower be better? (<i>Type 3</i>)

3.2. Description of PBL Implementation Data Phase 2

Phase 2 research is carried out in quantum physics lectures in the UM Metro physics education study program. The learning design is prepared based on an analysis of problem-based learning obtained in schools, and learning is carried out through blended learning mode using the PBL approach. The data from the RPP design and class observations can be stated as follows:

Table 2: Problem Formulation Data and Online Mode PBL in Higher Education

No	Classes of Knowledge/ Materials	Learning Modes and approaches	Raised issues
1.	UM, Metro physics education 7th semester TA. 2021/2022 Atomic models in quantum physics review	Blended learning mode uses classes and zoom meetings, assisted by MFIs.	X/Rontgen rays result from the excitation of electrons from one particular sub-skin to another (outer). Therefore, for the calculations to get x-rays or x-rays to be more precise, we must know the correct/appropriate atomic model. Which atom model is more appropriate?

3.3. Learning Data Analysis Phase 1

3.3.1. Analysis of the online mode used

The analysis of the online mode used can be grouped into Mode 1 and Google Meet, assisted by Google Classroom. Mode 2, Google Meet, assisted by WA, and Mode 3, WA, assisted by Google Classroom. While the media used is relatively the same, namely videos and problem sheets. Based on the results of interviews and observations, the following notes were found:

Table 3: Online mode data used in phase 1 learning and student responses

No	Learning Modes and strategies	Student Response Percentage	Note
----	-------------------------------	-----------------------------	------

1.	Mode 1, online using google meet, assisted by google classroom.	The average student who responded was 8.3% of the total number of students	Answers are their ideas that are remembered. 95.2% completed the task.
2.	Mode 2, online using WA assisted by Google Classroom.	The average student who responded was 21.3% of the total number of students	Answers are obtained from browsing results when learning and from one's ideas. 100% completed the task
3	Online mode 3 uses google meet, assisted by WA.	The average student who responded was 16.7% of the total number of students	Answers are their ideas that are remembered or browsed before because LKS has been given before. 100% complete the task.

Table 3 shows that students responses are high due to the opportunity for students to browse to access learning channels in online facilities. When learning using google meet (*mode 1*), students focus on participating in online learning, so the opportunity to browse is less effort than in offline learning. In online learning mode 3, the student response was somewhat higher even though they used Google meet because the student' work sheet (LKS) had been given before, so students had time to browse. Whereas in mode 2, because there is no face-to-face between students and teachers, and the online application still allows students to browse, the student's response to the questions asked by the teacher is high. Therefore, a good experience that will be adopted in the design of learning in higher education is the provision of opportunities for students to access learning channels available in cyberspace.

3.3.2. Analysis of problem types used in problem-based learning

Analysis to classify the problems expressed in learning in stage 1, then the problems expressed by the teacher in learning can be grouped into three types, namely: **Type 1**, problems related to daily activities around students; **Type 2**, concepts related issues to be discussed; **Type 3**, problems related to the application of physics. The results of the analysis of the relationship between problem type and curiosity can be shown as shown in the following table:

Table 4: Data on problem types expressed in stage 1 learning and student responses

No	Raised issues	Student Response	Aspect/level of curiosity	Notes on the results of the reflection
1.	Type 1. problems related to daily activities around students	The average number of students who responded reached 9.7% of the number of students, with a response time lag after 2 minutes	(1) Watching (2) Responding to questions (3) someone asked	Online mode using WA assisted by google classroom has more interaction than using google meet assisted by google classroom.
2.	Type 2 , concepts related issues to be discussed;	The average student who responded reached 26.4% of the number of students, with a response time lag of 1 minute	(1) Watching (2) Responding to questions	The online mode uses WA group and google classrooms. Media using video and discussion through WAG, as well as materials and assignments through google classroom
3.	Type 3 , problems related to the application of physics in technology	The average student who responded reached 16.7% of the number of students, with a response time lag after 1 minute	(1) Watching (2) Responding to questions (3) someone asked	The formulation of the presented problem is related to applying physics to technology, which is more interesting for students. In addition, students' answers and ideas are also more diverse

			(4) Looking for more information	
--	--	--	----------------------------------	--

The analysis of the types of problems used in learning in partner schools) shows that in the formulation of the PBL problem type 3, namely the formulation of the problem presented related to the application of physics in technology, the percentage of student responses is more than type 1, although not as much as type 2. Likewise, with the time lag needed by students in responding to questions. However, the effect of the formulation of type 3 problems on curiosity levels is more significant than others. Therefore, this good experience will be used in designing learning in college in quantum physics courses.

3.4. Phase 2 Learning Data Analysis

Applying PBL Phase 2 in quantum physics lectures uses *blended* learning mode learning by choosing the formulation of problems according to type 3. The problems expressed are associated with applying physics to technology, according to Table 2. The expected target of learning outcomes is the growth of a *curiosity mindset* for students. Some of the data obtained are as follows:

Table 5: Data on the effect of the problem expressed on *curiosity*

No	Raised issues	Student Response as an aspect of curiosity	Student Activities	Document
1.	X/Rontgen rays result from the excitation of electrons from one sub-skin to another. Therefore, for the calculation to get x-rays or Rontgen to be more precise, it must use a proper/appropriate atomic model. Which atom model is more appropriate?	Level 1 Pay attention 100%	(1) Watching (2) Reading MFIs	
		Level 2 Responding to Questions	(1) Browsing using Mobile (2) Discussion (3) Answering questions	
		Level 3 Ask	(1) Asking (2) Arguing (3) Comparing results	
		Level 4 Looking for More Information	Disclosing and questioning other matters related to further material.	<ul style="list-style-type: none"> Asking about how x-rays impact our bodies Linking the material to the Quran After class hours are over, there are still students who ask about the relationship between the experimental spectrum and the spectrum of diffraction experiment results

Table 5 states that in the implementation of stage 2 learning in quantum physics lectures in the Physics education study program FKIP UM Metro, it was found that the curiosity of students reached level 4, namely paying attention, responding/answering questions, submitting questions and conveying ideas and trying to ask further questions and seek further information.

3.5. Discussion

This study seeks answers to whether the PBL model problem formulation in the blended learning framework is to grow curiosity in stage 1 and the role of the PBL model problem formulation in the *blended learning framework in growing curiosity in stage 2*.

The findings seen in terms of online mode applications can be grouped into three, namely 1). Google Meet assisted with Google classroom, 2). Google Meet is assisted with WA, and 3). WhatsApp is assisted with Google Classroom. Previous research reported how these three patterns were used.

The use of Google Meet (G-Meet) has also been done by researchers before (Turmudi & Ratini, 2022), although in different study other than physics. Moreover, assisted by Google classroom (G-Classroom), the results are very positive (Gunawan & Sunarman, 2017; Banat, 2020). The results show that Google Meet is favored by students because of the ease of this type of application although it is below the choice of students to use Zoom (Turmudi & Ratini, 2022). The use of G-Meet Technology is supported by the theory of the use of Technology (Hamidy, 2021; Andriani & Bram, 2022). Finally, the use of G-Meet is interpreted as a solution due to demands and needs. As a result, G-Meet is a theoretical and practical choice to strengthen student learning outcomes in physics classes.

As with using G-Meet individually, G-Meet assisted by WhatsApp becomes interesting because it complements each other. In the previous research, it was reported that G-Meet has advantages, namely Google Meets (G-Meet) Provides longer times (LT), Practical (P), Comfortable or Sophisticated (C/S), Accessible in poor signal (N), and Easiness to access (E/A) as reported (Turmudi & Ratini, 2022, p. 23). Meanwhile, WhatsApp is reported to positively affect learning achievement even in accounting studies at SMK (Noviana & Solichin., 2021). The findings also reported a positive and significant influence between the use of WhatsApp social media and the motivation for student learning in the Bogor district with student subjects in general (Sahid, 2020). Other researchers stated that WA positively impacted physics education assessment lectures (Khusaini et al., 2017). It means that both G-Meet and WA interact with each other to support successful learning. Therefore, both G-Meet and WA can still support any student's Physics learners.

WhatsApp, assisted by Google Classroom, has a hand in supporting student learning outputs. Previous researchers combined WA with Zoom, and the results were positive. However, if combined with Zoom's influence is better than the influence of WhatsApp (Kusuma & Hamidah, 2020). However, this study occurred in *Madrasah Aliyah Negeri (MAN)* in Mathematics subject. Other researchers reported in the University's level in the field of English with the conclusion that Zoom and WA, combined, produced a positive influence during the Covid-19 pandemic (Suadi, 2021). This result means that Zoom and WA media will have a simultaneous influence compared to if the two were separated. As a result, these media combinations can still be used occasionally during the New Normal.

In the phase 1 study, three types of problem formulations were obtained: **Type 1**, problems related to daily activities around students; **Type 2**, concepts related issues to be discussed; **Type 3**, problems related to applying physics. Admittedly it is not easy to compare with previous studies because the use of PBL is spread across different fields of study. For example, in the field of mathematics with variables of effectiveness and student ability in problem-solving with the PBL model (Rahayu et al., 2022). However, the most apparent regarding the previous reference is the opinion to classify opinionated sentences into three types according to the number of targets appearing in a sentence (Rahayu et al., 2022). Another example of the application of PBL is in EFL contact with the variable effectiveness of PBL in improving writing ability (Chen et al., 2017; Ilham, 2022). In theory, the above findings are supported by scholars (Allen et al., 2011). The three problems related to technology applications are more attractive to students. It is the opinion of Veselá et al., (2004) that the *Topic-Focus Articulation (TFA) is feasible, the perception of contextual boundness*. As a result, with these findings, PBL and blended learning have a positive role in the development of HOTS of student participants.

In the phase 2 study, it was found that students' curiosity reached level 4: paying attention, responding/answering questions, conveying ideas, and trying to ask further questions and seek further information. Research related to this matter precisely in the field of Physics does not exist, but if the positive meaning is widely reported in the field of Physics in Higher Education (Khusaini et al., 2017), in the field of mathematics studies with a combination of Zoom and WA (Suadi, 2021), in the field of Accounting in Vocational Schools (Kusuma & Hamidah, 2020; Noviana & Solichin., 2021), and ELT contact in Higher Education (Suadi, 2021). Simultaneously the application of PBL in this research is in line with previous findings (Riska et al., 2022). In addition, this finding is supported by a theory stating that whatever form technology has an essential role in students (Alabdulkareem, 2015; Tess, 2013). The result of positive influence applies even if it is not in the same field of Physics.

Student response is high because of the opportunity for students to browse to access learning *channels* in online facilities. In this context, previous research reported that higher education students were concerned about virtual interaction because most have more than one account on social media to interact with others (Oktavia et al., 2016). When learning using G-Meet (*mode 1*), students focus on participating in online learning, so the opportunity to browse is little. This data is reported in the results of research findings in research courses (Turmudi & Ratini, 2022). Students' sense of reasoning is reduced because online lectures do not stimulate students to surf the internet. In online learning mode 3, the student response was somewhat higher even though they used G-Meet because students' work sheet (LKS) had been given before, so students had time to browse. Previous research on the function of LKS has a role as a trigger for learning in high school (Amelia, 2013; Sari et al., 2015). Whereas in mode 2, because there is no face-to-face between students and teachers, and the online application still allows students to browse, the student's response to the questions asked by the teacher is high. This substance is believed to be positive, as previously reported by researchers regarding information from the internet (Komalasari, 2020; Priyono et al., 2015; Sasmita, 2020). Therefore, the excellent experience that will be adopted in learning design in higher education is providing opportunities for students to access learning channels available in cyberspace (Komalasari, 2020). As a result, the more problem formulations that prevent students from surfing the internet, the higher the browsing power of students to get sources from the internet.

Based on the analysis of problem types, it was found that in the formulation of type 3 PBL problems related to the application of physics in technology, the percentage of student responses was more than type 1, although not as much as type 2. These results support previous research on Curiosity (Chen et al., 2017). The suitability of these results is minimal when referring to the results point by point as the Google Trend search results report that collaboration is the most significant positive impact of PBL (Google Trends :<https://trends.google.com/trends/explore>, 2022), even if it is not in a physics course. It means that the positive influence of curiosity is a new contribution of empirical data and is theoretically valid (Ulrich & Yeung, 2019). Likewise, with the time lag needed by students in responding to questions. However, the effect of the formulation of type 3 problems on curiosity levels is more significant than others. As a result, based on empirical data, researchers deserve to continue learning PBL in quantum physics courses in higher education as part of scientific contributions in English (López-Navarro et al., 2015). Overall (as shown in table 5), the results of the implementation of stage 2 learning in quantum physics lectures in the FKIP UM Metro Physics education study program was promising. It was found that students' curiosity reached level 4, namely *paying attention, responding/answering questions, submitting questions and conveying ideas and trying to ask further questions and seek further information*. Above all, we have concluded that the overall combination of media positively affects curiosity and critical thinking.

3.6. Limitation

This study only found three problem formulations from observing the learning process in 5 classes from 18 classes at SMA Negeri 1 Metro. There may still be other types of problem formulations, so this is one of the limitations of this study. However, of the three types of problem formulation, problem formulation types related to the application of physics in technology can be used to increase student curiosity in problem-based learning.

4. Conclusions and Implications

4.1. Conclusion

Referring to the formulation of the problem and the description of the findings and discussion, the researcher concluded that several essential points had been generated from this study. First, students have become accustomed to looking for sources online, so learning needs to be facilitated to take advantage of various learning *channels* in cyberspace. Second, the formulation of problems in problem-based learning is decisive in triggering students' learning process. Third, the formulation of problems related to the application of physics in technology is more attractive to students and can foster *curiosity* more optimally. Fourth, the formulation of problems in PBL associated with technology can encourage students to pay attention, respond/answer problems, ask questions, and look for other information. They can also ask more about other things related to the material and look for and express other ideas related to the learning material.

4.2. Implications

Students learning patterns have changed due to the Covid-19 pandemic and the industrial revolution 4.0. Therefore, in making learning designs, it is necessary to provide space and time for students to take advantage of various *learning channels* that can be accessed online. In making a problem-based learning design, the formulation of the problem must be designed properly and precisely because it determines the learning process that will take place. In problem-based learning, you can use problem formulations associated with technology to make them more exciting and foster students' curiosity.

5. Acknowledgment

This study was funded by the Campus research program of Universitas Muhammadiyah Metro for the data collection and analysis data. Thus, the authors thanked Universitas Muhammadiyah Metro for the donor to fund the project under the schema of OPR 2021. The authors also thank many anonymous parties who supported the technical process and countless non-financial assistance.

References

- Alabdulkareem, S. A. (2015). Exploring the use and the impacts of social media on teaching and learning science in Saudi. *Procedia - Social and Behavioral Sciences*, 182, 213–224. <https://doi.org/10.1016/j.sbspro.2015.04.758>
- Allen, D. E., Donham, R. S., & Bernhardt, S. A. (2011). Problem-based learning. *New directions for teaching and learning*, 2011(128), 21–29. <https://doi.org/10.1002/tl.465>
- Amelia, O. T. (2013). Pembuatan LKS fisika berbasis ICT dengan mengintegrasikan nilai pendidikan karakter kelas x semester 2 Staf Pengajar Jurusan Fisika [*Making ICT-based physics LKS by integrating the value of character education class x semester 2 teaching staff of the department of physics*], FMIPA Universitas Negeri Padang. *Pillar of Physics Education*, 2(October), 89–96.
- Andriani, E., & Bram, B. (2022). Technology use in teaching literature amid and post-pandemic: teachers' perceptions. *Premise: Journal of English Education*, 11(2), 329–347. <https://doi.org/10.24127/pj.v11i2.4908>
- Astini, N. K. S. (2020). Tantangan Dan Peluang Pemanfaatan Teknologi Informasi Dalam Pembelajaran Online Masa Covid-19 [*Challenges and opportunities for utilizing information technology in online learning during the covid-19 period*]. *Cetta: Jurnal Ilmu Pendidikan*, 3(2), 241–255.
- Banat, A. (2020). Kemandirian belajar mahasiswa penjas menggunakan media google classroom melalui hybrid learning pada pembelajaran profesi pendidikan di masa pandemi covid-19 [*The independence of learning for students using google classroom media through hybrid learning in the learning of the educational profession during the Covid-19 pandemic*]. *Jurnal Teknologi Pendidikan (JTP)*, 13(2), 119–125. <https://doi.org/10.24114/jtp.v13i2.20147>
- Chen, T., Xu, R., He, Y., & Wang, X. (2017). Improving sentiment analysis via sentence type classification using BiLSTM-CRF and CNN. *Expert Systems with Applications*, 72, 221–230. <https://doi.org/10.1016/j.eswa.2016.10.065>

- Chick, R. C., Clifton, G. T., Peace, K. M., Propper, B. W., Hale, D. F., Alseidi, A. A., & Vreeland, T. J. (2020). Using technology to maintain the education of residents during the COVID-19 pandemic. *Journal of Surgical Education*, 77(4), 729–732.
- Ciotti, M., Ciccozzi, M., Terrinoni, A., Jiang, W.-C., Wang, C.-B., & Bernardini, S. (2020). The COVID-19 pandemic. *Critical Reviews in Clinical Laboratory Sciences*, 57(6), 365–388.
- Creswell, J. W. (2012). *Educational research: planning, conducting, evaluating, quantitative and qualitative research (Fourth Edition)*. United State of America: Pearson Education Inc.
- Daniel, J. (2020). Education and the COVID-19 pandemic. *Prospects*, 49(1), 91–96.
- Dewi, W. A. F. (2020). Dampak Covid-19 terhadap implementasi pembelajaran daring di Sekolah Dasar [The impact of Covid-19 on the implementation of online learning in elementary schools]. *Edukatif: Jurnal Ilmu Pendidikan*, 2(1), 55–61.
- Sahid, H. M. (2020). Pengaruh Media Sosial WhatsApp Terhadap Motivasi Belajar Mahasiswa Di Kabupaten Bogor Wilayah Selatan [The influence of whatsapp social media on student learning motivation in Bogor regency, south region]. *JTEV (Jurnal Teknik Elektro Dan Vokasional)*, 6(2), 248–257.
- Dyche, L., & Zayas, L. H. (1995). The Value of Curiosity and Naivete for the Cross-Cultural Psychotherapist. *Family Process*, 34(4), 389–399. <https://doi.org/10.1111/j.1545-5300.1995.00389.x>
- Ferdig, R. E., Baumgartner, E., Hartshorne, R., Kaplan-Rakowski, R., & Mouza, C. (2020). Teaching, technology, and teacher education during the COVID-19 Pandemic. In *Angewandte Chemie International Edition*, 6(11), 951–952. Association for the Advancement of Computing in Education Waynesville, NC.
- Glazer, E. (2001). Problem based instruction. *Emerging Perspective on Learning, Teaching, and Technology*.
- Gunawan, F. I., & Sunarman, S. G. (2017). Pengembangan Kelas Virtual dengan Google Classroom dalam Keterampilan Pemecahan Masalah (Problem Solving) Topik Vektor pada Siswa SMK untuk Mendukung Pembelajaran [Virtual classroom development with google classroom in problem solving skills vector topics in vocational school students to support learning]. *Prosiding Seminar Nasional Etnomatnesia*, 340–348.
- Gusti, Sri, D. (2020). Belajar Mandiri: Pembelajaran Daring di Tengah Pandemi [Self-learning: online learning in the midst of a pandemic]. In *Yayasan Kita Menulis* (Vol. 4, Issue 3). Yayasan Kita Menulis.
- Habibi, A. (2020). Normal Baru Pasca Covid-19 [The New Normal Post Covid-19]. *Adalah*, 4(1), 197–204.
- Hakim, A. (2016). Efektifitas penggunaan E-Learning moodle, google classroom dan Edmodo [Effectiveness of using E-Learning moodle, Google classroom and Edmodo]. *I- statement; information system and technology manajemnt*. 2, 1.
- Hamidy, A. (2021). Zoom meeting vs google classroom : perbedaan hasil belajar matematika berdasarkan platform pembelajaran daring [Zoom meeting vs google classroom: differences in mathematics learning outcomes based on online learning platforms]. *Tarbiyah Wa Ta'lim: Jurnal Penelitian Pendidikan Dan Pembelajaran*, 8(1), 61–68. <https://doi.org/10.21093/twt.v8i1.3225>
- Harianja, J. K. (2020). Mengembangkan Sikap Rasa Ingin Tahu (Curiosity) Pada Pelajaran Fisika Menggunakan Model Pembelajaran Flipped Classroom [Curiosity in physics lessons using a flipped classroom learning model]. *Jurnal Pendidikan Fisika Dan Teknologi*, 6(1), 121–130. <https://doi.org/10.29303/jpft.v6i1.1738>
- Hartati, I. (2020). Strategi pembangunan sdm kementerian keuangan republik indonesia dalam menghadapi tantangan era disrupsi 4.0 [The human resource development strategy of the ministry of finance of the republic of Indonesia in facing the challenges of the disruption era 4.0]. *Jurnal BPPK : Badan Pendidikan Dan Pelatihan Keuangan*, 13(1), 109–129. <https://doi.org/10.48108/jurnalbppk.v13i1.493>
- Haryani, E. S. (2020). Efforts to Improve Learning Activeness of Grade 5 Students Through the Google Meet Application. *Social, Humanities, and Educational Studies (SHEs): Conference Series*, 3(3), 526–530.
- Hockly, N. (2018). Blended Learning. *ELT Journal*, 72(1), 97–101. <https://doi.org/10.1093/elt/ccx058>
- Ika Handarini, O., & Sri Wulandari, S. (2020). Pembelajaran Daring Sebagai Upaya Study From Home (SFH) Selama Pandemi Covid 19 [Learning as a study from home (SFH) effort during the covid 19 pandemic]. *Jurnal Pendidikan Administrasi Perkantoran (JPAP)*, 8(3), 496–503.
- Ilham. (2022). Implementing project-based learning for efl students ' writing achievement at the tertiary level. *English Review : Journal of English Education*, 10(3), 1003–1012.
- Indrawati, B. (2020). Tantangan dan Peluang Pendidikan Tinggi Dalam Masa dan Pasca Pandemi Covid19 [Challenges and opportunities for higher education during and after the covid-19 pandemic]. *Jurnal Kajian Ilmiah*, 1(1), 39–48.
- Jayul, A., & Irwanto, E. (2020). Model Pembelajaran Daring Sebagai Alternatif Proses Kegiatan Belajar Pendidikan Jasmani di Tengah Pandemi Covid-19 [Online learning model as an alternative to the process of physical education learning activities in the midst of the covid-19 pandemic]. *Jurnal Pendidikan Kesehatan Rekreasi*, 6(2), 190–199.
- Keshavarz, M., & Ghoneim, A. (2021). Preparing Educators to Teach in a Digital Age. *International Review of Research in Open and Distance Learning*, 22(1), 221–242. <https://doi.org/10.19173/irrodl.v22i1.4910>
- Khoiriyah, A. J., Java, E., & Java, E. (2018). Problem-based learning : creative thinking skills , problem- solving skills , and learning outcome of seventh grade. *Indonesian Journal of Biology Education*, 4(2), 151–160.

- Khusaini, K., Suyudi, A., Winarto, W., & Sugiyanto, S. (2017). Optimalisasi Penggunaan WhatsApp dalam Perkuliahan Penilaian Pendidikan Fisika [*Optimizing the use of whatsapp in physics education assessment lectures*]. *Jurnal Riset Dan Kajian Pendidikan Fisika*, 4(1), 1. <https://doi.org/10.12928/jrkpf.v4i1.6462>
- Kibria, M. G., Nguyen, K., Villardi, G. P., Zhao, O., Ishizu, K., & Kojima, F. (2018). Big Data Analytics, Machine Learning, and Artificial Intelligence in Next-Generation Wireless Networks. *IEEE Access*, 6, 32328–32338. <https://doi.org/10.1109/ACCESS.2018.2837692>
- Kogan, M., Klein, S. E., Hannon, C. P., & Nolte, M. T. (2020). Orthopedics Education During the COVID-19 Pandemic. *Journal of the American Academy of Orthopaedic Surgeons*, 28(11), e456–e464. <https://doi.org/10.5435/JAAOS-D-20-00292>
- Komalasari, R. (2020). Manfaat teknologi informasi dan komunikasi di masa pandemi covid 19 [*The benefit of information and communication technology during the covid 19 pandemic*]. *Tematik*, 7(1), 38–50. <https://doi.org/10.38204/tematik.v7i1.369>
- Kurniawan, S. (2019). Tantangan Abad 21 bagi Madrasah di Indonesia [*The 21th century challenges for madrasahs in Indonesia*]. *Intizar*, 25(1), 55–68. <https://doi.org/10.19109/intizar.v25i1.3242>
- Kusuma, J. W., & Hamidah, H. (2020). Perbandingan hasil belajar matematika dengan penggunaan platform whatsapp group dan webinar zoom dalam pembelajaran jarak jauh pada masa pandemik covid 19 [*comparison of mathematics learning outcomes with the use of the whatsapp group platform and zoom webinars in distance learning during the covid 19 pandemic*]. *JIPMat*, 5(1). <https://doi.org/10.26877/jipmat.v5i1.5942>
- Liguori, E., & Winkler, C. (2020). From Offline to Online: Challenges and Opportunities for Entrepreneurship Education Following the COVID-19 Pandemic. *Entrepreneurship Education and Pedagogy*, 3(4), 346–351. <https://doi.org/10.1177/2515127420916738>
- López-Navarro, I., Moreno, A. I., Quintanilla, M. Á., & Rey-Rocha, J. (2015). Why do I publish research articles in English instead of my own language? Differences in Spanish researchers' motivations across scientific domains. *Scientometrics*, 103(3), 939–976. <https://doi.org/10.1007/s11192-015-1570-1>
- Mazarno, R. J., & Kendall, J. S. (2017). *The new taxonomy of educational objectives* (2nd ed.). Corwin Press: A SAGE Publications Company.
- Mirhosseini, S.-A. (2020). Collecting Data Through Observation. In *Doing Qualitative Research in Language Education* (Issue May, pp. 61–84). Springer International Publishing. https://doi.org/10.1007/978-3-030-56492-6_4
- Müceldili, B., Tatar, B., & Erdil, O. (2020). Can curious employees be more agile? The role of cognitive style and creative process engagement in agility performance. *Global Business and Organizational Excellence*, 39(6), 39–52. <https://doi.org/10.1002/joe.22056>
- Oktavia, T., Prabowo, H., Meyliana, & Supangkat, S. H. (2016). Social media as a new channel learning for higher education (A survey approach). *2016 International Conference on ICT for Smart Society, ICISS 2016, July*, 87–92. <https://doi.org/10.1109/ICTSS.2016.7792854>
- One, T., Social, E., Methods, M., Two, T., Your, P., & Collection, D. (2018). *Collecting Social Media Data. January*.
- Noviana, N. E., & Solichin, M. R. (2021) Pengaruh penggunaan media pembelajaran online (whatsapp dan zoom) terhadap prestasi belajar siswa pada masa pandemi covid-19 [*The effect of using online learning media (whatsapp and zoom) on student learning achievement during the covid-19 pandemic*]. *Jurnal Pendidikan Ekonomi (JUPE)*, 9(2), 60–64. <https://doi.org/10.26740/JUPE.V9N2.P60-64>
- Pfefferbaum, B., & North, C. S. (2020). Mental health and the Covid-19 pandemic. *New England Journal of Medicine*, 383(6), 510–512.
- Pratama, R. R., & Pramesti, R. A. (2018). The importance of stim-hots and critical thinking skills in disruption era. *Social, Humanities, and Educational Studies (SHES): Conference Series*, 1(1). <https://doi.org/10.20961/shes.v1i1.24304>
- Priyono, M., Sulistyanto, T., Nugraha, D. A., Sari, N., Karima, N., & Asrori, W. (2015). Implementasi IoT (Internet of Things) dalam pembelajaran di Universitas Kanjuruhan Malang [*Implementation of IoT (internet of things) in learning at Kanjuruhan university Malang*]. *SMARTICS Journal*, 1(1), 20–23.
- Rahayu, R., Kartono, K., Dwijanto, D., & Agoestanto, A. (2022). The Effectiveness of Accelerated Problem Based Learning With Dynamic Assessment in Achieving Problem-Solving Skills. *International Conference on Science, Education and Technology*, 178–185.
- Riska, R., Marjanah, & Jayanthi, S. (2022). The Effect of Problem Based Learning (PBL) Model on Critical Thinking Ability and student learning outcomes on Ecosystem In SMA Negeri 5 Langsa. *Biosainsdik*, 2(2 November), 260–267.
- Rotherham, A. J., & Willingham, D. T. (2010). 21st-century" skills. *American Educator*, 17(1), 17–20.
- Sagiroglu, S., & Sinanc, D. (2013). Big data: A review. *2013 International Conference on Collaboration Technologies and Systems (CTS)*, 42–47.
- Seleznov, S. (2018). Lesson study: an exploration of its translation beyond Japan. *International Journal for Lesson and Learning Studies*, 7(3), 217–229.

- Sari, A., Ertikanto, C., & Suana, W. (2015). Pengembangan LKS Memanfaatkan Laboratorium Virtual Pada Materi Optik Fisis Dengan Pendekatan Saintifik/[*LKS development utilizes virtual laboratories on physical optical materials with a scientific approach*]. *Jurnal Pembelajaran Fisika Universitas Lampung*, 3(2), 118605.
- Sasmita, R. S. (2020). Pemanfaatan internet sebagai sumber belajar [*Utilization of the internet as a learning resource*]. *Jurnal Pendidikan dan Konseling (JPDK)*, 2(1), 99-103.
- Sedana, I. M. (2019). Guru Dalam Peningkatan Profesionalisme, Agen Perubahan Dan Revolusi Industri 4.0.[*Teachers in the improvement of professionalism, agents of change and the industrial revolution 4.0.*] *Jurnal Penjaminan Mutu*, 5(2), 179. <https://doi.org/10.25078/jpm.v5i2.891>
- Setiawan, W., Suud, F. M., Chaer, M. T., & Rahmatullah, A. S. (2018). Pendidikan Kebahagiaan dalam Revolusi Industri 4 [*Happiness education in the industrial revolution 4.*]. *AL-MURABBI: Jurnal Studi Kependidikan Dan Keislaman*, 5(1), 101–120. <https://doi.org/10.53627/jam.v5i1.3403>
- Siahaan, J. (2019). Disruption proses belajar pendidikan jasmani dan olahraga di Sekolah[*Disruption of the learning process of physical education and sports at school*]. *Prosiding Seminar Nasional Fakultas Ilmu Kesehatan Dan Sains*, 1(1), 45–58.
- Storme, M., Suleyman, O., Gotlib, M., & Lubart, T. (2020). Who is agile? An investigation of the psychological antecedents of workforce agility. *Global Business and Organizational Excellence*, 39(6), 28–38. <https://doi.org/10.1002/joe.22055>
- Suadi, S. (2021). Students' perceptions of the use of zoom and whatsapp in ELT amidst covid19 pandemic. *SALEE: Study of Applied Linguistics and English Education*, 2(1), 51–64. <https://doi.org/10.35961/salee.v2i01.212>
- Sugiarto, A. (2020). Dampak positif pembelajaran online dalam sistem pendidikan keperawatan pasca pandemi covid 19 [*The positive impact of online learning in the nursing education system after the COVID-19 pandemic*]. *Jurnal Perawat Indonesia*, 4(3), 432. <https://doi.org/10.32584/jpi.v4i3.555>
- Suseno, N., Harjati, P., & Dedy, H. A. (2019). School Laboratory Management Information System. *Journal of Physics: Conference Series*, 1361(1), 12068. <https://doi.org/10.1088/1742-6596/1361/1/012068>
- Suseno, N., Riswanto, R., Aththibby, A. R., Alarifin, D. H., & Salim, M. B. (2021). Model Pembelajaran Perpaduan Sistem Daring dan Praktikum untuk Meningkatkan Kemampuan Kognitif dan Psikomotor[*Learning model combines online and practicum systems to improve cognitive and psychomotor abilities*]. *Jurnal Pendidikan Fisika*, 9(1), 42. <https://doi.org/10.24127/jpf.v9i1.3169>
- Sutrisna, D. (2018). Meningkatkan kemampuan literasi mahasiswa menggunakan google classroom[*Improving students' literacy skills using google classroom*]. *FON : Jurnal Pendidikan Bahasa Dan Sastra Indonesia*, 13(2). <https://doi.org/10.25134/fjpbsi.v13i2.1544>
- Tess, P. A. (2013). The role of social media in higher education classes (real and virtual) – A literature review. *Computers in Human Behavior*, 29(5), A60–A68. <https://doi.org/10.1016/j.chb.2012.12.032>
- Toquero, C. M. (2020). Challenges and Opportunities for Higher Education amid the COVID-19 Pandemic: The Philippine Context. *Pedagogical Research*, 5(4), em0063. <https://doi.org/10.29333/pr/7947>
- Turmudi, D. (2020). The Experience and capability of the teacher-educator authors (TEAs) of Indonesia in writing articles for publication in the light of the Bloom's digital taxonomy. In *Dissertation: Vol. October*.
- Turmudi, D., & Ratini. (2022). Understanding the Indonesian EFL Zen Students' Synchronous Engagement in a Research Course. *Pegem Journal of Education and Instruction*, 13(1), 20–30. <https://doi.org/10.47750/pegegog.13.01.03>
- Ulrich, D., & Yeung, A. (2019a). Agility: the new response to dynamic change. *Strategic HR Review*, 18(4), 161–167. <https://doi.org/10.1108/shr-04-2019-0032>
- Ulrich, D., & Yeung, A. (2019b). Agility: the new response to dynamic change. *Strategic HR Review*, 18(4), 161–167. <https://doi.org/10.1108/shr-04-2019-0032>
- Veselá, K., Havelka, J., & Hajicova, E. (2004). Annotators' Agreement: The Case of Topic-Focus Articulation. *Proceedings of the Fourth International Conference on Language Resources and Evaluation (LREC'04)*.
- Watkins, J. (2020). *Preventing a covid-19 pandemic*. British Medical Journal Publishing Group.
- Widiantari, M. M. (2020). The New Normal: Internalisasi Kebiasaan Baru Pasca Pandemi Covid-19[*The new normal: internalizing new habits after the covid-19 pandemic*]. *Diskursus Covid-19*.
- Wijayanto, A., Or, S., Kom, S., Lani, A. D. A., Ulfa, D. L., Taufik, M. S., & Akhyak, H. (2021). Penerapan Adaptasi Kebiasaan Baru pada Era Pandemi Virus Corona 19 di Berbagai Sektor Pendidikan[*Implementation of new habit adaptation in the era of the corona virus pandemic 19 in various education sectors*]. *OSF Preprints*. January, 24.
- Winaryati, E. (2018). Penilaian Kompetensi Siswa Abad 21[*The 21st century student competency assessment*]. *Seminar Nasional Edusainstek FMIPA UNISMUS 2018*, 6(1), 6–19.

Outcome Based Education (OBE) Based Vocational Education Model in the Era of Artificial Intelligence (AI)

Constantinus Rudy Prihantoro¹

¹ Technology and Vocational Education Study Program (Master Program), Universitas Negeri Jakarta - Indonesia

Correspondence: Constantinus Rudy Prihantoro, Technology and Vocational Education Study Program (Master Program), Universitas Negeri Jakarta – Indonesia. E-mail: crudy@unj.ac.id

Abstract

This study is to analyze AI indicators in terms of workforce needs relevant to the industry in the application of the OBE-based vocational education. Two models of the vocational education model were developed, namely the creative vocational education model (CVEM) and the performance vocational education model (PVEM). Model testing uses SEM to confirm theoretical models depicted in path diagrams with empirical data to see correlations between constructs built into path diagrams. The research population was two groups, namely industrial practitioners, and vocational teachers. Researchers found significant positive effects of AI capabilities on CVEM, PVEM, and significant influence of CVEM on PVEM. The vocational education organizational model influenced by OBE accounts for variances related to creativity, and variance in performance. The vocational education organization model provides evidence of a positive relationship between OBE-based AI capabilities with CVEM and PVEM, as well as the very significant positive influence of CVEM on PVEM.

Keywords: Artificial Intelligence (AI), Outcome-Based Education (OBE), Creative Vocational Education Model (CVEM), Performance Vocational Education Model (PVEM)

1. Introduction

1.1 Introduce the Problem

Artificial intelligence (AI) has a major impact on education in supporting school administration (such as class scheduling, staff scheduling, facilities management, finance, cybersecurity, safety, and security). The use of AI to support learning is widely practiced by students and teachers (Wayne Holmes, 2019).

One of the AI applications developed in education is intelligence tutoring systems (ITS). According to Alkhatlan, A. and Kalita, J. (2019) called ITS is a computer program that uses AI techniques to provide tutorials intelligently.

AI helps to simulate step by step learning materials according to subject topics in a structured and well-defined manner, such as mathematics or physics subjects (Wayne Holmes, 2019).

Educators who are lagging in the use of digital technology and AI, will certainly face problems in preparing their graduates to become the workforce needed in the workforce and industry. OBE (Outcome Based Education) is very important to anticipate the needs of the workforce in Industry 4.0. The role of teachers will look different, but it will always be important its role as a provider of the skilled workforce that the industry needs to ensure it remains globally competitive (News, 2020).

Pastore, F. (2018) states that the industrial revolution 4.0, which is still ongoing, is a process of various aspects that involves several innovation processes in the fields of robotics, artificial intelligence, renewable energy sources, digitization of production and consumption patterns and so on. The consequences of the labor market become important, since most of the existing jobs will be destroyed, robot replaces labor, not only routine work, but also work that requires creativity.

1.2 Explore Importance of the Problem

By 2030, the industrial revolution is likely to demand high-skilled and highly specialized jobs. How will this new skill be acquired? Vocational Education and Training (VET) is an option available. Therefore, VET must include research-based knowledge and the participation of practitioners (worker users). In this way, the academic shift away from VET appears to be two-sided, one side is the knowledge-based process, and the other side is that all types of work require more skills and are constantly updated (Markowitsch & Hefler, 2019).

Jörg Markowitsch (2019) also argues that education is a solution to prepare humans for future changes. Vocational education must step forward to carry out reforms that are appropriate for the future (News, 2020). What is the future reform of vocational education? Is OBE relevant to the vocational education model influenced by the industrial era 4.0? Does AI make a significant contribution to the learning process of OBE-oriented vocational education?

This study analyzes AI indicators in terms of relevant workforce needs in the industry and designs an OBE-based vocational education model.

1.3 Describe Relevant Scholarship

1.3.1 Outcomes Based Education (OBE)

OBE is a process that involves the practice of assessment and evaluation in education to reflect learning achievement and demonstrate mastery in the program area. OBE is oriented towards predetermined tangible results that include knowledge, abilities, and behaviors. OBE involves the restructuring of curriculum, assessment and practice that reflect the learning achievement and mastery level of that accumulated educational process. OBE's focus is on student learning by (1) Using learning outcomes that are known, understood, or carried out by students; (2) Provide learning activities to achieve learning outcomes; and (3) Assess learning outcomes that meet the criteria.

Macayan (2017) in the Educational Measurement and Evaluation Review revealed that the optimal benefits of OBE can be realized if schools seriously implement it as a philosophical foundation of outcomes-based education. Rohman (2018) in his paper sorted OBE in four PDCA-based implementation criteria, namely Criterion 1: Graduate Competency Orientation (Plan), Criterion 2: Implementation of Learning (Do) which includes curriculum, departments/sections, student and academic atmosphere, facilities, and institutional responsibilities. Criterion 3: Assessment of Expected Learning Outcomes (Check) and Criterion 4: Continuous Improvement (Action). Based on these criteria, it was developed into an indicator of OBE achievement in the implementation of education (OBE instrument).

In Prihantoro's research (Prihantoro, 2020) stated that the implementation of OBE in vocational high schools is in accordance with the needs of the workforce in the industrial era 4.0, with a very high category of 94.8%. The trend of utilizing AI is becoming an integral part of the digitization and automation process implemented with internet of think (IoT) facilities.

1.3.2 Artificial Intelligence (AI)

AI is one aspect of modern life that most of us have consciousness with, yet we realize that we have very little knowledge. In fact, for many, AI is synonymous with humanoid robots which are often illustrated with images of robots or digital brains. Meanwhile, robotics is a form of AI that can move and interact physically with the world that has been widely applied in a variety of ways and different contexts.

Artificial intelligence is sometimes considered unhelpful, some researchers prefer enhanced intelligence, which retains the human brain as a source of intelligence, and positions computers and their programs as advanced tools that humans can use to enhance or augment intellectual abilities. In this approach, computers are used to do what humans find more difficult, such as finding patterns in large amounts of data. The debate over augmented intelligence and artificial intelligence is bound to run and with artificial intelligence wins at least on popular use even if augmented intelligence is more accurate or useful.

1.3.3 AI in Education

AI in education includes everything from instructional systems and AI-driven dialogues, it also includes students interacting one-to-one with computers, students using mobile phones outside of the classroom, and many others. The field of AI in education is derivative and innovative. AI generates problems and research questions how can a student be helped to learn? Which teaching interaction styles are effective, and when should they be used? What misconceptions do learners have about AI? (Woolf, 2008).

While AI as a tool in education needs to exemplify certain learning theories (such as "interactionalism" (Gagné, 1985 (4th Revised ed.)). AI in education effectively involves two main complementary parts: developing AI-based tools to support learning and using these tools to help understand learning. In fact, the applications, and approaches of AI in education that deal with the identified old and new problems are being researched, so what AI looks like in education is still undiscovered.

Adopting an alternative approach to AI in education in several fields, it is relatively easy to identify because of the AI devices that are already available. However, before doing so, educators need to understand the function of AI and how AI works in an educational context. Challenge, pragmatic and ethical, from the perspective of AI researchers and developers in education, educators, students, funders, and policymakers, this is the focus of the research to be conducted.

1.3.4 The development of AI in Indonesia.

AI is intelligence added to systems to correctly interpret external data and manage that data and use processed results for specific purposes (Goralski & KeongTan, 2020; Sousa, et al., 2019). Every invention in the form of electronics, technology, and many other disciplines has been influenced by AI. The industry has changed to more mechanical, more sophisticated machinery than ever before. AI is not just about robots, but also about understanding the nature of intelligent thinking and acting using computers as experimental devices. Several studies have shown that Europe and the US are pioneers in the application of AI (Shank & Gott, 2019; Sousa, et al., 2019). Previous research has stated that AI is a system designed to interact with everyone in the world with special abilities and intelligent habits like humans (Goralski & KeongTan, 2020; Shank & Gott, 2019; Sousa, et al., 2019).

In Indonesia, artificial intelligence is widely used in various sectors, namely industry, education, health, services and production. In addition to the manufacturing industry that has applied artificial intelligence to production lines, there are also many schools that have utilized learning outcome assessment systems using artificial intelligence (Nasution, 2012). Government agencies also use artificial intelligence in carrying out their functions as regulators of public services. The positive impact of implementing artificial intelligence is to reduce waiting time and improve the quality of process or service results, while also facing quite a lot of challenges because it reduces employment, in addition to requiring a high investment (Nasution, 2012).

AI in Indonesia is used by, among others, multinational companies, telecommunications companies, startups and the Government. In its development, startups have a strategic role to accelerate the adoption of AI technology in Indonesia. The growth of AI startups will also attract potential talents both domestically and internationally which drives the dynamics of the AI industry ecosystem (Yogaswara, 2019).

1.3.5 Conceptualizing AI

The study by Ransbotham, et al. (2018) found that lack of technological competence is one of the biggest barriers to the application of AI. Their findings highlight the fact that nearly one in five organizations do not understand AI-related data requirements and the technological infrastructure for storing data. AI technology will develop very quickly, just as organizational resources need to be developed to adapt to AI technology. These organizational resources are what is needed to build AI capabilities for enterprises.

There are eight resources that constitute AI capabilities grouped into three categories based on the Grant framework (Grant, 1991). **(A) The primary source** consists of (1) **data**, considered by managers to be one of the possible keys in harnessing the potential of AI (Ransbotham et al. 2018). In recent years a lot has been written about the opportunity to take advantage of big data (Mikalef et al., 2018). (2) **Technology**, a recent report published by McKinsey highlights that the lack of technological infrastructure is one of the main barriers to adopting AI in organizations (Chui, M & Malhotra, S, 2018). Since AI technology requires infrastructure investment at multiple levels, this is proving to be a major obstacle for many organizations, especially those with fewer resources (Y. Dwivedi, et al. 2019). (3) **Resources**, organizations must be able to provide time and financial resources that allow delivering the expected results (Ransbotham et al., 2018). Schryen (2013) in a paper on IS refers to time and financial investments as resources necessary to realize AI programs. Whereas **(B) Human Resources** consists of (4) **skills**, previous research on digital capabilities has identified skills as an important pillar of human resources, and (5) **the ability to understand**, research that notes that one of the most important barriers to realizing AI programs is the lack of leadership to support AI (Fountaine et al. 2019), highlights that managers do not understand AI technology. Leadership for AI initiatives ranks as one of the key barriers to adopting AI (Ransbotham et al. 2018). **(C) Iklim Organizations** essential to building AI, i.e. (6) **internal consolidation** is defined as "a state of high shared values, commitment to achieving common goals, and collaborative behavior" (Souder, 1977). Increasing internal consolidation will make organizations more agile and adaptable in implementing AI applications and understanding employees between different parts will reduce time in deploying AI applications or adapting to them (Appian, 2019), (7) **changeability**, AI applications introduce significant changes to organizations about new activities, tasks, and processes. The ability to plan and manage change in organizations is a means to realize the value of AI investments (Ransbotham et al. 2018), and (8) **risky opportunities**, risky opportunity taking and a proactive attitude, are commonly associated with innovation and higher markets (Hanelt et al., 2021). AI is one of the most exciting, value-added, and competitive parts of opportunity (Ransbotham et al., 2018). Fountaine et al. (Fountaine et al., 2019) argue that organizations should be strategically oriented, not risk-averse, agile, and adaptable.

The literature on the capabilities of AI states that for human tasks that perform repetitive processes, it does not require creativity, are not complex, it can be replaced with automated machines. Humans can be diverted to tasks that require creativity and their innovation capacity (Ågerfalk, 2020). AI technology drives human abilities, by improving cognitive, skills and interacting with others will improve the ability to carry out more complex tasks to achieve organizational goals (Wilson & Daugherty, 2018).

1.4 State Hypotheses and Their Correspondence to Research Design

Recent literature in the capability's domain of IT-enabled organizations states that the use of different IT can lead to certain generational capabilities (Liu et al., 2020). Basically, the use of IT often has an indirect effect on key performance indicators, by enabling specific organizational capabilities. Following the same logic, researchers argue that AI capabilities can have an indirect effect on the performance of vocational education organizations, through their effect on the creativity of vocational education organizations. Some performance indicators depend on creative solutions that emerge in vocational education organizations.

Based on the above arguments, it can make the following hypothesis:

H1: AI capabilities will have a positive effect on CVEM.

H2: AI capabilities will have a positive effect on PVEM.

Y. Liu et al. (2020), suggest that AI capabilities can help generate knowledge within organizational boundaries, which can then be leveraged to improve performance. Thus, the hypothesis proposed is as follows:

H3: CVEM will have a positive effect on PVEM.

2. Method

This research is descriptive quantitative research of causality. The purpose of this descriptive research is to draw the facts, properties, and relationships systematically, factually, and accurately between the phenomena under study. Research of causality in addition to measuring the relationship between two or more variables, also shows the direction of the relationship between free variables and bound variables (making cause and effect problems).

2.1 Identify Subsections

Variable research is everything that is set by the researcher to be researched so that information is obtained which is then drawn conclusions. There are three exogenous variables, namely the main source, human resources and organizational climate, four endogenous variables, namely graduate competency orientation, learning implementation, assessment of expected learning outcomes, and continuous improvement.

2.2 Participant (Subject) Characteristics

The target population is two groups, namely practitioners and vocational teachers in DKI Jakarta. Practitioner respondents are practitioners in the industry with the formation of manager, supervisor/technician/operator, and other positions, which are 15 people. There were 32 respondents of Vocational High School teachers in DKI Jakarta who taught engineering.

2.3 Sampling Procedures

The sample is a portion of the population studied. The representation of the population by the sample in the study is an important condition for generalization. In connection with the use of Structural Equation Model (SEM), that if the sample size is too large, the model becomes very sensitive so that it is difficult to get a good goodness of fit, then with PLS SEM it is enough to use a small sample size. Research conducted by Chin and Newsted (1999) proved that using only 20 data they can use SEM correctly.

2.3.1 Sample Size, Power, and Precision

In this study, because the population was relatively small, the research used the total sampling method. With this method of taking, it is hoped that the results obtained tend to be closer to the actual value and are expected to minimize the occurrence of deviations from the population value.

2.3.2 Measures and Covariates

Model testing in this study used SEM analysis technique, which is a statistical technique that allows testing a series of relationships simultaneously.

Modeling research through SEM allows a researcher to answer research questions that are regressive or dimensional, identify the dimensions of a concept or construct, and measure the influence of the relationship of factors that can be identified as dimensions.

Model development uses SEM to confirm theoretical models with empirical data. A theoretical model is depicted in a path diagram to see the causality relationship being tested. The correlation between constructs is built into a path diagram such as Figure 1.

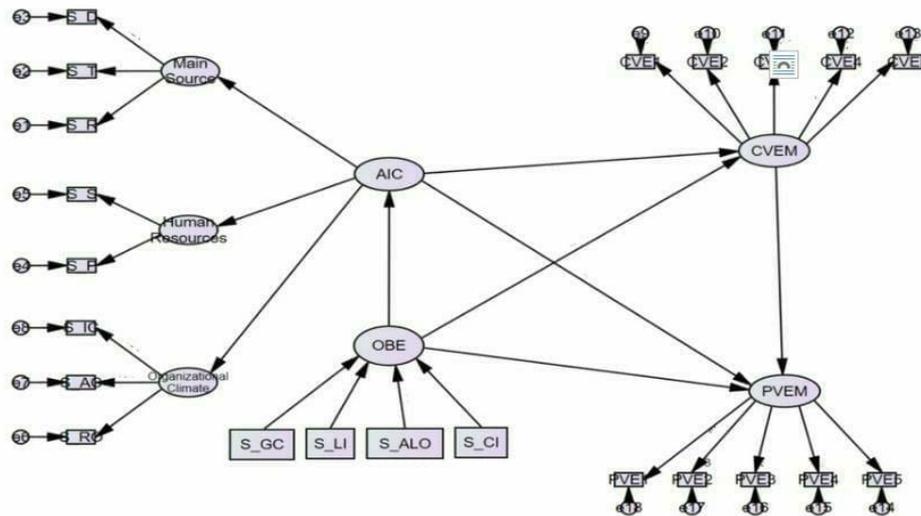


Figure 1: Path Structure Diagram

2.3.3 Research Design

In accordance with the purpose and benefits of This study, the design of this study uses a quantitative type that aims to analyze the causality relationship between one variable and another through hypothesis testing. Overall flow of the operational framework of the analysis carried out in the study, shown in Figure 2.

Through previous arguments about the role of AI in education, the role of technology makes educational organizations more creative and improves their performance. The development of a vocational education model in this research through a conceptual research model presented in Figure 2.

In fact, there are several documented cases in various industries where the AI applications used have resulted in an increase in organizational creativity (Amabile, 2020). AI can also automate many manual processes that require considerable time and human capital. If human resources are potentially involved in the creative process, then educational organizations can innovate using AI technology for organizational purposes, thus allowing managers to gain insights into understanding data and uncovering patterns and relationships (Raisch & Krakowski, 2021; Paschen et al., 2020). AI has a direct effect on different performance indicators, which can reduce costs, increase time to respond, cut production time and costs, and improve customer service to achieve an organization's vision and goals.

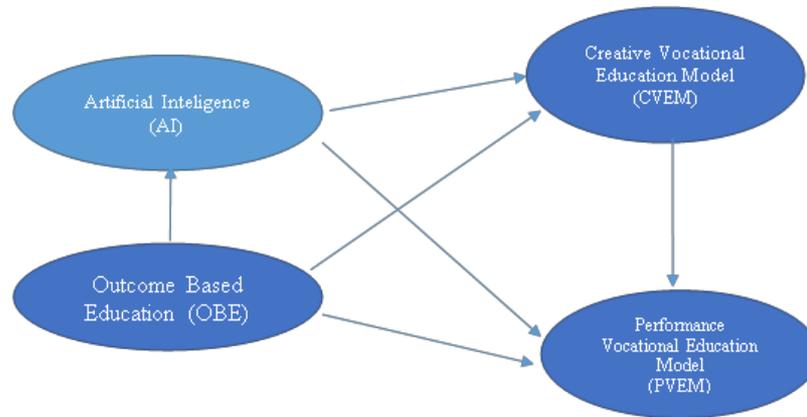


Figure 2: Model Preparation Research Paradigm

Preliminary studies have documented that a structured approach to applying AI can result in improved performance for organizations, even AI automation methods have the potential to result in improved performance for vocational education organizations. Indicators that affect the creativity and performance of vocational education organizations are by measuring the performance of vocational education.

2.3.4 Experimental Manipulations or Interventions

2.3.4.1 Measurement models

As part of the validity assessment, researchers introduced two performance models to capture the effects that AI capabilities have on the level of vocational education organizations. Therefore, researcher created two organizational models, namely the CVEM and the PVEM which are influenced by OBE (Figure 2). The creative vocational education model is seen based on the steps of OBE implementation, while the performance vocational education model is operationalized based on the results obtained in the implementation of OBE. Both of vocational education models were validated after being linked to the use of AI technology in the implementation of OBE-based education. Researchers examine reliability and validity at the construct level and examine inter-correlations between latent variables (Table 1).

2.3.4.2 Structural models

After establishing AI capabilities, researchers proceed to examine the validity of the construction of AI capabilities and their relationship to CVEM and PVEM. Researchers define the CVEM as a model that is able to generate new and constructive ideas in OBE-based vocational education. AI also has an impact on organizational activities, therefore, researchers consider the PVEM appropriate to be tested for the influence of AI capabilities, to test two hypothetical relationships, researchers use SEM analysis, in which variance is explained endogenous variable (R^2). The researcher verified the structural model by examining the value of the coefficient of determination (R^2) (Figure 3).

Researchers found significant positive effects of AI capabilities on the CVEM ($R^2=0.573$), the PVEM ($R^2=0.50$), and the significant influence of CVEM on the PVEM ($R^2=0.294$). The vocational education model influenced by OBE accounts for variances related to creativity ($R^2 = 0.30$), and variance to performance ($R^2 = 0.561$). All values are greater than the thresholds of 0.15 and 0.35, so researchers can conclude that vocational education models have a medium to high effect size.

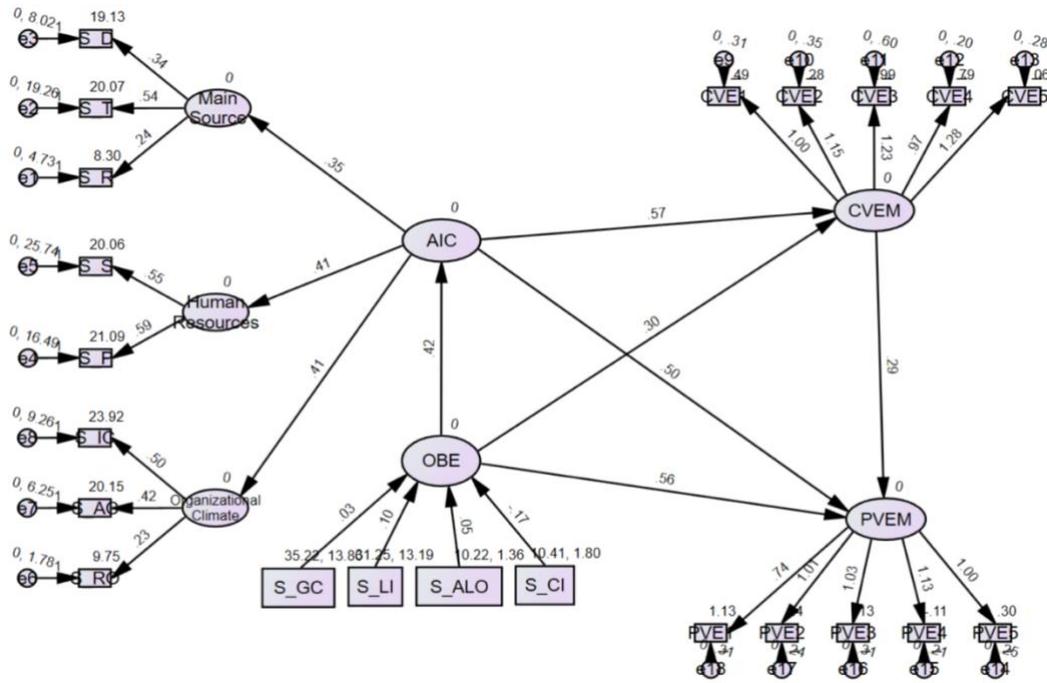


Figure 3: Structural model of SEM analysis

Table 1: Direct Effects

	OBE	AIC	S_CVEM	S_PVEM
OBE	0	0	0	0
AC	0,421	0	0	0
S_CVEM	-0,133	0,573	0	0
S_PVEM	0,561	-1,158	0,294	0

3. Results

These results show that the interpretation disruptor i.e., OBE was not a problem in this study. Some recent studies including the research of Wu et al. (2015) and Gupta and George (2016) have used this method to validate formative constructs in their studies.

The two models described earlier, namely CVEM and PVEM are used as the base model. Therefore, the researchers proceeded to examine two things, namely (1) comparing the correlations of the three measures of the AI capability construct and the five measures of organizational creativity on the CVEM, and (2) comparing the correlations of the three AI measures with the five measures of organizational performance on the PVEM. In contrast to the correlation between measures of AI capabilities, (i.e.: primary sources, human resources, and organizational climate) and measures of CVEM and PVEM across the base model, researchers found scores close to zero as depicted in Table 2 and Table 3. Thus, the problem of weakened external consistency can be overlooked in the study.

3.1 Statistics and Data Analysis

The results of the vocational education models provide strong evidence, a positive relationship between OBE-based AI capabilities and the creativity and performance of vocational education models, as well as a very significant positive influence of the CVEM on the PVEM.

There are two AI capability paths that researchers propose, namely CVEM and PVEM, the model is as depicted in Figure 4 and Figure 5. Thus, the creativity model of the CVEM and the PVEM as dependent variables.

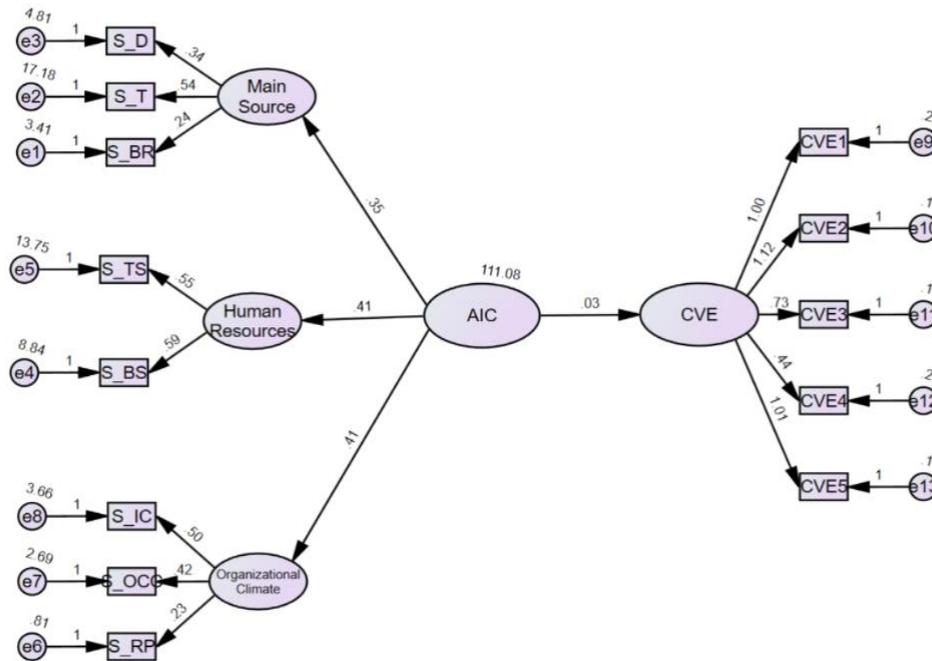


Figure 4: Creative Vocational Education Model Structure

Table 2: Factor Score Weights

	CVE5	CVE4	CVE3	CVE2	CVE1	S_IC	S_OCC	S_RP	S_TS	S_BS	S_D	S_T	S_BR
Ar_Int	2,67	0,702	1,602	3,938	1,634	0,643	0,728	1,316	0,186	0,313	0,284	0,124	0,273
CVE	0,084	0,022	0,05	0,123	0,051	0,02	0,023	0,041	0,006	0,01	0,009	0,004	0,009
Org_Climate	1,087	0,286	0,652	1,603	0,665	0,262	0,296	0,536	0,076	0,127	0,115	0,05	0,111
Human_Resources	1,095	0,288	0,657	1,615	0,67	0,264	0,298	0,54	0,076	0,128	0,116	0,051	0,112
MainSource	0,924	0,243	0,554	1,363	0,565	0,222	0,252	0,455	0,064	0,108	0,098	0,043	0,094

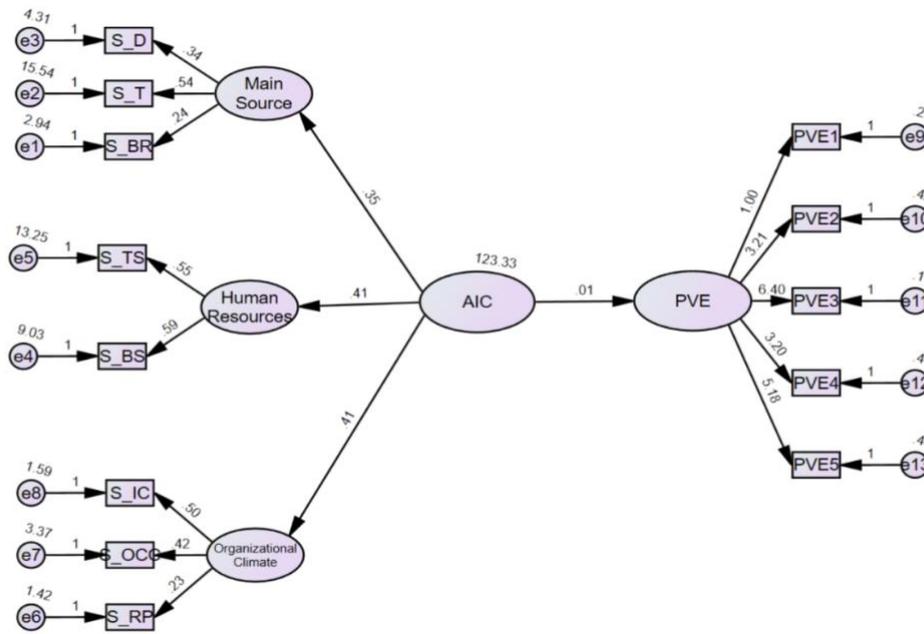


Figure 5: Performance Vocational Education Model Structure

Table 3: Factor Score Weights

	PVE5	PVE4	PVE3	PVE2	PVE1	S_IC	S_OCC	S_RP	S_TS	S_BS	S_D	S_T	S_BR
Ar_Int	0,976	0,626	3,179	0,669	0,303	1,484	0,583	0,757	0,194	0,307	0,318	0,137	0,318
PVE	0,007	0,005	0,024	0,005	0,002	0,011	0,004	0,006	0,001	0,002	0,002	0,001	0,002
Org_Climate	0,397	0,255	1,294	0,272	0,123	0,604	0,237	0,308	0,079	0,125	0,129	0,056	0,129
Human_Resources	0,4	0,257	1,303	0,274	0,124	0,608	0,239	0,31	0,08	0,126	0,13	0,056	0,13
MainSource	0,338	0,217	1,1	0,232	0,105	0,513	0,202	0,262	0,067	0,106	0,11	0,047	0,11

4. Discussion

This research was motivated by a surge in interest in the AI phenomenon by practitioners (industry) and academics (educators). Literature from practitioners has been widely published, but in an educational environment there has not been much research focused on AI. As a result, there has been a lot of discussion about AI, without clearly defining what AI means in the context of Information Systems (IS), and there is no illustrated impact of AI on the educational environment. This research takes insights into the use of AI in educational organizations, especially vocational education that implements OBE-based learning. Researcher develops and validates the conceptualization of AI capabilities in vocational education organizations that apply AI and OBE as modeling indicators of vocational education organizations. Finally, this study developed an instrument to measure AI capabilities in vocational education organizations that implement OBE, which empirically once validated, shows that by developing AI capabilities, OBE-based vocational education organizational models can realize excellence in organizational model creative and performance.

At the end of this discussion, the researcher provides suggestions for follow-up of the shortcomings of this research for future research, as follows: First, that vocational education industries and organizations may need resources to be able to invest in AI-enabled tool infrastructure, but vocational education industries and organizations do not use the same AI tools, so there may be other dimensions that need to be added to future research. Second, when researchers identify and explain AI's capabilities about the primary source of human power, and organizational

climate, the researcher does not include elements of the initial process of how AI is initiated by the organization and how the result will be. It is quite possible that organizations differ in policies in deciding to apply AI and experience in the process of facing challenges and obstacles. Influencing the choice of applying AI to achieve organizational goals and internal events in the organization needs to be further researched. Third, the researcher's research used practitioner respondents who worked in industries in the capital of Indonesia. It is possible that vocational education organizations from different regions, some are slow to adopt AI technology in the industry and vocational education organizations, and there are also vocational education organizations that are not OBE-based, will certainly do it in different ways. Surveying industries and vocational education organizations in different regions and at the stage of implementing AI and OBE can uncover new patterns that are effective in utilizing AI for the purposes of vocational education organizations in producing graduates needed by the world of work in the industrial era 4.0.

Acknowledgments

I would like to thank you funding for this research. This research was supported by Lecturer Research Grant provided by the Faculty of Engineering, Jakarta State University. (025a/5. FT/PP/V/2020).

References

- Ågerfalk, P. J. (2020, Feb 17). Artificial intelligence as digital agency. *European Journal of Information Systems*, 29(1), 1-8. doi:<https://doi.org/10.1080/0960085X.2020.1721947>
- Amabile, T. M. (2020, Oct 29). Creativity, Artificial Intelligence, and a World of Surprises. *Academy of Management Discoveries*, 6(3), -. doi:<https://doi.org/10.5465/amd.2019.0075>
- Appian. (2019). *Why Humans, AI Systems, and Robots Need to Get Along at Work – And Why it's So Hard to Do Automate More. Code Less. SURVEY CONDUCTED BY IDG.* <https://www.appian.com/wp-content/uploads/2019/03/idg-future-of-work>. U.K., France, Germany, and Spain: SURVEY CONDUCTED BY IDG. Retrieved from <https://www.appian.com/wp-content/uploads/2019/03/idg-future-of-work>
- Bharadwaj, A. S. (2000, Mar). A Resource-Based Perspective on Information Technology Capability and Firm Performance: An Empirical Investigation. *MIS Quarterly*, 24(1), 169-196 (28 pages). doi:<https://doi.org/10.2307/3250983>
- Chin, W. W. (1999). Structural equation modeling analysis with small samples using partial least squares. In W. W. Chin, *Statistical strategies for small sample research* (pp. 307-341). Thousand Oaks: CA: Sage Publications. Retrieved from [https://www.scirp.org/\(S\(351jmbntvnsjtl1aadkposzje\)\)/reference/ReferencesPapers.aspx?ReferenceID=448254](https://www.scirp.org/(S(351jmbntvnsjtl1aadkposzje))/reference/ReferencesPapers.aspx?ReferenceID=448254)
- Chui, Michael & Malhotra, Sankalp. (2018). *AI adoption advances, but foundational barriers remain*. McKinsey Global Institute. San Francisco: McKinsey & Company. Retrieved from Mckinsey and Company. <https://www.mckinsey.com/featured-insights/artificial-intelligence/ai-adoption-advances-but-foundational-barriers-remain>
- Dwivedi, Y. K., Hughes, L., Ismagilova, E., Aarts, G., Coombs, C., Crick, T., . . . authors, m. (2019). Artificial Intelligence (AI): Multidisciplinary perspectives on emerging challenges, opportunities, and agenda for research, practice and policy. *International Journal of Information Management*, 1-47. doi:<https://doi.org/10.1016/j.ijinfomgt.2019.08.002>
- Erik Brynjolfsson, D. R. (2017, November). ARTIFICIAL INTELLIGENCE AND THE MODERN PRODUCTIVITY PARADOX: A CLASH OF EXPECTATIONS AND STATISTICS. *NBER WORKING PAPER SERIES 24001*. Retrieved from <http://www.nber.org/papers/w24001>
- Fountaine, T., McCarthy, B., & Saleh, T. (2019, July-August). AI And Machine Learning: Building the AI-Powered Organization. Technology isn't the biggest challenge. Culture is. pp. 62-73. Retrieved from <https://hbr.org/2019/07/building-the-ai-powered-organization>
- Gagné, R. M. (1985 (4th Revised ed.)). *Conditions of Learning and Theory of Instruction*. Wadsworth Publishing Co. Inc.
- Goralski, M. A., & KeongTan, T. (2020, March). Artificial intelligence and sustainable development. *The International Journal of Management Education*, 18(1). doi:<https://doi.org/10.1016/j.ijme.2019.100330>
- Grant, R. M. (1991). The Resource-Based Theory of Competitive Advantage: Implications for Strategy Formulation. *California Management Review*, 33(3), 114-135. doi:<https://doi.org/10.2307/41166664>
- Gupta, M., & George, J. F. (2016). Toward the development of a big data analytics capability. *Information & Management*, 53(8), 1049-1064. doi:<https://doi.org/10.1016/j.im.2016.07.004>

- Hanelt, A., Firk, S., Hildebrandt, B., & Kolbe, L. M. (2021). Digital M&A, digital innovation, and firm performance: an empirical investigation. *European Journal of Information Systems*, 30(1), 3-26. doi:https://doi.org/10.1080/0960085X.2020.1747365
- Kalita, A. A. (2019, March). Intelligent Tutoring Systems: A Comprehensive Historical Survey with Recent Developments. *International Journal of Computer Applications*, 181(43), 1-20. doi:10.5120/ijca2019918451
- Liu, Y., Lee, Y., & Andrew, N. (2020, June). How IT wisdom affects firm performance: An empirical investigation of 15-year US panel data. *Decision Support Systems*, 133, 113300. doi:https://doi.org/10.1016/j.dss.2020.113300
- Macayan, J. (2017, July). Implementing Outcome-Based Education (OBE) Framework: Implications for Assessment of Students' Performance. *Educational Measurement and Evaluation Review*, 8(1), 1-10. Retrieved from https://8f776a7a-7f68-4ea2-b4aa-8023d1ecc665.filesusr.com/ugd/0adbde_a17a1676385b4bd0a0db3711c556f2e4.pdf
- MacKenzie, S. B., Podsakoff, P. M., & Podsakoff, N. P. (2011, June). Construct Measurement and Validation Procedures in MIS and Behavioral Research: Integrating New and Existing Techniques. *MIS Quarterly Vol. 35, No. 2 (June 2011)*, pp. 293-334. *Management Inf*, 35(2), 293-334. doi:https://doi.org/10.2307/23044045
- Markowitsch, J., & Heffler, G. (2019). *Future developments in Vocational Education and Training in Europe*. Seville: European Commission. Retrieved from <https://ec.europa.eu/jrc/sites/jrcsh/files/jrc117691.pdf>
- Mikalef, P., Pappas, I. O., Krogstie, J., & Giannakos, M. (2018, August). Big data analytics capabilities: a systematic literature review and research agenda. *Information Systems and e-Business Management*, 16(3), 547-578. doi:10.1007/s10257-017-0362-y
- Nasution, H. (2012). Implementasi Logika Fuzzy pada Sistem Kecerdasan Buatan. *Jurnal Elkha*, 2. doi:http://dx.doi.org/10.26418/elkha.v4i2.512
- News, E. (2020). *AI, Industry 4.0 and disrupting vocational education*. Retrieved from <https://www.educationmattersmag.com.au/ai-industry-4-0-and-disrupting-vocational-education/>
- Paschen, J., Wilson, M., & Ferreira, J. J. (2020). Collaborative Intelligence: How Human and Artificial Intelligence Create Value along the B2B Sales Funnel. *Business Horizons*, 63(3), pp. 403-414. Retrieved from <https://ssrn.com/abstract=3697589>
- Pastore, F. (2018, OCTOBER). New Education Models for the Workforce of the Future. *IZA Policy Paper No. 143*. Retrieved from <https://docs.iza.org/pp143.pdf>
- Prihantoro, C. R. (2020, March). Vocational High School Readiness for Applying Curriculum Outcome Based Education (OBE) in Industrial 4.0 Era. (H. U. Mirici, Ed.) *International Journal of Curriculum and Instruction*, 12(1), 251-267., 12(1), 251-267. Retrieved from <http://ijci.wcci-international.org/index.php/IJCI/article/view/323>
- Raisch, S., & Krakowski, S. (2021, Jan 14). Artificial Intelligence and Management: The Automation-Augmentation Paradox. *Academy of Management Review*, 46(1). doi:https://doi.org/10.5465/amr.2018.0072
- Ransbotham, S., Gerbert, P., Reeves, M., Kiron, D., & Spira, M. (September 2018). *Artificial Intelligence in Business Gets Real*. MIT Sloan Management Review and The Boston Consulting Group. Retrieved from <https://sloanreview.mit.edu/projects/artificial-intelligence-in-business-gets-real/>
- ROHMAN, A. S. (2018, Oktober 11). Outcomes Based Curriculum dan IABEE. *Workshop Musyawarah Nasional FORTE*. Batu-Malang, East Java, Indonesia: STEI ITB. Retrieved from <https://elektro.ub.ac.id/forte/wp-content/uploads/2018/10/Workshop-OBE-IABEE-FORTEI-20181.pdf>
- Schryen, G. (2013). Revisiting IS business value research: what we already know, what we still need to know, and how we can get there. *European Journal of Information System*, 22(2), 139-169. doi:https://doi.org/10.1057/ejis.2012.45
- Shank, D. B., & Gott, A. (2019, August). People's self-reported encounters of Perceiving Mind in Artificial Intelligence. *Data in Brief*, 25. doi:https://doi.org/10.1016/j.dib.2019.104220
- Souder, W. E. (1977). *An exploratory study of the coordinating mechanisms between R & D and marketing as an influence on the innovation process Unknown Binding*. Pittsburgh: School of Engineering, University of Pittsburgh.
- Sousa, W. G., Melo, E. R., De, P. H., Bermejo, S., Farias, R. A., & Gomes, A. O. (2019, October). How and where is artificial intelligence in the public sector going? A literature review and research agenda. *Government Information Quarterly*, 36(4). doi:https://doi.org/10.1016/j.giq.2019.07.004
- Wayne Holmes, M. B. (2019). *Artificial Intelligence In Education Promises and Implications for Teaching and Learning*. Boston, Massachusetts, 02130, United States of America: The Center for Curriculum Redesign, .
- Wilson, H. J., & Daugherty, P. (2018, July 1). Collaborative intelligence: humans and AI are joining forces. *Harvard Business School Publishing*, 96(4), pp. 114-123.
- Woolf, B. P. (2008). *Building Intelligent Interactive Tutors: Student-centered strategies for revolutionizing e-learning*. San Francisco, CA, United States: Morgan Kaufmann Publishers Inc.
- Wu, S. P.-J., Straub, D. W., & Liang, T.-P. (2015, June). How Information Technology Governance Mechanisms and Strategic Alignment Influence Organizational Performance. *MIS Quarterly*, 39(2). Retrieved from <https://www.jstor.org/stable/26628363>

Yogaswara, R. D. (2019, September). Artificial Inteligence Sebagai Penggerak Industri 4.0 dan Tantangannya Bagi Sektor Pemerintah dan Swasta. Masyarakat Telematika Dan Informasi. *Masyarakat Telematika Dan Informasi Jurnal Penelitian Teknologi Informasi dan Komunikasi*, 10(1), 68-73. doi:10.17933/mti.v10i1.144

An Overview of Arabic Translation and Interpreting Programs in Turkish Higher Education

Gürkan Dağbaşı¹, Murat Özcan², Yasin Murat Demir²

¹ School of Foreign Languages, Ankara Hacı Bayram Veli University, Ankara, Türkiye

² Faculty of Letters, Ankara Hacı Bayram Veli University, Ankara, Türkiye

Correspondence: School of Foreign Languages, Ankara Hacı Bayram Veli University, Ankara, Türkiye.
Tel: +905358671585. E-mail: gurkan.dagbasi@hbv.edu.tr

Abstract

Although the history of translation is almost as old as the history of humankind, it was not until the second half of the twentieth century that translation studies were recognized as an independent discipline. Perhaps due to this fact, translation and interpreting programs at the higher education level started to be introduced in Turkey in the 1980s. These programs were English translation and interpreting programs. The first program to train Arabic translators and interpreters was opened at Kırıkkale University in 2011 and remained the only program in its field until 2017. Between 2017 and 2023, nine more Arabic translation and interpreting programs, six at public universities and three at private universities, started actively admitting students. In this study, Arabic translation and interpreting programs in Turkey are examined from various angles. At the end of the study, it was concluded that the demand for the departments at state universities was higher, the students with the highest scores preferred Istanbul University. Interpreter and translator students scored an average of forty-two points in the eighty-question foreign language exam and there were an average of 3.8 faculty members in these programs. Eight faculty members work in these programs and the students who are admitted to them are mostly placed in universities in their home cities. The total capacity of the programs is sufficient and, although there is no unity in the curriculum of the programs, similar courses are offered in different classes. The programs focus on language skills for the first two years and, subsequently, focus on translation-oriented courses. At the end of the study, we make some suggestions for translation and interpreting programs by making associations with the findings of the related literature.

Keywords: Arabic, Translation and Interpreting, Higher Education

1. Introduction

1.1 Introduce to the Problem

Although the history of translation is quite old, the recognition of translation studies as an independent discipline is quite new. The phenomenon of translation, which had been studied under disciplines such as linguistics, literature, and textual linguistics for a long time in line with their own perspectives, began to operate as an autonomous discipline in the West in the 1970s, as it could not be analyzed solely with the approaches of those

disciplines (Şan & Fidan, 2021:128).

In Turkey, after the 1980s, awareness of translation studies increased and independent programs began to be offered in higher education institutions. As Akbulut (2016:10) points out, it is possible to mention the existence of a department offering translation education in Turkey with the beginning of preparatory education at Hacettepe University in 1982-1983. Later, academic translation education programs started to operate at Boğaziçi University in 1983-1984 and then at Yıldız Technical University in 1993. However, all three of these programs were established to train English translators.

As Kara (2010:94) emphasizes, when translation, as a tool of intercultural communication, is evaluated from a historical perspective, it is seen that it has made a significant contribution to the development of societies. The Arabs have a centuries-old history of translation, so much so that, they carried out one of the largest translation movements in the world during the Abbasid period, which led to a great transfer of knowledge and culture from East to West (Dağbaşı, 2013:186). Although not as intense as the Arabs, translation activities have also been carried out by Turks throughout history. However, despite this rich history, the first program to train Arabic translators and interpreters was opened at Kırıkkale University in 2011-2012. This date is quite long overdue. This program continued to exist as the only one in its field until 2017-2018. Later, Arabic translation and interpreting programs at Istanbul Aydın, Istanbul 29 Mayıs, Ankara Yıldırım Beyazıt, Selçuk, Karamanoğlu Mehmetbey, KTO Karatay, Ankara Hacı Bayram Veli, Samsun 19 Mayıs and Istanbul universities started to actively admit students.

When the general objectives of these programs are examined, it is found that they aim to train students who have adopted translation as an intercultural communication expertise that can produce solutions to real needs. Additionally, these programs aim at training Arabic translators who are equipped with terminology and knowledge in various areas such as medicine, law, social sciences, technology and literature. These students can translate at national and international level in these areas, have the ethics of translation and can successfully carry out translation and interpreting in all public and private institutions and organizations in Turkey and abroad (Ballı, 2018:1465).

1.2 Purpose of the Research

The aim of this study is to discuss the data on Arabic translation and interpreting programs in ten universities in Turkey, 7 public and 3 private, and to prepare the ground for further research on the subject.

The questions of the study are as follows:

- 1- What has been the course of the establishment of Arabic translation and interpreting programs and what is their current status?
- 2- Is the number of faculty members in Arabic translation and interpreting programs sufficient?
- 3- Which of the Arabic translation and interpreting programs are most preferred by students?
- 4- What is the general ranking of students placed in Arabic translation and interpreting programs?
- 5- What is the average foreign language test score of the students placed in Arabic translation and interpreting programs?
- 6- What are the similarities or differences between the four-year curricula of Arabic translation and interpreting programs?

2. Method

Qualitative research method was used in this study. Within the scope of the research, information about the ten Arabic translation and interpreting programs actively admitting students was obtained by scanning the Higher Education Program Atlas page of the Council of Higher Education. In addition, the web pages of universities were also utilized.

2.1. Data Analysis

The data obtained on the profiles of Arabic pre-service teachers were categorized with the help of a statistical expert and interpretations were made based on these statistical data.

3. Findings and Interpretations

Table 1: Some information about Arabic translation and interpreting programs

University	Annual quota	Order of student with highest score (2022)	Order of student with lowest score (2022)	Foreign language test average in 80 questions	Number of choices in the last year	Current number of students	Opening year	Number of department members
Ankara Hacı Bayram Veli University	60	19487	54852	53.2	779	120	2021	5
Ankara Yıldırım Beyazıt University	60	15172	52874	55.4	687	195	2018	4
İstanbul University	30	4814	27422	70.3	823	27	2202	3
İstanbul Aydın University	17	32476	110779	36.1	54	13	2017	3
İstanbul 29 Mayıs University	21	13159	58759	53.5	102	-	2018	3
Karamanoğlu Mehmet Bey University	60	59335	92163	20.7	428	151	2020	7
Kırıkkale University	50	48939	80873	30	541	146	2011	3
KTO Karatay University	15	58871	108526	22.8	30	21	2020	4
19 Mayıs University	40	27579	69670	38.7	571	98	2022	3
Selçuk University	60	8671	68524	43.2	662	199	2018	3

Each year, 413 student quotas are allocated for Arabic translation and interpreting programs in Turkey. The vast majority of these places are at public universities. The quota at private or foundation universities constitutes only 13.3% of the overall quota. It is possible to say that the number of quotas is sufficient considering Turkey's commercial, economic and social relations with the Arab geography.

In terms of faculty members, Karamanoğlu Mehmet Bey and Ankara Hacı Bayram Veli Universities are in a satisfying position. In most of the other six university programs, the number of faculty members is three, which is the minimum number required by the Council of Higher Education. This number is too low to provide high-quality education in any program. Such programs need to meet their faculty member needs swiftly.

Istanbul University is preferred by the most successful students among all universities. This university is followed by Selçuk and Istanbul 29 Mayıs Universities. The programs with the lowest success rankings are Istanbul Aydın and KTO Karatay Universities. However, one should note that there is a big gap between the base and maximum rankings among the students who are placed in all programs. For example, while the success ranking of the student who ranked in the first place in Selçuk University Arabic Translation and Interpreting program is 8671, the success ranking of the student who placed in the last place is 68524. In other words, there is a difference of almost 60.000. In this case, students studying in the program will be at varying levels and perhaps in-class education and training activities will be affected.

In order to be placed in Arabic Translation and Interpreting programs, students are required to solve a foreign language test consisting of eighty questions. The students who are most successful in this test prefer Istanbul, Ankara Yıldırım Beyazıt, Istanbul 29 Mayıs and Ankara Hacı Bayram Veli Universities respectively. When averaged across all universities, the average score of prospective Arabic translator and interpreter students is 42.39 in 80 questions. This shows that students were able to solve about half of the foreign language test.

According to the number of preferred Arabic Translation and Interpreting programs, the most popular universities are Istanbul, Ankara Hacı Bayram Veli and Ankara Yıldırım Beyazıt Universities, respectively. Private universities are the least preferred universities. The fact that Istanbul and Ankara are the two largest cities in Turkey may play a role in these preferences. In addition, a little more than half of the 150 applicants (78 candidates) to these three universities were preferred by people residing in the cities where these universities are located. Although the rate is not as high in other universities, the situation is similar.

The Arabic translation and interpreting programs are four-year programs. Most universities also have a one-year preparatory education. Below, the mandatory courses of universities offering translation and interpreting programs in Turkey are analyzed on one academic-year basis and some conclusions are drawn. Since the course content of Istanbul University Arabic Translation and Interpreting Program could not be accessed, it could not be examined in this section.

In the 1st grade, university-based mandatory courses in Arabic are as follows:

Ankara Hacı Bayram Veli University:	Arabic Speaking I-II, Arabic Writing I-II, Applied Grammar I-II, Reading I-II, Introduction to Translation I, Arab Countries and Cultures.
Ankara Yıldırım Beyazıt University:	Grammar I-II, Legal Translation I-II, Reading I-II, Writing I-II, Speaking II, pre-Islamic Arab Culture, Media Translation, Media Translation, Audio Analysis, Post-Islamic Arabic Culture I.
Istanbul Aydın University:	Speaking I-II, Writing I-II, Reading Skills I-II, Arabic Grammar I-II, Introduction to Translation I-II.
Istanbul 29 Mayıs University:	Intercultural Communication, Readings in Modern Arabic Texts, Introduction to Translation, Readings in Classical Arabic Texts, Comparative Civilization Studies, Applied Interpretation.
Karamanoğlu Mehmetbey University:	Arabic Grammar I-II, Lexicology I-II, Speaking I-II, Introduction to Translation I-II, Writing I-II.

Kırıkkale University:	Arabic Grammar I-II, >Lexicology I-II, Speaking I-II, Reading and Translation I-II, Writing I, Dictation.
KTO Karatay University:	Grammar I-II, Reading I-II, Writing I, Speaking I-II, Introduction to Translation, Textual Analysis, Translation Theories.
19 Mayıs University:	Contextual Grammar I-II, Speaking I-II, Vocabulary, Introduction to Translation, Writing I-II, Linguistics I, Culture and Translation.
Selçuk University:	Speaking I-II, Writing I-II, Reading I-II, Grammar I, Introduction to Translation I-II, Linguistics I.

Based on these data, all universities, except Istanbul 29 Mayıs University, include the four basic language skills in their first-year programs. Therefore, it is possible to say that the first year of translation and interpreting programs focus on basic language skills rather than the students' translation competence. Kırıkkale, Yıldırım Beyazıt and Karamanoğlu Mehmetbey Universities have lexicology courses. The inclusion of courses on culture and civilization in their curriculum at Istanbul 29 Mayıs University is noteworthy. In addition, this program provides the fewest number of mandatory courses. Ankara Yıldırım Beyazıt University, on the other hand, is distinctly different from universities in the way they offer more variety of courses. In this program, there are courses on special fields such as media translation and translation of the news in the first year. KTO Karatay University, on the other hand, offers the Translation Theories course to students in their freshman year, which is usually offered in the sophomore or junior year in other universities.

Second Grade Courses:

Ankara Hacı Bayram Veli University:	Arabic-Turkish Translation, Textual Analysis for Translators, Dialects of Arabic I-II, International Institutions and Translation, Translation and Translation in History, Turkish-Arabic Translation, Translation of Proverbs and Idioms, Research Methods in Translation.
Ankara Yıldırım Beyazıt University:	Post-Islamic Arabic Culture II-III, News Translation II-III, Modern Arabic Texts, Translation Theories, Speaking III-IV, Literary Translation I-II, Legal Translation III-IV, Complex Language Structures I-II, Consecutive Translation I, Classics, Note-taking Techniques.
Istanbul Aydın University:	Arabic Grammar III-IV, Writing III-IV, Introduction to Translation III-IV, Arabic Literature I-II, Speaking I-II, Advanced Reading I-II, Basic Skills in Interpreting.
Istanbul 29 Mayıs University:	Textual Analysis for Translators, Introduction to Community Interpreting, Technical Writing.
Karamanoğlu Mehmetbey University:	Applied Grammar I-II, Textual Analysis for Translators I-II, Speaking III-IV, Turkish-Arabic translation I-II, Writing III-IV, Translation Theory and Methods I-II.
Kırıkkale University:	Arabic Grammar III-IV, Arabic Textual Analysis I-II, Speaking I-II, Turkish-Arabic translation I-II, Writing I-II.
KTO Karatay University:	Turkish-Arabic Translation I-II, Speaking III-IV, Technical Translation I-II.
19 Mayıs University:	Contextual Grammar III-IV, Speaking I-II, Writing I-II Linguistics II, Arabic-Turkish translation I, Note-taking Techniques, Translation Theories.
Selçuk University:	Translation Theories, Comprehension and Speaking I, Consecutive Translation I, Literary Translation I, Note-taking Techniques I-II, Translation-oriented Textual Analysis I-II, Translation of Social Texts.

Ankara Yıldırım Beyazıt, Hacı Bayram Veli and Selçuk universities have intensive curricula and many types of courses. KTO Karatay and Istanbul 29 Mayıs Universities have very few mandatory courses. It can be said that this is advantageous for students because they will be able to choose the elective courses in the field they are interested in or want to specialize in. Ankara Yıldırım Beyazıt University continues to offer courses on Arabic culture, while Ankara Hacı Bayram Veli University offers a course on translation and interpreting in history, which is not available in other programs. Courses on the four skills (writing, reading, listening, speaking) gradually decrease in almost all programs, while Istanbul Aydın University continues to offer them.

Third Grade Courses:

Ankara Hacı Bayram Veli University:	Specialized Knowledge I-II, Consecutive Interpretation I-II, Translation Practices I-II, Media Translation I-II, Dialects of Arabic III-IV.
Ankara Yıldırım Beyazıt University:	Consecutive Interpreting II-III, Simultaneous Interpreting I-II, Effective Communication Skills I-II, Tourism Translation I-II, Literary Translation III, Technical Translation I-II, Diplomacy Translation, Terminology and Translation of Divine Texts I, Medical Translation I, Legal Translation V, Arabic Idioms and Proverbs, Literary Criticism.
Istanbul Aydın University:	Modern Arabic Texts I-II, Arabic Composition I-II, Interpreting Techniques I-II, Simultaneous Translation I-II, Dialects of Arabic I-II, Subtitle and Dubbing Translation I-II.
Istanbul 29 Mayıs University:	Consecutive Interpreting, Translation Theory and Criticism, Sight Translation, Quality Standards in Translation.
Karamanoğlu Mehmetbey University:	History of Translation I-II, Translation Techniques I-II, Advanced Arabic I-II, Consecutive Translation I-II, Translation of Press Texts, Translation of Commerce and Economy Texts, Dialects of Arabic I-II, History of Arab Culture I-II.
Kırıkkale University:	Grammatical Analysis I-II, Written Translation Techniques I-II, Oral Translation Techniques I-II, Simultaneous Translation I-II, Specialized Texts I-II, Dialects of Arabic I-II
KTO Karatay University:	Arabic to Turkish Translation I-II, Translation of Press Texts I-II, Literary Translation I-II, Consecutive Translation, Document Translation.
19 Mayıs University:	Translation from Arabic to Turkish I, Consecutive Translation I-II, Simultaneous Translation I-II, Dialects of Arabic I-II, Translation from Turkish to Arabic I-II, Translation of Text Types I.
Selçuk University:	Translation of Economy, Legal Translation, Consecutive Translation, Advanced Consecutive Translation, Medical Translation I-II, Subtitle and Dubbing Translation, Interpreting Theories, Written Translation Theories, Audiovisual Translation, Arabic Dialects I-II.

In the 3rd year translation and interpreting programs, Istanbul 29 Mayıs University continues to offer minimum number of courses to its students. The program at Ankara Yıldırım Beyazıt University, on the other hand, is intensive and offers mandatory courses in many different sub-fields such as medicine, law, religion, diplomacy and tourism. Similarly, Selçuk and Karamanoğlu Mehmetbey universities also have intensive programs. Ankara Hacı Bayram Veli University, on the other hand, continues to emphasize dialect teaching in the third year.

Fourth Grade Courses:

Ankara Hacı Bayram Veli University:	There are no compulsory courses. There are elective courses such as cultural studies, literary translation, religious text translation, community interpreting, conference interpreting.
Ankara Yıldırım Beyazıt University:	Terminology and Translation of Religious Texts II, Medical Translation II, Essential Arabic Sources, Dialects of Arabic I-II, Digital Media Translation, Translation Practices, Contemporary Arab World, Arabic Manuscript Analysis.
Istanbul Aydın University:	Consecutive Translation I-II, Translation of Integrated Texts I-II, Proverb and Idiom analysis I-II, Arabic Textual Analysis I-II, Modern Short Story and Novel, Contemporary Arabic World.
Istanbul 29 Mayıs University:	Arabic Research Techniques, Conference Interpreting.
Karamanoğlu Mehmetbey University:	Linguistics I-II, Simultaneous Translation I-II, Translation of Academic Texts, Document Translation, Discourse Translation I-II.
Kırıkkale University:	Special Topics Translation I-II, Arabic Print and Visual Media I-II, Media Translation I-II, Simultaneous Translation III-IV, Dialects of Arabic III-IV.
KTO Karatay University:	Translation of Integrated Texts I-II, Simultaneous Translation I-II, Dialects of Arabic I-II.
19 Mayıs University:	Translation of Written and Oral Media I-II, Simultaneous Translation III-IV, Translation of Text Types II, Translation Practice I-II.
Selçuk University:	Simultaneous Translation I-II, Conference Interpreting I, Translation Criticism, Arabic Dialects III, Translation of Legal Texts.

Ankara Hacı Bayram Veli and Istanbul 29 Mayıs universities allow their students to take a large number of elective courses in the fourth year. While Ankara Yıldırım Beyazıt University continues its intensive course program, Istanbul Aydın University offers courses on Arabic literature and culture during this year.

When the four-year curricula of these institutions are compared, some university-specific conclusions are drawn: Ankara Hacı Bayram Veli University stands out as a program that attaches importance to the teaching of the dialect. In its program, which begins with the teaching of basic language skills, the curriculum does not give much room for thematic field courses. The program of Ankara Yıldırım Beyazıt University, on the other hand, is intensive, with the highest number of courses compared to other universities. There are theme specific courses such as tourism, medicine, law and religion. The fact that the legal translation course is included in the program for five semesters shows the importance given to this field. Istanbul Aydın University seems to be a program that emphasizes reading, writing and speaking skills. Istanbul 29 Mayıs University, on the other hand, stands out with its low number of mandatory courses and relatively high number of elective courses. This can be both positive and negative for students. It can be positive because students can choose the course they want to specialize in. It can be negative because it may not be possible to offer ample amount of elective courses with only three faculty members in the program. Thus, students may be forced to choose mandatory elective courses. The programs of Karamanoğlu Mehmetbey and Kırıkkale Universities are similar, as both programs focus on language skills and then move on to translation courses. However, the number of compulsory courses at Karamanoğlu Mehmetbey University is higher. KTO Karatay University is also a language skills-oriented program. 19 Mayıs University's program is largely similar to the other programs but differs from the other programs in that it includes an important course such as linguistics as a mandatory course for two semesters. Selçuk University's program is similarly intensive compared to that of Ankara Yıldırım Beyazıt University. It also differs as the only program that offers courses in conference interpreting and interpreting theories.

4. Conclusion and Recommendations

Although English translation and interpreting programs were opened in Turkish higher education immediately after translation and interpreting was accepted as a discipline in the world, the first Arabic translation and interpreting program was opened almost thirty years after the English one. In other words, the oldest Arabic translation and interpreting program has a history of ten years, while the remaining nine programs have a history of six years. This is not enough time for these programs to complete their development.

The number of faculty members in Arabic translation and interpreting programs is insufficient. Six of the ten programs have the minimum number of three faculty members. It may not be very efficient to manage a program with approximately 180-200 students with three or four faculty members. This may cause a decrease in the motivation of the faculty members due to the excessive course load and may be tedious for the students. This situation should be urgently addressed and the number of faculty members in these programs should be increased. Turkey's position and its increasing multidimensional relations with Arab countries create a need for translators and interpreters who are fluent in Arabic. It can be said that the 413 quotas allocated to universities to train Arabic translators in Turkish higher education are sufficient to meet this need.

The universities most preferred by prospective translators are located in Istanbul and Ankara. This is not surprising because these two cities are the largest and most developed ones in Turkey.

It was observed that there was a big difference between the score rankings of the students who were placed in the translation and interpreting program. While the ranking of the student with the highest score in Turkey is 4814, the ranking of the student with the lowest score is 110779. In other words, there is a difference of 105,965 students.

According to the average of all programs, the average score of prospective Arabic translators in the eighty-question foreign language test is 42.39. Based on this, it can be inferred that successful students in the language test do not prefer the Arabic translation and interpreting program. In order to change this situation, perhaps scholarships or support can be offered to students for a certain number of quotas.

When the compulsory courses directly related to Arabic in these programs for four years are examined, it is found that almost all programs are similar to each other in terms of courses: the programs concentrate on reading, writing and speaking courses, especially in the first and second years, but do not offer listening courses. The third and fourth grades, on the other hand, are heavily devoted to translation studies. It was also found that a very important course such as "Note-taking Techniques" was not included in many programs, which can be said to be a shortcoming for the programs. Similarly, in some programs, "Translation Theories" and "Translation Criticism" courses are offered as electives rather than mandatory courses. It is thought that these courses should be in the category of mandatory courses in order to increase the philosophical and intellectual knowledge of prospective translators and interpreters.

References

- Ballı, A. (2018). *Türkiye’de mütercim tercüman yetiştirme programları ve sorunları* [Translation and interpreting programs and problems in Turkey]. 2. International Symposium on Innovative Approaches in Scientific Studies.
- Şan, F., Fidan, Ö. (2021) Çeviribilimin Türkiye’deki gelişimi açısından çeviribilimsel konulu derlem yayınların incelenmesi [Investigation of corpus publications on translation studies in terms of the development of translation studies in Turkey]. *Üniversite Araştırmaları Dergisi*, 127-136. [https://doi: 10.26701/uad.898896](https://doi.org/10.26701/uad.898896)
- Akbulut, A.N. (Ed.). (2016). *Türkiye’de çeviribilim ilk adımların yol arkadaşlığı* [The Companionship of the first steps in translation studies in Turkey]. İstanbul: Sözcükler Yayınları.
- Kara, S.V. (2010). Tarihsel değerlendirmeler ışığında Türkiye’de çeviri etkinliği [Translation efficiency in Turkey in the light of historical evaluations]. *Mersin Üniversitesi Eğitim Fakültesi Dergisi*, 94-101.
- Dağbaşı, G. (2013). Abbasi dönemi çeviri faaliyetleri [Abbasid period translation activities]. *Eski Yeni Dergisi*. s. 177-187.

<https://yokatlas.yok.gov.tr/lisans-bolum.php?b=97105>

<https://yokatlas.yok.gov.tr/lisans-bolum.php?b=97106>

Investigation of the Historical Development and Knowledge Guidelines of Contemporary Guangxi Vocal Music in China

Pang Yi¹, Jarernchai Chonpairot², Warakorn Seeyo³

¹ Ph.D. Student, College of Music, Mahasarakham University

² Asst. Prof. Dr., College of Music, Mahasarakham University

³ Asst. Prof., College of Music, Mahasarakham University

Correspondence: Pang Yi, College of Music, Mahasarakham University, Kantharawichai, Maha-Sarakham, 44150, Thailand. E-mail: 62012060029@msu.ac.th

Abstract

This study used the qualitative research method. The objectives were to: 1) investigate the historical development of Guangxi vocal music in China. 2) Presenting guidelines for studying knowledge of contemporary Guangxi vocal music in China. There are three main informants. The research process includes literature reviews, field investigation methods, and interview methodologies. The study's results are as follows: 1) Since the beginning of the century, the "Nanning International Folk Song Festival" has been a new starting place for the creation of Guangxi vocal works. The "Guangxi Folk Music and Dance Symposium" laid the groundwork for Guangxi's new century vocal music compositions. The "China-ASEAN Music Week" was a success, and it has tremendously fostered song creation in Guangxi, particularly vocal music development with rich content and different styles. 2) Taking students to the exhibition of the development history of vocal music creation in Guangxi and studying the important collections of vocal music creation in different periods since the new period is the best way for students to understand the development trend of vocal music creation in Guangxi. Make students conduct fieldwork, collect, and analyze ethnic folk songs. Conduct a field study, engage with the musical elements in daily life, and experience the melody with regional characteristics. To promote music creation, an open, creative attitude and constantly innovative creative methods are required.

Keywords: Investigation, Knowledge, Guangxi Vocal Music, Chinese New Music, Composition

1. Introduction

Guangxi Zhuang Autonomous Region can be found in southern China. Slightly smaller than Laos, Guangxi has an area 220,400 km². It is bordered by Yunnan to the west, Guizhou to the north, Hunan to the northeast, and Guangdong to the east, the Gulf of Tonkin and Vietnam to the south and southwest. Guangxi was named by the Song Dynasty (960–1279) when the region was known as 'Wide South, Western Route', meaning the western half of land south of the Nan Mountains. The Yuan Dynasty (1206–1368) shortened its name to Guangxi – 'Western Expanse' – in contrast to Guangdong - 'Eastern Expanse' – when it made provinces out of these areas. In 1958, the province became the Guangxi Zhuang Autonomous Region. It is one of five provincial-level autonomous

regions, each of which is designated to provide some autonomy for a significant indigenous ethnic group. Thus, the governor of Guangxi must always be Zhuang, though the reality of China's political system means that this autonomy is in name only (Leet, 2023).

Songs, as a type of time art that appears in the form of sound, have obvious time characteristics and are extremely easy to spread. In its unique way, it records the changes of the times, the sorrows and joys of the nation, and the aspirations of the people. Songs produced in different eras can often reflect the spectrum of the era and record the changes in social history (Zeng, 2020). Guangxi is an ethnic minority autonomous region composed of twelve generations of inhabitants (Hong et al., 2015; Gustafsson & Sai, 2015; Li et al., 2019; Wang et al., 2019). Its cultural traditions and national arts have deep historical accumulations and distinctive regional characteristics. This is the root and soul of Guangxi music culture. Over the years, composers have worked hard to present their distinct national cultural characteristics and regional cultural features, striving to express the artistic demands of national cultural traditions. Tell history with music and tell Guangxi stories with music (Pen-Yeh, 1989; Huang, 2003; Yunyan & Nicolas, 2021; Baker, 2022). Since the establishment of the Guangxi Zhuang Autonomous Region in 1958, the development of music and dance in Guangxi can be roughly divided into areas after the establishment of the district and before the reform and opening (about the end of the 1950s to the end of the 1970s), and after the reform and opening to the beginning of the new century (about the 20th century). The three stages from the early 1980s to the late 1990s and the new century to the present (after 2000) respectively represent the three development periods of "forming-recovering-rising" in the development of Guangxi music and dance culture (Huang, 2018; Wang & Kantasiri, 2022).

Guangxi's vocal music has advanced since its reform and opening. The convening of the Third Plenary Session of the Eleventh Central Committee of the Party breathed new life into the stale Guangxi music scene. The creation of songs in Guangxi showed more diversified, richer, and open characteristics. during this period. Based on local musical materials, it absorbs, merges, or grafts foreign musical elements so that the works not only show their inherent local cultural characteristics but also optimize their quality, showing strong vitality. As a result of the expansion of vocal music creation themes and content, vocal music creation tends to diversify (Li et al., 2022).

Since the new century, Guangxi's vocal music creation has been a shining star. In December 1996, the "Huashan Conference," held by the Propaganda the Department of the Guangxi Party Committee became another new starting point for Guangxi's music industry. With the advent of the new century, Guangxi Vocal Music Creation has entered a stage of vigorous development. mainly reflected in first, the diversification of subject content. The second is the diversification of creative forms. There are vocal works that integrate artistry and skill and are suitable for vocal music. Teaching in music schools, various vocal competitions, and professional concerts; vocal works that express feelings in the context of popular songs; large-scale vocal music genres; musical theatre; and opera exploration.

2. Method

The research methods of this article are as follows: 1) Documentary data method: through collecting, sorting out, and identifying existing documents and forming a scientific method of understanding by studying these data. 2) Field investigation method: Field investigation is the basic method to obtain first-hand information. 3) Qualitative research method: Explain the collected data (Oun & Bach, 2014).

2.1 Research site

Guangxi Zhuang Autonomous Region is in southern China, between 104°28' 112°04' east longitude, 20°54' 26°23' north latitude, and the Tropic of Cancer traverses the middle part. Guangxi is an autonomous region inhabited by many ethnic groups. There are 12 ethnic groups in China, including Zhuang, Han, Yao, Miao, and others. Dong, Mulao, Maonan Hui, Jing, Yi, Shui, and Gelao. The Zhuang ethnic group is the most populous ethnic group in Guangxi and China. On March 5, 1958, the State the Council approved the establishment of the Guangxi Zhuang Autonomous Region.



Figure 1: Map of Guangxi Zhuang Autonomous Region

Source: <https://chinafolio.com/provinces/guangxi-province>, (2023).

2.2 Key informants

Key informants include retired musicians, retired singers, and academics. Three important informants have been identified. The artists we researched were casual informants; they were some of the audience members we encountered during the performance. The researcher has been conducting research at the "Guangxi National Vocal Music Brand R&D and Innovation Team" for the past four years, under the guidance of Professor Zeng Cheng, College of Music, Guangxi Arts University. Three top scholars and experts in the field of Guangxi music were interviewed for the singing analysis of Guangxi vocal works. They are all professors at Guangxi Arts University.

2.2.1 Professor Zeng Cheng, an outstanding vocal scholar in Guangxi



Figure 2: Professor Zeng Cheng

Source: Pang Yi, (2021)

2.2.2 Professor Wu Ninghua, Guangxi folk music research expert



Figure 3: Professor Wu Ninghua

Source: Pang Yi, (2021)

2.2.3 Associate Professor Chu Zhuo, Director of Guangxi Museum of Ethnic Music.



Figure 4: Associate Professor Chu Zhuo

Source: Pang Yi, (2021)

The criteria for selecting key informants are: They are the top experts in Guangxi music research and music professors. They have outstanding achievements in vocal performance, vocal music creation, and folk music fieldwork.

2.3 Research process

- 1) Developing research tools, including an observation form and an interview form
- 2) Data collection: both written and field data were gathered; field data was gathered through observations and interviews.
- 3) Data management Data were categorized and validated using triangular approaches.
- 4) Data analysis. The data was analyzed in accordance with the objectives specified.
- 5) The study results were edited and presented analytically and descriptively.
- 6) Research results are presented in academic papers and books at seminars and conferences, or they are published in journals or books.

3. Results

3.1 The historical development of Guangxi vocal music

The key informant, Professor Zeng Cheng, said: "From the early 50s of the twentieth century, with the reform and opening up of the twentieth century, the creation of vocal works in Guangxi was mainly based on the original folk songs." A group of Guangxi lyricists, songwriters, and vocal performance artists have worked hard to collect and research ethnic folk music. The creation of Guangxi vocal works During this period, there was not only a continuation of Guangxi folk songs but also the creation of a new situation in Guangxi vocal art. (Zeng & Huang, 2017) From 1949 to 1979, from the founding of the People's Republic of China to the time when the People's Republic of China reformed and opened up, Guangxi's vocal art has maintained tradition while introducing new elements. An unforgettable song recorded the development of Guangxi's vocal music industry. It reflects the spectrum of the times and records the changes in social history (Fang, 2016).

A work based on folklore, "Liu Sanjie" The singing fairy "Liu Sanjie" is an ancient legend spread in Guangxi folk and is a beautiful symbol of the hardworking, brave, singing, and dancing Zhuang people. The Caidiao opera and folk song and dance "Liu Sanjie," collectively created and performed by Guangxi literary and art workers based on this legend, embodies the painstaking efforts and wisdom of their generation of musicians. It has established a monument and brand for Guangxi music and has greatly promoted the development of Guangxi vocal music creation.

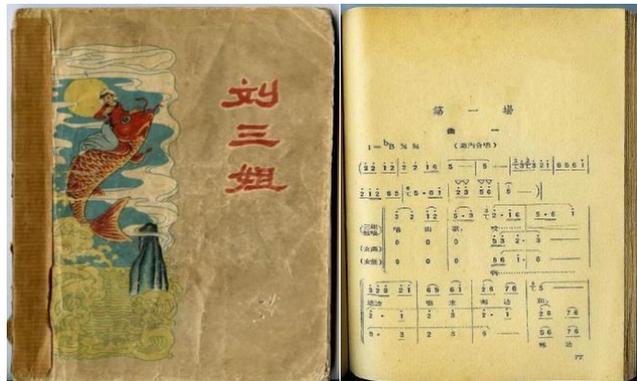


Figure 5: 1959 Caidiao play "Liu Sanjie" script and song "Folk Songs Are Like Spring River",
Source: Guangxi Museum of Ethnic Music, December, (2021)

In 1961, China's Changchun Film Studio adapted and produced the feature film "Liu Sanjie" based on the musical. In the film, "Folk Songs are Like Spring," "River" and "Where is there a vine wrapped in a tree?" adapted by the famous composer Lei Zhenbang and other beautiful songs are widely sung and popular at home and in abroad. This is the most glorious page in the history of Guangxi music (Zeng & Huang, 2017).



Figure 6: History of the movie "Liu Sanjie"
Source: Guangxi Museum of Ethnic Music, December, (2021)

Following the establishment of New China in 1949, the new social system provided people with meaning in their lives. Under the guidance of the cultural policy of the Communist the Chinese Communist Party, the country's literary and artistic creation, has entered a period of high growth. production. Guangxi vocal music creation has also entered a new historical era, with many new folk songs with colorful content and fresh, lively forms. It reflects the sincere love and warm praise of the people of Guangxi toward Mao Zedong, the leader of the Communist Party of China. At the same time, various cultural performances are organized by the central government and governments at all levels for the purpose of prospering the people's leisure life and developing cultural During this time, undertakings have also become very influential social and artistic activities. The more influential songs are "Chairman Mao Came to G," "Zhuang Man Always Follows Mao Zedong," "Zhuang Brocade Dedicated to Chairman Mao," and other phrases and songs (Zeng & Huang, 2017).

With the advancement of literary and artistic policies and the guidance of the "Double Hundred" policy, singing activities are generally carried out in urban and rural areas, and folk song competitions and mass song competitions are held. By composing the rhythm of the times and the voice of the people into a beautiful singing voice, Guangxi music creation has been developed and innovated. In March 1956, to promote and encourage music creation in Guangxi and to select outstanding works to participate in the "First National Music Week," the Guangxi Cultural Bureau and the Guangxi Federation of Literary and Art Federations jointly organized the first collection of music works. The works received in this event cover a wide range of content and themes, reflecting the most important events in Guangxi's struggle life and a new perspective on life. There are 46 pieces of final prize-winning works, all of which are included in the "Awarded Song Collection." Among the award-winning works, songs such as "Ye

"Le Tian Lai Ye Le Tian" (arranged by Lin Changchun) were selected as the performance repertoire for the Guangxi delegation to participate in the "First National Music Week" and became outstanding and influential works.



Figure 7: August 1956, "The First National Music Week", Tianjin, Shanxi and Guangxi delegation concert program

Source: Guangxi Museum of Ethnic Music, December, (2021)

In the mid-1960s, due to the "Cultural Revolution," Guangxi's music career was severely disrupted. The musical "Liu Sanjie" bears the brunt of criticism. The achievements of Guangxi's literary and artistic circles were completely rejected, and the art works withered. Many vocal artists have been criticized during the uprising against feudalism, bourgeoisie, and revisionism, denying the excellent traditional vocal music of history, denying the development of progressive vocal music, and denying the construction of revolutionary vocal music culture since the twentieth century. The only remaining Red Guard battle hymns and quotations from the Great Revolution Due to the influence of the ultra-Left trend of thought, the Guangxi music industry, like the whole country, has formed a whole set of deep-rooted "Left" literary and artistic concepts that only serve politics (Huang, 2018).

In January 1980, the Third Guangxi Literary and Art Workers' Congress was held in Nanning, Guangxi. This is another big gathering of literary and art circles in Guangxi, 20 years after the Second Guangxi Literary and Art Workers Congress in 1959. The conference made specific plans and arrangements for the further prosperity of literary and artistic creation in Guangxi. Since then, various types of literary creation seminars have been held in the autonomous region, creating opportunities for artists to broaden their horizons and improve their artistic accomplishments. At the same time, it laid the foundation for ideological guidance for the innovative development of professional music creation in Guangxi (Zeng & Li, 2020).

In April 1997, Guangxi's First Hundred Young Workers Creative Meeting was held in Nanning, Guangxi. The conference clarified the general idea of the development of Guangxi's literature and art and formulated and deployed the "213 Project." A series of important measures for the prosperity of literature and art and the implementation of high-quality projects, such as the establishment of the Guangxi "Five One Project" awards and the Guangxi Literary Creation Bronze Drum Award, were implemented. These measures have provided important conditions for stimulating the prosperity of Guangxi music creation.



Figure 8: A group photo of the participants of Guangxi's first 100 Young Workers Creative Conference

Source: Guangxi Museum of Ethnic Music, December, (2021)

The Guangxi government attaches great importance to the creative atmosphere full of the spirit of the times, the openness of creative thinking, and the relatively relaxed creative environment. Guangxi's vibrant music creators have ushered in a new era of music creation.

After entering the new century, the development of Guangxi's composition of songs has shown a leap forward in terms of the degree of innovation and the number of outstanding works. The successful holding of the "Nanning International Folk Song Festival" and the establishment of the "Gehai" brand building of "revitalizing the Bagui singing and dancing style" marked a new starting point for the creation of Guangxi vocal music works. "Nanning International Folk Song Festival" (its predecessor was the "Guangxi International Folk Song Festival," founded in 1993). Since the first was successfully held in 1999 and received a strong response, 22 years of spring and autumn have passed. On the stage of the previous Nanning International Folk Song Festival, the dialogue, collision, and fusion of traditional folk songs and modern, newly created songs frequently appeared, and then the colorful sound was wiped out.

In 2002, to strengthen the "Five One Project" boutique construction, Guangxi implemented the Guangxi songwriters signing system, which was the first in the country. This was organized by the Guangxi Musicians Association with the care and support of the Propaganda Department of the Party Committee of Guangxi Zhuang Autonomous Region and the Guangxi Federation of Literary and Art Circles. Fu Qing, Tang Li, Lin Haidong, Lan Qijin, Liang Shaowu, Mai Zhansui, Hu Hongyi, and seven others were among the first songwriters to be signed. In 2004, the Propaganda Department of the Party Committee of the Autonomous Region signed contracts with eight songwriters, including Li Jia, Lu Jian, Lin Hai, Qiu Yuanyuan, Wang Shisheng, Mo Junsheng, Liao Meicai, and Luo Dongbin, adding several creative forces to the Guangxi singing scene. The implementation of the contract system will be implemented specifically to incorporate the cultivation of literary and artistic talents and team building into the guarantee of the market management system and mechanism. A certain amount of funding will be given to provide a good creative environment for the contractor and give the corresponding task pressure. Almost every signed songwriter has lived up to expectations and achieved remarkable results. Carefully create a batch of very good-quality works. For example, "Carrying Good Days to Cross the Mountains" (composed by Fu Qing), "Yaoshan Green" (Mai Zhan Sui's lyrics), "Folk Song Brings the Moon Out" (Hu Hongyi's lyrics), "Green City Flower Rain" (composed by Li Jia), "The World is One Family" (licensed by Lu Jian), etc.

"China-ASEAN Music Week" has greatly promoted Guangxi's music creation. In terms of the creation of vocal works, songwriters in Guangxi took this platform to create a batch of new works with rich content and diverse styles. The Magnificent, composed by Cai Changzhuo and arranged by Mo Junsheng, is based on the beautiful scenery and humanistic customs of Guangxi. The melody is lovely, light, and cheerful. It depicts the great changes in the mountains and countryside in Guangxi, expresses the confidence and pride of the people of Zhuangxiang in building a better life under the leadership of the Communist Party of China, and sings a beautiful new era. "Beautiful Folk Song Girl," composed by Liang Shaowu and composed by Dai Wei, is inspired by the tone of Nahai Liao in Guangxi's Pingguo Liao Song. The ancient tones are perfectly combined with the modern melody, blending into one with a great Zhuang charm (Zhong & Liu, 2013).



Figure 9: 2021 China-ASEAN Music Week

Source: *Guangxi Arts University New Vocal Music Concert, November, (2021)*

3.2 The Guidelines for Studying Contemporary Guangxi Vocal Music in China

The key informant, Professor Wu Ninghua, a scholar of Guangxi ethnic music, said: "With the continuous change of mass media and electronic terminal products, the scope of universal coverage has gradually deepened and become wider and wider, which has had different degrees of impact on field workers and field objects." The connotation of "fieldwork" has also evolved with this change, and based on actual fieldwork based on field research, virtual fieldwork relying on the Internet and literature fieldwork relying on literature have been formed (Ninghua & Ziwei, 2019). Associate Professor Chu Zhuo said: "Ethnomusicology is not a book-to-book science, and every step of its progress is inseparable from specific fieldwork" (Zhou, 2022). Professor Zeng Cheng said: "Conduct thematic fieldwork on Guangxi national vocal music works, focusing on ethnic music creation, research, and performance" (Zeng & Li, 2020).

The core and foundation of Guangxi vocal music creation are folk tunes and folk song materials from various ethnic groups in Guangxi. Carry out field research, get in touch with the musical elements in life, and experience the melody with regional characteristics. In the early days of the founding of New China, music creators went deep into the countryside in Guangxi to carry out field investigations, collect and sort out the folk tunes of various ethnic groups, and extract and process the first batch of outstanding Guangxi folk song adaptations. To this day, conducting fieldwork remains the most important course in learning music composition. Guide students to carry out fieldwork, collect and organize materials, and lay the foundation for the further development, adaptation, and creation of music.



Figure 10: Researchers lead music students to conduct fieldwork.

Source: Pang Yi, (2022)

The Research and Practice of Local Music in Vocal Music Teaching in Music Education is based on collecting and sorting out the tones of ethnic folk songs. The mastery of many folk song materials and the use of skillful composition techniques are the prerequisites for shaping the style of Guangxi's national music. Choose topics from all aspects of life, use these musical materials as a basis, and find creative inspiration from them. An open, creative attitude and constantly innovative creative methods promote music creation.

Guangxi Arts University has done a very good job with the protection, transmission, and innovative development of Guangxi folk songs. It creates by taking the tone of national folk songs and combining it with the characteristics of Guangxi vocal music. Based on the history and tradition of the development of Guangxi's national music, it absorbs the world's advanced music culture and carries out colorful interpretations of Guangxi's vocal works, promoting the prosperity and development of Guangxi's vocal music works. The Zhang Tianqin plays and sings "Moonlight Love Affair," a song adapted from the Guangxi Chongzuo Zhuang folk song "Chicken Cry Tune." The work depicts a full moon hanging in the sky, moonlight filling the valley, and lovers witnessing the village's transformation into a rich one. The Zhuang Tianqin played tirelessly, singing more and more energetically until sunrise.



Figure 11: Guangxi Chongzuo Zhuang Tianqin playing and singing, "Moonlight Love Affair".

Source: Pang Yi, Guangxi Arts University, December, (2022)

The Guangxi Dongxing Jing nationality song and dance "The Wind Blows the Clouds," adapted from the traditional Kinh dance "Dancing Sky Lantern," The Jing, China's only maritime people, live on islands around Dongxing, Guangxi. In the early 16th century AD, they migrated to China from Tushan and other places in Vietnam.

"Love Song of the Pohui" is based on the pomp and circumstance of the Rongshui Miao Ethnic Pohui Guangxi. The asparagus dance and love songs sung at the Pohui are typical representatives of Miao songs and dances. Rongshui Miao Customs: You cannot blow asparagus or leave on the first day of the year. lunar month: on the second day of the first lunar month, you can blow asparagus, but you cannot go out of the village; the third day of the first lunar month begins as time for group activities and entertainment, and villagers rush around to meet the Pohui. Young men and women dressed in costumes and danced in circles. The atmosphere was cheerful, and the scene was warm.



Figure 12: Guangxi Rongshui Miao folk song "Love Song of the Pohui."

Source: Pang Yi, Guangxi Arts University, December, (2022)

"The Road Blocking Song" of the Guangxi Sanjiang Dong ethnic group is adapted from the "Road Blocking Song" and "Road Opening Song" in social activities such as festivals and marriages. With the purpose of "comparing singing talents, comparing knowledge, comparing wit, and enhancing "The Road Blocking Song" is a unique variety of colorful Dong folk songs that is used in many different situations.



Figure 13: Guangxi Rongshui Miao folk song "Love Song of the Pohui."

Source: Pang Yi, Guangxi Arts University, December, (2022)

4. Discussion

The findings of this study are consistent with the evolution of Guangxi's vocal music creation. On the basis of the previous Guangxi music research, further detailed research The most important thing is to precisely determine the starting year of the three stages of the development of Guangxi vocal music in the new period. This is an important research foundation for studying the history of Guangxi vocal music. The Guangxi national vocal music brand R&D and innovation team divides the Guangxi vocal music creation and development in the new period into three stages by studying the 72-year Guangxi vocal music development process (1949-2021) in Guangxi since the founding of the People's Republic of China and combining the actual situation of Chinese history with Guangxi history.

4.1 The Basis for the Division of the "New Period" of Guangxi Vocal Music Creation and Development

The division of the "new period" of New China is reflected in the "great historical turning point." The theoretical basis for the division of the "new period" is that different fields can be divided according to different research needs and according to different standards. Combined with the actual local conditions, delineate the stages in line with the local historical conditions. play a role in broadening horizons, enriching materials, and highlighting local characteristics. The development period of Guangxi music culture can be divided into three parts: before and after the establishment of the Guangxi Zhuang Autonomous Region; before China's reform and opening; after China's reform and opening up to the new century; and entering the new century to the present. The three stages represent the three development periods of "formation-recovery-ascent" in the development of Guangxi's music and dance culture.

4.2 The Different Characteristics of the Three Periods of Guangxi Vocal Music Creation and Development

In the early days of the founding of New China (1949–1979), Guangxi's vocal art adhered to the tradition and brought forth new ideas. One unforgettable song recorded the development of Guangxi's vocal music career. It reflects the spectrum of the times and records the changes in social history. During the period of China's reform and opening (1980–1999), a new period of Guangxi music development was ushered in. The new generation of Guangxi musicians forged ahead and gradually matured with the wave of the new period. Guangxi composers break through the shackles of thought and seek creative inspiration from Guangxi music. The creative method for creating publicity is constantly innovated, and popular vocal art works are composed. Entering the new period (2000-2021), in a good creative environment, Guangxi's rich folk music resources are the core and foundation of Guangxi's vocal music creation. The colorful interpretation of Guangxi vocal music works promotes the prosperity and development of Guangxi vocal music creation.

We can guide students to learn music creation step by step by combining the different styles and creation characteristics of the three stages of Guangxi vocal music creation development analyzed in this study. Based on

Guangxi music, this is a bold and innovative creation. Based on the history and tradition of the development of Guangxi's national music, it absorbs the world's advanced music culture and carries out colorful interpretations of Guangxi's vocal works, promoting the prosperity and development of Guangxi's vocal music works.

Guangxi, located in southern China, is a sea of folk songs. The territory is rich in national music resources and fine traditions. Each of the twelve ethnic minorities that have lived here for generations has a rich stock of folk songs with a wide range of content, providing a profound living soil and source for song creation and development in Guangxi. The researchers hope to contribute to the prosperity of Guangxi's vocal music creation and cultural improvement and enhance national self-confidence and pride through the study of "The Arts of Creation of Guangxi Vocal Music in the New Period (1949-2021)."

References

- Baker, C. (2022). The Brigands' Song: Serving in the Army of a Native Chieftain. A Traditional Song Text from Guangxi in Southern China. Translated and annotated by David Holm and Meng Yuanyao. *The Journal of the Siam Society*, 110(2), 146-148.
- Fang, K. (2016). The creation and development of Zhuang vocal music from the beginning of the 20th century to before the reform and opening up. *Art Education*, (04), 87-89. doi:CNKI:SUN:YSJY.0.2016-04-037.
- Gustafsson, B., & Sai, D. (2015). Mapping and understanding ethnic disparities in length of schooling: The case of the Hui minority and the Han majority in Ningxia autonomous region, China. *Social Indicators Research*, 124, 517-535.
- Hong, L., Guo, Z., Huang, K., Wei, S., Liu, B., Meng, S., & Long, C. (2015). Ethnobotanical study on medicinal plants used by Maonan people in China. *Journal of ethnobiology and ethnomedicine*, 11(1), 1-35.
- Huang, C. (2003). Reflections and Prospects: The 2002 Guangxi Vocal Symposium. *Southern Literary Circles*, (02), 65-66. doi: CNKI:SUN:NFWT.0.2003-02-019.
- Huang, M. (2018). Overview of the 60-year development of Guangxi music and dance art. *Journal of Guangxi Normal University (Philosophy and Social Sciences Edition)*, (05), 46-50. doi:10.16601/j.cnki.issn11002-15227.12018.16605.16008.
- Huang, M. (2018). Overview of the 60-year development of Guangxi music and dance art. *Journal of Guangxi Normal University (Philosophy and Social Sciences Edition)*, (05), pp. 46-50. doi:10.16601/j.cnki.issn11002-5227.2018.05.008.
- Leet, M. (2023, January 2023). Guangxi Zhuang Autonomous Region. Chinafolio. <https://chinafolio.com/provinces/guangxi-province>
- Li, K., Liu, M., Li, J., Dong, A., Zhou, Y., Ding, Y., & Shao, Y. (2019). Genomic characterization of a novel HIV-1 second-generation recombinant form (CRF01_AE/B) from men who have sex with men in Guangxi Zhuang autonomous region, China. *AIDS research and human retroviruses*, 35(10), 972-977.
- Li, S. Z., Zhou, Z., Nie, H. K., Zhang, L. F., Song, T., Liu, W. B., ... & Tao, S. (2022). Distribution characteristics, exploration and development, geological theories research progress and exploration directions of shale gas in China. *China Geology*, 5(1), 110-135.
- Ninghua, W. & Ziwei, Y. (2019). Teaching and Practice of Musical Ethnographic Writing Paradigm. *Chinese Music*, (02), 57-64. doi:10.13812/j.cnki.cn11-1379/j.2019.02.007.
- Oun, M. A., & Bach, C. (2014). Qualitative research method summary. *Qualitative Research*, 1(5), 252-258.
- Pen-Yeh, T. (1989). Structural elements in the music of Chinese story-telling. *Asian Music*, 20(2), 129-151.
- Wang, C. Z., Su, M. J., Li, Y., Chen, L., Jin, X., Wen, S. Q., ... & Li, H. (2019). Genetic polymorphisms of 27 Yfiler® plus loci in the Daur and Mongolian ethnic minorities from Hulunbuir of inner Mongolia Autonomous region, China. *Forensic Science International: Genetics*, 40, e252-e255.
- Wang, L., & Kantasiri, K. (2022). Arts Performance Communication of Guangxi Piano Music. *Journal of Positive School Psychology*, 6(8), 9423-9437.
- Yunyan, T., & Nicolas, A. (2021). The Development of Vocal Music of the Zhuang Ethnic Group in Hongshui River Basin, Guangxi Province, China. *Specialis Ugdymas*, 1(42), 190-198.
- Zeng, C. & Huang, Y. (2017). Introducing the old to bring forth new songs-a study of Guangxi vocal works after the founding of New China to before the reform and opening up. *Art Criticism*, (20), 14-17. doi:CNKI:SUN:YSPN.0.2017-20-007.
- Zeng, C. & Li. (2020). Songs are advancing violently the study of vocal works in Guangxi since the reform and opening up. *House of Drama*, (17), 32-34. doi:CNKI:SUN:XJZT.0.2020-17-017.
- Zeng, C. (2020). *Research on the Singing of Guangxi Vocal Works in New China*. Guangxi People's Publishing House.

- Zhong, J. & Liu, R. (2013). Summary of 2012 China-ASEAN (Nanning) Music Week. *Art Exploration*, (02), 66-68. doi:10.13574/j.cnki.artsexp.2013.02.008.
- Zhuo, C. (2022). Effective value and practice of Guangxi folk music audiovisual resources. *People's Music*, (11), 78-81.

The Process of Transferring Knowledge through Grand Songs Among the Dong Ethnic Group in Southeast Guizhou, China

Hang Cao¹, Narongruch Woramitmitree²

¹ Ph.D. Student, College of Music, Mahasarakham University

² Asst. Prof. Dr., College of Music, Mahasarakham University

Correspondence: Narongruch Woramitmitree, College of Music, Mahasarakham University, Kantharawichai, Maha-Sarakham, 44150, Thailand. E-mail: narongruch.w@msu.ac.th

Abstract

This study used the qualitative research method. The objectives were to describe the process of transferring knowledge through the grand songs of the Dong ethnic group in Southeast Guizhou, China. There are three main informants. The research process includes literature reviews, field investigation methods, and interview methodologies. The study's results show that people not only learn songs but also gain education, enjoyment, history, and personality from singing. Moreover, the Grand Song, with its important academic value, unique artistic value, elegant style, and green ecological economic value, has become a symbol of the integration of ethnic culture.

Keywords: Grand Song, Dong Ethnic, Transferring Knowledge

1. Introduction

"Dong Zu Da Ge" is choral music of the Dong ethnic group in China. This unique folk music is distributed in the southeast of Guizhou Province and Sanjiang County of Guangxi Province, and its core area is in Liping County, Congjiang County, and Rongjiang County in the southeast of Guizhou Province. The local Dong people call this traditional form "Ga Lao" in their dialect. It is called in Chinese: "Dong Zu Da Ge," where "Dong Zu" is the Chinese pronunciation of "Dong ethnic group" and "Da Ge" is the Chinese pronunciation of "Grand Song." Dong Zu Da Ge was added to the United Nations Educational, Scientific, and Cultural Organization's Intangible Cultural Heritage of Humanity list, and the Commission designated it as the "grand song of the Dong ethnic group" (UNESCO, 2009). This is a type of unique and regional folk music that is popular in Guizhou's southeast. Since the choral music of the Dong ethnic group was discovered by musicians in the 1950s, it has steadily gained worldwide recognition for its own musical beauty.

There is a common saying among the Dong people: "Food nourishes the body, and songs nourish the soul." It can be seen that Dong people treat singing and eating equally, and "singing" is an indispensable part of the Dong

family's survival. In the early 1950s, Xiao Jiaju (1909–1996) and Xue Liang (1917–1999) first discovered "Dong Zu Da Ge" during their fieldwork in Liping County, Guizhou Province. Later, they introduced the ancient folk music to people for the first time in the form of words, pictures, and videos. (Pan Yonghua, 2012) Following that, it drew a lot of interest from the music business, both at home and abroad. More and more people are involved in the research of the Grand Song, and it is still a topic of concern today. It is uncommon to encounter creative choral music without accompaniment or director, such as Grand Song, which has significant scholarly and appreciative worth. "In the study of multi-voice folk songs of various ethnic groups in China, musicologists have spent the greatest time studying the Grand Song, which also highlights the unique status of the Grand Song in China's multi-voice folk songs on the other hand" (Zuyin, 2003). Over the years, musicians have recorded, edited, and analyzed the Grand Song in depth and achieved remarkable results. This shows the status of the Grand Song in Chinese folk music culture and academic research. With the influence of modern technology and media in today's multi-cultural society, the traditional customs of Dong ethnic areas, as well as the functions and era values of the Grand Song, have undergone profound changes (Tianrao, 2019). On the one hand, contemporary life raises the Dong people's income and living standards while also expanding their communication channels and professional opportunities with the outside world. In contrast, certain traditional cultures face the unpleasant dilemma of being displaced and forgotten.

China unveiled its "No. 1 central document" for 2022 on Feb. 22, outlining key tasks to comprehensively push forward rural vitalization this year (GOV, 2022). Eight sections, including "promoting rural construction steadily," were highlighted. According to the important strategic layout, the researcher believes that the unique "Grand Song" art can be taken as one of the supports for the revitalization of Dong villages in southeast Guizhou. The Grand Song is the embodiment of the national spirit and the representative of Dong music culture (Jiashuang, 2011). The revitalization of "Grand Song" is critical to "consistently promoting rural construction." An in-depth study of the traditional culture, musical characteristics, and existing situation of the Grand Song is an intrinsic requirement for the revitalization of the Grand Song. In the process of research, The following points need to be studied about transferring the knowledge of "grand song" to the next generation, based on the data from fieldwork.

2. Review literature

The research areas for the Grand Song in this dissertation were selected from the Qiandongnan Miao and Dong Autonomous Prefecture, located in the southeast of Guizhou Province. They are Zhaoxing Dong Village in Liping County, Xiaohuang Dong Village in Congjiang County, and Zaidang Dong Village in Rongjiang County. As the southeast of Guizhou is a place inhabited by ethnic minorities, there is a special place name here: "Miao and Dong Autonomous Prefecture in the southeast of Guizhou". As the saying goes, "soil and water nurture people." It is because of the unique natural environment and cultural environment in the southeast region of Guizhou Province that such honest, optimistic, and kind Dong people are bred. According to the research objectives of the thesis, the researcher chooses "three Dong villages" among the three counties under the jurisdiction of Miao and Dong Autonomous Prefecture in southeastern Guizhou Province as the research site. The following is an introduction to these three places:

1) Zhaoxing Dong Village, Liping County is the largest county with the largest area and population in the Miao and Dong autonomous prefectures in southeastern Guizhou Province, as well as the county with the largest population of Dong people in China. It is the birthplace of Dong culture and has the reputation of being "the hometown of Dong people." Zhaoxing Dong Village is in Liping County, covering an area of 180,000 square meters with more than 1,100 households and more than 6,000 residents. It is one of the largest Dong villages in China and is known as "the first village of Dong Township." Zhaoxing Dong Village is most famous for its Gu tower group, which is the only one among the Dong villages in China. It has been recorded in the Guinness Book of World Records and is honored as "the hometown of Gu tower culture and art." village in the five groups, together with five Gu towers, five flower bridges, and five stages. The five Gu Towers vary in appearance, height, size, and style. Zhaoxing is not only the hometown of Gu Tower but also the hometown of song and dance. During festivals or when guests are near the door, Dong people gather at the Gu tower and Sax altar to hold ethnic recreational activities such as "stepping on the song hall" and "carrying officials."

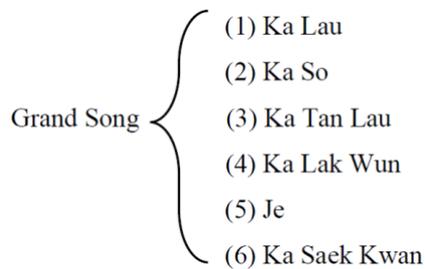
2) Xiaohuang Dong Village, Congjiang County is adjacent to Rongjiang County in the north; Libo County and Huan Jiang County in Guang Xi Province in the west; Rong Shui County in Guang Xi Province in the south; and Liping County and San Jiang County in Guang Xi Province in the east. The county is 94 kilometers long from east to west and 77.5 kilometers wide from north to south, with an area of 3225 square kilometers. Xiaohuang Dong Village is in Congjiang County, more than 20 kilometers away from Congjiang County. It is known as the "hometown of Grand Song." Xiaohuang Village has more than 600 households and more than 3,000 residents, all of whom are of the Dong ethnic group. This is "the hometown of poetry, the sea of songs." Not only can everyone sing, but they love to sing. There are more than 20 official troupes in the village, with more than 1,000 members. A stream slowly flows through the village, which is surrounded by green mountains and hundreds of wooden buildings with suspended legs leaning against mountains and rivers, forming a Dong Village with mountains, water, and songs all blending together. Xiaohuang Village, deep in the mountains, has limited communication with the outside world. The whole village has maintained its primitive style and a strong ethnic atmosphere (Qifang, 2007).

3) Zaidang Dong Village, Rongjiang County is located in the center of the three provinces of Hunan, Guizhou, and Guangxi. Liping County, Congjiang County in the east, Lei Shan County, San Du County on the west border, Jian He County in the north, and Li Bo County in the south the county has covered an area of 3,316 square kilometers since ancient times. Rongjiang has "Southeast Guizhou Province Key," the first area of Miao Xinjiang, Zaidang Dong Village is in Rongjiang County, Guizhou Province, 26 kilometers away from the county seat. The village has 265 households and 1277 people, all of whom are members of the Dong ethnic group. The Dong people living here belong to one of the six branches of the Dong people in Rongjiang. The Dong buildings here are also very distinctive, among which the "Gan lan" building embodies the traditional architectural style of the Dong people. There is a Gu tower of the Dong ethnic group in the village. It was built during the reign of Emperor Qian Long of the Qing Dynasty. It is grand in appearance and unique in shape (Government of Southeast Guizhou, n.d.).

The Miao, Dong, Han, Shui, Yao, Zhuang, Buyi, and Tujia nationalities live in the Qiandongnan Miao and Dong Autonomous Prefecture. For a long time, the Miao and Dong ethnic groups, as the main body of a multi-ethnic friendly and harmonious social form, have laid the groundwork for ethnic art's prosperity. Natural landscapes represented by terraces, mountains, and hot springs; folk skills represented by batik, silver jewelry, and paper cutting; characteristic buildings represented by Gu towers and stilted buildings; delicious dishes represented by fish in sour soup and glutinous rice; and folk music represented by the Flying Song of the Miao ethnic group and the Grand Song of the Dong ethnic group jointly build a colorful cultural environment in southeast Guizhou.

Take folk music as an example. There are four kinds of folk music that are rated as national intangible cultural heritage. They are: "the grand song of the Dong ethnic group" and "the pipa song of the Dong ethnic group," popular in Congjiang County, Liping County, and Rongjiang County; "the lusheng music of the Miao people with awn popular in Danzhai County; and "the miao multi-voice folk song" and "the miao popular in Jianhe, Taijiang, and Leishan counties. Moreover, people of all ethnic groups are also happy to sing their own songs in their daily lives. For example, the Han people living in Danzhai, Jinping, and Shibing counties sing folk songs and dittys, while those in Sansui County sing ritual songs. Miao people in Kaili City and the counties of Danzhai, Majiang, Leishan, Jianhe, Taijiang, Jinping Shibing, Shantou, Zhenyuan, and Huangping can sing the "flying song" and the "toasting song," while Shui people in Leishan County can sing "Xuji," a monophonic song (Chinese Folk Song Integration Editorial Committee, 1995).

According to the song's style, function, singing age, content, singing style, and folk customs, the Grand Song has been classified by various scholars in different ways. The classification is from Zhang Zhongxiao (2010).



1) Ka Lau: "Ka" is "Ge," and "Lau" can be translated as "Da." Therefore, "Da Ge" is the literal translation inversion of "Ga Lao."

2) Ka So means "sound song" in Chinese. "So" means sound, breath, and voice. The main purpose of this kind of song is to show off the beauty of the tune and the sound of the chorus.

3) Ka Tan Lau: Translated into Chinese as "narrative song." According to the different forms of singing and the different structural characteristics and narration of the lyrics, there are two kinds: Ga Jin and Ga Jie Mu.

4) Ka Lak Wun: Translated into Chinese as "Children's Song," this refers to a multi-part song performed by a children's chorus.

5) Je: The Chinese translation of "Cai Tang song," that is, the folk collective etiquette activity of "singing and dancing in the right places."

6) Ka Saek Kwan: "Saek" is "blocking," "trapped" is "road," so the Chinese translation is "Road Blocking." The Chinese pronunciation is "Lan Lu." Lan Lu Song is a cluster exchange activity in which the main team greets visitors at the village gate at the intersection according to the etiquette of the song sung.

Xiaoyin, (2007). stated in his thesis, "Dong Ethnic Group Da Ge: Ritual and Poetic Imagination of Ethnic Groups in the Perspective of Aesthetic Anthropology," that, from the perspective of anthropology, this way of performing music has a strong color of ritualization. The ritual spirit of Da Ge serves the function of uniting ethnic groups and integrating social culture in Dong village communities. It is also the process of socialization through aesthetic education in the growing process of Dong Village children from the standpoint of cultural inheritance. In the Dong culture, the Da Ge ceremony has the power to transcend concrete, realistic demands and elevate people to a poetic and aesthetic clarity of pure selflessness. This wonderful work of sound art shows the Dong people's extraordinary imagination and creative ability with sound.

Chen's, (2007) master's thesis is "Research on the Contemporary Communication Mode of Guizhou Dong's Da Ge." Based on some methods and theories of communication, combined with the results of a field investigation and its social background, the paper conducts an in-depth study on the communication network of Dong's Da Ge, namely, interpersonal communication, organizational communication, and mass communication, by means of the table method and the graphic method.

3. Method

The researcher chose the Southeast Guizhou Province as the research area for the Grand Song of Dong ethnic group and used qualitative research methods. Since this area is the birthplace of Grand Song, the researcher chose key informants in the area as research clues. Therefore, the study is conducted according to the following steps:

3.1 Research site

Located in the southeast of Guizhou Province, China, the Xiaohuang Dong Village of Congjiang County, the Zaidang Dong Village of Rongjiang County, and the Zhaoxing Dong Village of Liping County.

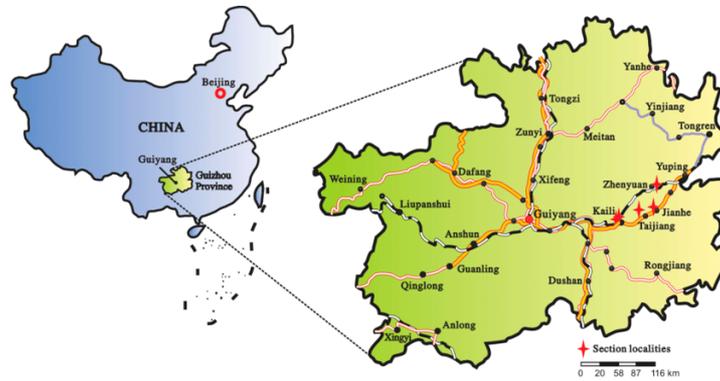


Figure 1: Map of Guizhou Province, China.

Source: https://www.researchgate.net/figure/Map-of-China-left-showing-location-of-Guizhou-Province-and-right-locations-of-the_fig8_305215792.

3.2 Key informants

According to the research objectives, the researcher selected three groups of people to interview in the field. They are key informants, casual informants, and general informants. The following selected criteria and selected personnel will be presented. The criteria for selecting key informants are:

- 1) He or she was a local, born and raised in Dong Village.
- 2) He or she knows the culture and development of the Grand Song.
- 3) He or she is the Grand Song's national representative heir of national intangible cultural heritage projects announced by China's Ministry of Culture.
- 4) He or she is older and has many years of experience in teaching the Grand Song.

Based on the above selection criteria, three key informants were selected, including Ms. Pan Sa Yinhua, Mr. Jia Fuying from Xiaohuang Dong Village, and Ms. Hu Guanmei from Zaidang Dong Village. (See Figs. 2–4.)



Figure 2: Inheritors of National Intangible Cultural Heritage: Ms. Pan Sa Yinhua.

Source: Cao Hang, (2022)



Figure 3: Inheritors of National Intangible Cultural Heritage: Mr. Jia Fuying.

Source: Cao Hang, (2022)



Figure 4: Inheritors of National Intangible Cultural Heritage: Ms. Hu Guanmei

Source: Cao Hang, (2022)

4. Results

The Grand Song itself has a vast and comprehensive "library" of songs reflecting levels of technical difficulty and different cultural depths, which provides clearly targeted material for step-by-step teaching (Shunqing, 2011). In the long missionary process, the singers have formed a set of stable singing teaching modes that are centered on word-of-mouth transmission and practical interaction and provide the possibility for everyone in the community to effectively master and sing songs. In the Gu Tower duet, the chorus interacted. Skills, in the form of invisible and intentional improvement, such as Grand Song, are passed down in such an environment. In 2006, Grand Song was included in the first batch of the national intangible cultural heritage list. In 2009, Grand Song was listed on UNESCO's Representative List of Intangible Cultural Heritage of Humanity. The judges of the UNESCO Intergovernmental Committee for the Protection of Intangible Cultural Heritage believe that the Grand Song is "the voice of a nation and a human culture." In the list of 4 batches of representative inheritors of national intangible cultural heritage projects published by the Ministry of Culture, there are 6 national representative inheritors of Grand Song. They are Wu Pinxian, Wu Guangzu, Qin Meihao, Wu Renhe, Pan Sa Yinhua, and Hu Gua. The Dong

people affectionately call them "Song Masters." This is a respectful title for a skilled singer. Song masters have a high reputation in the folk villages of the Dong ethnic group. Besides learning to sing from song masters, people will entertain them at birth, marriage, birthday celebrations, and funerals. Because the song masters are knowledgeable and intelligent, inviting them to attend social gatherings and ceremonies will add luster to the host family or even the whole village. In addition, song masters act as teachers in ethnic groups and teach students to sing the Grand Song through "oral instruction." Some well-known singers are chosen by the villagers and then named glorious inheritors by the government (CICHDM, 2018). The transmission of the Grand Song has evolved from "transmission within the family" and "transmission from the elders" to the coexistence of "transmission with school" today. However, no matter what changes have taken place in the inheritance mode of the Grand Song, the inheritance of the Grand Song cannot be separated from the participation of "song masters." (Yonghua & Hongyan, 2013) "Song master" is the connection and bridge that connects the Grand Song to the present day. To understand the inheritance and connotation of the Grand Song, it is necessary to understand each link of the "song master" teaching singing, the way of thinking used by the "song master," the aesthetic concept of the "song master" mastering the chorus voice, and to investigate.

There is a song circulating in the Dong ethnic area: "Trees have roots; springs have sources; ancient things have music; Han people have written history; Dong people have no written language but have disseminated it orally." In the specific application of Grand Song, it has the function of "civilizing customs" and "inheriting deeds." The transmission mode of "word-of-mouth" in Dong ethnic groups replaces words and documents to inherit Dong's history, culture, and stories. The essence of the Grand Song includes the recording and appraisal of life experience, ethics, and an ethnic legacy passed down through generations of Dong people, which is one of the primary reasons why the Dong cannot remain without it.



Figure 5: Children in Xiaohuang village with the Song master in summer.

Source: Pan Yingxiang, (2022)

Figure 5: In summer, when the temperature is high, the clothes are made of thinner materials. The children's clothes are mainly white, and the singers' clothes are mainly dark. The elderly person in the picture is Ms. Pan Sa Yinhu, an intangible cultural heritage inheritor. From the looks of all the people, this corner of the room was full of joy. Most of the Dong ethnic communities are in remote mountains and rivers; before the founding of modern China, communication with the outside world was extremely difficult, both in terms of transportation and network. Therefore, "singing behavior," as a necessary life skill for everyone in the ethnic group, is valued by people: children here immerse themselves in the singing environment created by their parents and elders in the village from the beginning of singing. In addition, from the beginning of speaking, children are required to follow the village's highly respected "song master" to systematically learn Dong songs. Students will also start in beginner classes and move on to different classes as they grow older. Therefore, although there is no school in the Dong village, the "singing class" of the Dong people is equivalent to the role of the "student group." The "song master" of the Dong people assumes the responsibility of teaching everyone and thus acts as a teacher. In this way, students learn not only singing skills but also, more importantly, the wisdom of the Dong ethnic group, which is carried in songs. They are transferring the knowledge via the "grand song" for the example as follows: In primitive society, humans' cognitive ability and transformation ability toward nature are limited, so people are full of awe for all kinds of mysterious forms and natural phenomena in nature. Dong people use concrete language

to describe the unknown with awe in their hearts. For example, the Dong ethnic group's work is "Zu Gong Shang He," which means "ancestors looking for a place to live." It seems to "clearly" describe the migration process of *our ancestors* (Guihua & Guanghua, 2015).

*The ancestors are bitter,
And fled the world with his family,
In search of fields and fields,
Search the ends of the earth;
Up to the Banyan River there is no shelter,
Even Jiubao could not settle down;
The Sitang is a good place.
Thousands of acres of fertile land water,
Dragon hui Baodian people auspicious,
The seas run dry and the rocks crumble
We're not going anywhere
Let's make it this place*

The song describes in detail why a new home should be explored and how fields and water should be found. The reason why the ancestors of Dong Village finally chose Sitang as their home is that there are excellent fields and water sources nearby. Through the cordial descriptions of people and events, the joy of finding a new home for the ancestors is reflected, as is the gratitude and love of the people for their ancestors. In addition to describing the historical origin of the ethnic group, the theme of describing, understanding, and transforming nature is also one of the important contents of Grand Song. Some scholars have vividly called the Grand Song "the culture of cicada sound" (Dingguo & Minwen, 2005). Thus, Dong people gain enlightenment from "cicadas": in the widely circulated "Cicada's Song," people imitate cicadas' sounds, trying to understand the nature of the insects, gradually opening the art of the unknown, thus forming a lot of imitations of the sounds of nature, for example, "Small Sheep", "Little Squirrel", "Frog Songs", and so on. The music uses many onomatopoeia words to imitate the sounds of animals. By using this method, children can quickly recognize the characteristics of animals and learn some life philosophy behind the behavior of animals through the stories described in the songs. Take the

*lyrics of the ant song:
Little ant, little ant
A carry, can not carry
They carried it as fast as flying
Even lofty mountains can move when the hearts of all are united
Good idea, little ant
The heart can put all kinds of difficulties
Drums beat for victory (Yong, 2003)*

At first glance, the song is about ant behavior, but more importantly, the researcher uses anthropomorphic figures of speech to describe the group behavior of ants as "uniting as one, united struggle." Under the educational concept of "teaching through entertainment," the Dong people use the form of the grand song as the medium to skillfully combine the life truth with songs, leading children not only to know nature but also to cultivate the ecological concept of loving and protecting nature. Educate people to love the land on which they live, cherish the achievements of their ancestors' struggles, and correctly face the hard-won life today.

5. Conclusion

Following a description of the Grand Song of Dong ethnic group's social function and historical significance in Southeast Guizhou, China, the researcher has learned that: The Dong people have formed an indissoluble bond with Grand Song since the day they were born. The alternation of cold and heat in nature symbolizes the endless life of the Dong people. The simplicity and tranquility of the buildings show the diligence and sincerity of the Dong people, while the harmony and melodies of Grand Song have an influence on the native accent and feelings of the Dong people. On the one hand, singing provides them with education, entertainment, socialization, and personality development. Moreover, the Grand Song, with its important academic value, unique artistic value,

elegant spread, and green ecological economic value, has become a symbol of the integration of ethnic culture. Grand Song is the treasure of the Dong people, and the Dong people are the guardians of Grand Song. With the increasing prosperity of the tourism industry, the government has built a bridge for the people of Dong Township to communicate with travelers. The Grand Song has attracted attention from all over the world. They also promoted communication among a plurality of ethnic groups and brought a new economic growth point to Dong Township.

6. Discussion

Firstly, in terms of "development," the researcher put forward a new name and set of characteristics after sorting out the ways that scholars divide the period, especially the "revival stage" of Grand Song in the new era. Secondly, in terms of "classification," after summarizing the text subjects of about 300 pieces of music, the researcher made a comprehensive analysis together with previous research results and opinions from fieldwork interviews, examined the classification method of the Grand Song, and analyzed the characteristics of each type.

After the establishment of the People's Republic of China, especially in the context of the implementation of "nine-year compulsory education," schools were set up in the communities of the Dong ethnic group, and children of school age began to receive education under the unified leadership of the state. The Grand Song was arranged in the Second Classroom as a characteristic course, and song masters were hired as teachers. It found a happy medium between "popularizing advanced scientific knowledge" and "passing on excellent national culture." Driven by the policy of "integrated development of urban and rural areas," most villages have carried out cultural tourism projects based on grand song, giving full play to the value of grand song.

References

- Chen, X. (2007). Research on the Contemporary Communication Mode of Guizhou Dong's Da Ge. Master's degree thesis, wuhan music institute).
- Chinese Folk Song Integration Editorial Committee. (1995). *Guizhou Volume of Chinese Folk Songs*. China ISBN Center.
- GOV. (2022). *Comprehensively promoting key work of rural revitalization*. http://www.gov.cn/xinwen/2022-02/22/content_5675041.htm
<https://kns.cnki.net/KCMS/detail/detail.aspx?dbname=CMFD2007&filename=2007119279.nh>
- Jiaju, X. (1958). *Preface. Organized by Guizhou Provincial Federation of Literature and Culture*. Guizhou People's Publishing House.
- Jiashuang, G. (2011). *Typology of Dong Gu Tower architecture*. Central South University of Forestry and Technology.
- Liang, X. (1953). A Brief Introduction of Dong Folk Music. *Music of the People*, (00), 40-44.
- Qifang, Z. (2007). *Field Investigation and Educational Value Analysis of Xiaohuang Grand Song*. Southwest University.
- Shunqing, Y. (2011). *Diversified exploration of Guizhou Ethnic Culture protection mode*. Education and Culture Forum.
- Tianrao, H. (2019). *Research on the Security Function of informal Norms*. People's Public Security University of China.
- Xiaoyin, J. (2007). Dong Ethnic Group Da Ge -- Ritual and Poetic Imagination of Ethnic Group in the perspective of Aesthetic Anthropology. *Journal of Southwest University for Nationalities (Humanities and Social Sciences Edition)*, (02),47-48.
- Yonghua, P. (2012). *On The Morphological Characteristics of Grand Song music and the Thinking Basis of its Formation*. Central Conservatory of Music.
- Zhongxiao, Z. (2010). *Collection of Guizhou Ethnic Minority Music Culture - Dong Ethnic Group*. Guizhou People's Publishing House
- Zuyin, B. (2003). The unique position of Grand Song in Chinese multi-voice folk songs. *Journal of Guizhou University (Art Edition)*, (02),1-5.



The Effect of Lego Robotics Coding on Primary School Students' Academic Achievement and Attitudes of Science

Orçun Bozkurt¹ N. G. Pasabeyoglu²

¹ Hatay Mustafa Kemal University. Email: orcunbozkurt@gmail.com

² Ted Hatay College

Abstract

The current research aims to examine the effects of LEGO robotics coding on primary school students' academic achievement and attitudes toward science courses. A pretest-posttest control group design was used in the study and the participants joined the study randomly divided into control and experimental groups. While the control group was trained with the traditional method, the experimental group was trained via the constructivist method. To determine the effects of two different teaching methods on the student's success and attitudes, the science lesson attitude scale was applied in a pre-test and post-test form. The study group consists of 33 students who were randomly selected. Through the study, we concluded that LEGO robotics coding provides more meaningful and effective learning on primary school student's academic achievement and attitudes when compared with the control group.

Keywords: Lego Robotics, Academic Achievement, Attitude to Science

1. Introduction

Current rapidly changing science and technology applications closely affect the developments in various fields. This change revealed the need for innovation in the field of education as well, and the use of education-oriented robotic kits has become more widespread. Böylece robotik kitlerin bilgisayar aracılığıyla kodlanmasının tüm öğrenciler için ilgi çekici bir uygulama olması ve aynı zamanda onların problem çözme, yaratıcı düşünme ve bilişimsel düşünme becerilerini geliştirmesi beklenmektedir (Yolcu & Demirer, 2017).

The Science Lesson can be defined as the ways of acquiring knowledge that constantly develops and renews itself based on the regular knowledge that people have acquired about themselves and their natural environment (Morgil, 1990:21). Individuals who learn science gain the ability to understand and assimilate the events occurring around their environment more easily. Science education is also thought to be a necessary and important function to keep up with the rapid developments and innovations in the field of science and technology (Hançer et al., 2003).

Thanks to science education, likely to be defined as "the education of the events that arouse curiosity, surprise, and the events going on around the individual" (Gürdal, 1992), we can notice and define the events around our environments in a better way. It is crucial for a person to have a good science education to realize that the events

in his/her environment have something to do with science and to understand that he/she is a whole with science (MEB, 2016). For this reason, science education is considered to be taught in the most appropriate way to suit the interests and needs of people. When science is taught in an easy and understandable way as in nature, it provides individuals with the knowledge and also the ability to find solutions to the problems encountered in the course of life. Likewise, teaching by doing, and experiencing is argued to be important and more meaningful for the students (Langdon et al., 2011). While teaching science education, students should be asked to ponder the problems and solutions that they come across in daily life. Students should also be encouraged to cooperate and work in groups. The teacher should also be able to teach according to the current developments and be updated on changes in the field of education. The method of memorizing directly without questioning the information is insufficient for the education of the current age. For this reason, the students should be raised questioning and researching the information, assimilating and making sense of it, and having the ability to solve all kinds of problems. The new approaches are also of great importance for raising these individuals (Hamurcu et al., 2001).

Despite the technology applications in education cannot solve all the problems experienced, it is thought to be important for increasing the level of education. Thus, The Ministry of National Education of Turkey made changes in the education programs in 2004 and the process of integrating technology with education was started. Through this process, the traditional approach was abandoned, and the constructivist approach was preferred, technology has been more extensively used for all activities, and students have also been the focus of these activities (Canbulat & Yüce, 2018). With Turkey's adoption of the technology-based economy model, the strategic importance of STEM (Science, Technology, Engineering, Mathematics) has emerged in terms of international competitiveness.

STEM education, described as the result of the cooperation and performance of various fields working in an integrated manner, is also considered as the work of these fields together in relation to any kind of problem. Students who carry out activities that are adopted this approach utter that working with the principles of different fields in problem-solving is similar to collaborating with real-life professionals. Therefore, it is argued that STEM education conveys interdisciplinary cooperation in practice to students by modeling (Aslan-Tutak, et al., 2017). STEM education, through the holistic approach based on interdisciplinary relations and interaction, fulfills the functions of raising individuals who are open to research, design, problem-solving, cooperation, and communication in education that deals with the mentioned fields not separately, on contrary, together. Fusing the fields of science, STEM education aims to harmonize the contents with each other, technology and mathematics, and to provide students with the ability to solve problems and make connections between the contents they learn and real life (Buyruk & Korkmaz, 2016). Thanks to STEM education, particularly through the interdisciplinary integration approach, curiosity, and questioning skills that are already present in people but have become atrophied over time are revived, and an educational approach that tries to develop expertise to transform the knowledge is adopted via different disciplines (Wang et al., 2011; Altunel, 2018).

In STEM education, subjects are presented to students in connection with real life. Hence, by combining disciplines, a complementary approach is created, and a meaningful link related to learning for students is served. The student's concentration on complex problems are though to have a positive effect on their success. Design and engineering-oriented activities not only contribute to the learning of other disciplines but also likely support the development of students' problem-solving, creativity and communication skills (Wang et al., 2011; Yılmaz, et al., 2017).

STEM education focuses on four fundamental disciplines. However, engineering and technology fields are more prominent. While all of these disciplines can be combined, an approach based on combining only two is also accepted (Yenilmez & Balbağ, 2016). Through STEM education, responsibility is instilled in students, on the other hand, the awareness of that making mistakes is inevitable and natural is also emphasized. While STEM supports students' creative and innovative ideas, it also orients the children to an education integrated with science, engineering and mathematics technology, starting from an early age. The understanding of STEM, focusing on creativity, cooperation, communication and entrepreneurship, is based on principles that raise collaborative, entrepreneurial and creative individuals (Keçeci et al., 2017). One of the crucial aspects of STEM is considered to be robotic coding. With the current development of robotic coding programs, it is observed that more research has

been made on the coding of robotic kits. Such programs are thought to make coding easier for younger students to learn, owing to their visual environment and drag-and-drop code block structures (Aytekin et al., 2018).

It is stated that studies carried out with robotic applications have become widespread in recent years and Lego-based robotic environments are widely used (Costelha & Neves, 2018).

Çakır and Güven (2019) reports that students actively find the opportunity to embody science concepts with robotic coding activities and carry out such activities in an enjoyable way can be more efficient for improving students' attitudes toward science lessons. Silva (2008) states that robotic activities increase students' motivation and are beneficial for their personal development. Likewise, the study of Çakır and Güven (2019) revealed that robotic coding activities are effective in concretizing science concepts and increasing their attitudes. Heafner (2004) states that the use of technology in lessons enables students to focus on learning and increases their learning motivation. Additionally, robotic coding is also argued to increase students' programming skills and motivation and offers many opportunities for their development (Behrens et al., 2010; Mayerova, 2012).

The current research aims to examine the effects of LEGO robotics coding on primary school students' academic achievement levels and attitudes towards the science course. Accordingly, answers to the following questions were sought.

1. Does conducting the science course with LEGO robotic coding increase the academic success of primary school students in a statistically significant way?
2. Does conducting science lessons with LEGO robotic coding increase primary school students' attitudes toward science lessons in a statistically significant way?

2. Method

2.1. Research Pattern

In the study, a pretest-posttest control group design was used. The participant students were randomly chosen and divided into control and experimental groups. While the control group was trained with the traditional method, the experimental group was trained with the constructivist method. The research has two dependent variables, academic achievement and attitude toward science. The teaching methods applied throughout the research process form the independent variables. The experimental group was taught via LEGO robotic teaching technique which was based on a student-centered method, on the other hand, the control group was taught via a lecture presentation which was based on a teacher-centered method.

To determine the effects of two different teaching methods on the success of the students and their attitudes towards the science lesson, an academic achievement test consisting of the knowledge and comprehension level of the cognitive domain and a science lesson attitude scale were applied to all the participant students via a pre-test and post-test form. The subject of "Force and Motion" was taught to the experimental group in the innovation class at the school, while the subject of "Force and Motion" was taught to the control group by direct expression and presentation. Pre-test and post-test applications were fulfilled by using SCAAT (science course academic achievement test) and SCAS (science course attitude scale).

2.2. Working group

The study group was randomly formed by 17 participant students and the control group by 16 participants.

2.3. Data Collection Tools

An Achievement Test (SCAAT) and a Science Attitude Test (SCAS) were used to collect the data in the research.

2.4. SCAAT (Science Course Academic Achievement Test)

While SCAAT was being developed, the curricula of the 4th-grade primary school on "force and motion" were examined, the achievements that students are already supposed to know were determined, and a 40-question-item test was formed. 4 classroom teachers and 3 science teachers were interviewed on the items, and accordingly, 7 question items were dismissed from the test by consensus as they were not to be suitable for the level of the students. After analysis of the remaining 33 questions, another 4 question items were also eliminated and the total number of question items was reduced to 29 due to their low validity. The KR-20 value of the achievement test was observed as 0.88 which was a valid level.

2.5. SCAS (Science Course Attitude Scale)

SCAS, developed by Edge and Balçı (2012), consists of 12 items, a 5-point Likert-type scale. Scale options are "Strongly Agree", "Agree", "Moderately Agree", "Disagree", and "Strongly Disagree". The reliability of the scale is 0.83, which is regarded as valid for reliability.

2.6. Analysis of Data

Item analysis was performed for the achievement test, and the question items to be removed and the reliability coefficient of the test were calculated. The comparison of the scores of the two classes was analyzed with the independent group t-test, while the comparison of the first and second measurements was analyzed with the dependent groups' t-test.

2.4. Experimental Study

The subject of "Force and Motion" in the science lesson was taught by using coding and lego robotics for the experimental group. The student was first informed that they would learn the topics about "force and motion" such as swinging, turning, changing direction, acceleration, and deceleration, and the lesson was started with "scratch" in coding. Scratch 3.0, a programming tool created for children over eight (8) years old, consists of three parts. In the first part, the character was created, in the second part, the commands were written, and those commands were activated in the last part. The motion types were learned with the codes given to the videos and animations created. Then, m-block coding studies were carried out with the students. M-block is a programming software designed for the purposes of the STEM education system. With mblock, the subject of "force and motion" was studied by giving complex textual commands (mblock3,mblock5).

Code.org is based on object-oriented coding and provides drag-and-drop command execution. In the scenes of "ANGRY BIRD AND ZOMBI PLANTS", the types of force movements were also examined. After each successful task, they moved on to the next task and completed the tasks they had coded. The subject is also reinforced with LEGO WEDO. Lego wedo is a set that enables children to develop in the fields of science and provides engineering and coding experience with the created projects. The smart brick consists of motor, motion, and training sensors. A group of sumo wrestler robots were made by the experimental group with the LEGO WEDO set.

Apart from this, their movements were observed by making air, land, and sea vehicles. Lifting force was learned with a set of simple machines. Additionally, creativity and engineering skills have been developed with building sets. While sumo wrestling is made with Mbot robots, pushing and pulling forces were studied once again. It was taught to stop when they come across mbot robots when they are at the same speed, and when they are one after another, they accelerate with the effect of pushing. With robots called "Botto", the movement type of changing direction on the map has also been reinforced. The rotational movement was observed with the aircraft and helicopter propellers. The swinging motion was studied with simple machines and pendulums. During all these studies, the experimental group learned by having fun, as they already took an active role in the process.

3. Findings

3.1. Testing Equivalence of the Groups

The Independent groups t-test was applied to the equivalence test of the experimental and control groups according to the pre-test results. The results of the related test are seen in Table 1 below.

Table 1: Testing the Groups Equivalence

		n	Average	ss	t	p
Science Attitude - Factor 1	Experiment Group	16	4,13	0,97	-0,919	0,365
	Control Group	17	4,36	0,43		
Science Attitude - Factor 2	Experiment Group	16	2,85	0,42	2,401	0,023*
	Control Group	17	2,53	0,35		
Science Attitude - Factor 3	Experiment Group	16	2,48	0,96	0,969	0,340
	Control Group	17	2,18	0,83		
Achademic achievement (Pre-Test)	Experiment Group	16	10,00	2,58	1,332	0,192
	Control Group	17	8,88	2,23		

*p<0,05

The results of the t-test on the comparison of the Attitudes and Achievement Scores for experimental and control groups are seen in the table above. Accordingly, the Science Attitude factor 2 score differs ($p < 0.05$) and the scores in the experimental group were higher than the average scores. However, there are no statistically significant differences in the other two sub-dimensions, which measures students' attitudes toward science lesson ($p > 0.05$).

3.2. Comparison of Pre-Test and Post-Test Results Within Groups

The table indicating the change in the pre-test and post-test measurements of the students in the experimental group is shown below.

Table 2: Comparison of Pre-Test and Post-Test Results of the Students in the Experimental Group

	Average	ss	t	p
Academic Achievement Test (Pre-Test)	10,00	2,582	-42,959	0,01*
Academic Achievement Test (Post-test)	25,63	1,408		
Science Attitude - Factor 1 (Pre-Test)	4,12	0,96	-1,852	0,08
Science Attitude - Factor 1 (Post-Test)	4,67	0,50		
Science Attitude - Factor 2 (Pre-Test)	2,85	0,42	-12,586	0,01*

Science Attitude - Factor 2 (Post-Test)	4,50	0,47		
Science Attitude - Factor 3 (Pre-Test)	2,47	0,95		
Science Attitude - Factor 3 (Post-Test)	4,83	0,66	-8,225	0,01*
*p<0,05				

The results of the t-test are seen in Table 4 above. According to the results, there is a statistically significant difference between the pre-test scores and the post-test scores of the students in class 4A from the academic achievement test ($p<0.05$). Accordingly, achievement test scores increased by 156% from 10.00 to 25.63. When the scores of the attitude scale were examined, no statistically significant difference was observed in the context of the first factor of the scale ($p>0.05$). But a statistically significant difference was observed in the context of the second and third factors ($p<0.05$).

The table indicating the change in the pre-test and post-test measurements of the students in the control group is shown below.

Table 3: The Pre-Test and Post-Test Results in the Control Group

	Average	ss	t	p
Academic Achievement Test (Pre-Test)	8,88	2,23		
Academic Achievement Test (Post-Test)	16,94	3,69	-18,998	0,01*
Science Attitude - Factor 1 (Pre-Test)	4,36	0,43		
Science Attitude - Factor 1 (Post-Test)	3,03	1,49	3,80	0,01*
Science Attitude - Factor 2 (Pre-Test)	2,52	0,35		
Science Attitude - Factor 2 (Post-Test)	2,84	0,98	-1,36	0,19
Science Attitude - Factor 3 (Pre-Test)	2,10	0,80		
Science Attitude - Factor 3 (Post-Test)	3,04	1,11	-3,19	0,06*
*p<0,05				

The results of the t-test of the control group students are shown in table 6. According to the results, there is a statistically significant difference between the achievement test pretest and post-test scores in the control group ($p<0.05$). Accordingly, achievement test scores increased by 91% from 8.88 to 16.94. In addition, when the attitude of the students in the control group was examined, a statistically significant difference was observed in terms of the first and third factors ($p<0.05$), While no statistically significant difference was observed in the second factor ($p>0.05$).

3.3. Comparison of Post-Test Results

The table indicating the results of the independent groups t-test of the experimental group and the control group is shown below.

Table 4: Comparison of Post-Test Results

	n	Average	ss	t	p
Science Attitude - Factor 1	Experiment Group	16	4,67	0,50	
	Control Group	17	3,03	1,49	4,15

Science Attitude - Factor 2	Experiment Group	16	4,50	0,47	6,12	0,01
	Control Group	17	2,84	0,97		
Science Attitude - Factor 3	Experiment Group	16	4,83	0,66	4,98	0,01
	Control Group	17	3,15	1,17		
Academic Achievement Test (Pre-Test)	Experiment Group	16	25,63	1,48	8,80	0,01
	Control Group	17	16,94	3,69		

*p<0,05

According to the results in Table 6, the attitudes and academic achievements of the experimental group toward science were higher than the control group ($p < 0.05$). In other words, the post-test results of the group taught with the LEGO coding method were higher than the group with the traditional method on the basis of all three scales.

3. Discussion and Conclusion

The current study basically focused on the effect of coding with LEGO robotics on primary school student's academic achievement and attitudes toward science lessons. The results in the literature relevant to science courses reveal that coding and robotic kits have become more efficient in science teaching. The students taking an active role in the process of robotics and coding have problem-solving skills in an educational and creative learning environment. Through robotics and coding, individuals are provided with many skills such as mathematical thinking, problem-solving, and creative thinking skills (Fidan & Yalçın, 2012).

The pretest applied to 4th grade primary school students' revealed that there is no significant difference between the experimental and control groups. Thus, we argue that the attitudes of both groups towards science are equivalent to each other. However, post-test results of the scientific attitude scale are likely to increase positive attitudes toward science when the Lego robotics were applied to the experimental group. Additionally, in the control group, to which the narrative method was applied, we observed that there was no significant difference in favor of the group in the pretest and posttest of SCAS (Science Course Attitude Scale).

Studies on robotic applications have become widespread in recent years and Lego-based robotic environments are widely used (Costelha & Neves, 2018). In one of these studies, Silva (2008) states that robotic activities increase students' motivation and are beneficial for their personal development. In another study, Çakır and Güven (2019) state that robotic coding activities are effective in concretizing science concepts and improving students' attitudes. Heafner (2004) states that the use of technology in lessons enables students to focus on learning and increases their learning motivation. Researchers, Behrens et al., 2009 and Mayerova 2012, state that robotic coding improves students' programming skills and motivation and offers many opportunities for their personal development. Likewise, our findings in the current study are consistent with the findings of the researchers (Çakır and Güven, 2019; Heafner, 2004; Behrens et al., 2010; Mayerova 2012) who state that robotic-assisted science experiments and robotic coding applications improve students' attitudes towards science lessons. Based on these results, we argue that robotic coding practices affect students' attitudes positively.

In a study conducted by Özer (2019) with 87 students to determine the effect of using robots in coding education on achievement, motivation and problem solving skills of 5th and 6th grade students. During the same period, they learned to code without using a robot. The research indicated a statistically significant differences between the pre-test and post-test scores in both groups. When the post-test scores of the groups were compared in our study,

we observed that there was a significant increase in favor of the experimental group. The academic achievement pretests of the experimental group taught with Lego robotics and the control group students taught by the narrative teaching methods indicated similarity with each other. In other words, the achievements of these two groups on the subject of "force and movement" in the science curriculum revealed similar results. However, in the posttest, there was a positive difference in favor of the experimental group. Accordingly, the academic success of the experimental group was higher than the academic success of the control group as a result of the experimental procedure.

Based on our findings within the current study, it can be argued that Lego robotics applications should be more emphasized within science teaching, considering that such a model improves the students' attitudes towards the science course and their academic achievements are positively affected.

References

- Altunel, M. (2018). *STEM education and turkey: opportunities and risks. SETA perspektif*, 207, 1-7.
- Aytekin, A., Sönmez Çakır, F., Yücel, Y. & Kulaözü, İ. (2018). Future-shaping coding science and some methods that can be used in learning coding, *Eurasian journal of social and economic research (EJSER)*, 5(5), 24-41.
- Behrens, A., Atorf, L., Schwann, R., Neumann, B., Schnitzler, R., Balle, J. & Aach, T. (2009). MATLAB meets LEGO Mindstorms—A freshman introduction course into practical engineering. *IEEE transactions on education*, 53(2), 306-317.
- Buyruk, B. & Korkmaz, Ö. (2016). Fetemm awareness scale (FFO): validity and reliability study, *Part: B journal of turkish science education*, 13(2), 61-76.
- Canbulat, A.N.K. & Yüce, S. (2018). Centering and taking care of the child according to the constructivist learning approach, *Trakya journal of education*, 8(1), 136-161.
- Costelha, H. & Neves, C. (2018). *Technical database on robotics-based educational platforms for K-12 students*. In 2018 IEEE International Conference on Autonomous Robot Systems and Competitions (ICARSC) (pp. 167-172). IEEE.
- Fidan, U. & Yalçın, Y. (2012). Robot trainer lego nxt. *Afyon kocatepe university journal of science and engineering sciences*, 12(1), 1-8.
- Gürdal, A. (1992). Importance of science in primary schools. *Hacettepe university journal of education*, 8, 185-189.
- Hamurcu, H., Günay, Y. & Çetin, O. (2001). *Student Attitudes Towards Experiment Activity, Laboratory Use and Reliability in Primary Education Science Teaching*. Science education symposium in Turkey at the beginning of the new millennium. Maltepe university faculty of education, September, İstanbul.
- Hançer, A.H., Şensoy, Ö. & Yıldırım, H.İ. (2003). An evaluation on the importance of modern science teaching in primary education and how it should be. *Pamukkale University Faculty of Education Journal*, 13(13), 80-88.
- Heafner, T. (2004). Using technology to motivate students to learn social studies. *Contemporary issues in technology and teacher education*, 4(1), 42-53.
- Keçeci, G., Alan, B. & Zengin, F. (2017). Stem Education Practices with 5th Grade Students, *Ahi Evran University Journal of Kirsehir Education Faculty (KEFAD)*, 18, 1-17.
- Çakır, K.N. & Güven, G. (2019). Effect of 5E Learning model on academic achievement and attitude towards the science course: A Meta-Analysis study. *Cukurova university faculty of education journal*, 48 (2), 1111-1140.
- Langdon, D., McKittrick, G., Beede, D., Khan, B. & Doms, M. (2011). *STEM: Good jobs now and for the future*. <https://files.eric.ed.gov/fulltext/ED522129.pdf> Erişim Tarihi: 01/11/2021.
- Mayerova, K. (2012). *Pilot activities: LEGO WeDo at primary school*. In Proceedings of 3rd International Workshop Teaching Robotics, Teaching with Robotics: Integrating Robotics in School Curriculum (pp. 32-39).
- Ministry of Education (2016). *STEM education report*. Ankara: Ministry of National Education, General Directorate of Innovation and Educational Technologies (YEĞİTEK). <http://yegitek.meb.gov.tr/www/meb-yegitek-genel-mudurlugu-stem-fenteknoloji-muhendislik-matematik-egitim-raporu-hazirladi/icerik/719>, Erişim Tarihi: 01/11/2021.
- Morgil, T. (1990). Science education in our country, problems and suggestions. *Journal of hacettepe university faculty of education*, 21-27.
- Özer, F. (2019). *The Effect of Robot Use in Coding Education on Secondary School Students' Achievement, Motivation and Problem Solving Skills*, (Unpublished Master's Thesis). Hacettepe University Institute of Educational Sciences, Ankara.

- Silva, J.M.V.D. (2008). *Robótica no ensino da física*, Tese de Mestrado, 4 de Fevereiro de 2008, <http://hdl.handle.net/1822/8069>.
- Aslan-Tutak, F., Akaygün, S. ve Tezsezen, S. (2017). Cooperative STEM (Science, Technology, Engineering, Mathematics) education application: Examination of STEM awareness of chemistry and mathematics teacher candidates. *Journal of hacettepe university faculty of education*, 32(4), 794-816. DOI: 10.16986/HUJE.2017027115
- Wang, H. H., Moore, T.J., Roehrig, G.H., & Park, M.S. (2011). STEM integration: Teacher perceptions and practice. *Journal of pre-college engineering education research (J-PEER)*, 1(2), 2
- Yenilmez, K. & Balbağ, M.Z. (2016). Attitudes of Science and Elementary Mathematics Teacher Candidates towards Stem, *Journal of education and instructional research*, 5(4), 301-307.
- Yılmaz, H., Koyunkaya, M., Güler, F. & Güzey, S. (2017). Adaptation of Science, Technology, Engineering, Mathematics (Stem) Education Attitude Scale to Turkish, *Kastamonu education journal*, 25(5), 1787-1800.
- Yolcu, V. & Demirer, V. (2017). A Systematic Overview of Studies on the Use of Robotics in Education, *SDU international journal of educational studies*, 4(2), 127-139.

Systematic Review of Smart Classroom for Hard Skills Training in Augmented and Virtual Reality Environments

Thiti Jantakun¹ Kitsadaporn Jantakun¹ & Thada Jantakoon²

¹ Department of Computer Education, Faculty of Education, Roi Et Rajabhat University, Roi Et, Thailand

² Department of Information and Communication Technology for Education, Faculty of Science and Technology, Rajabhat Maha Sarakham University, Maha Sarakham, Thailand

Correspondence: Thada Jantakoon, Department of Information and Communication Technology for Education, Faculty of Science and Technology, Rajabhat Maha Sarakham University, Maha Sarakham, Thailand E-mail: (e-mail: thada.phd@gmail.com).

Abstract

Advances in augmented and virtual reality (AVR) technology have allowed for the development of AVR interactive learning environments (AVR-ILEs) with increasing fidelity. When paired with a suitably capable computer tutor agent, such environments can permit adaptive and self-directed learning of procedural skills in some cases. We undertook a comprehensive review of published smart classroom (SC) solutions to facilitate hard skills training in AVR-ILEs. We established the learning context and implemented support for hard skills training for each of the seven solutions that qualified for the final analysis. Typically, AVR-ILEs mimic realistic work conditions or equipment. The aim of this study is to solutions featuring a smart classroom for hard skills training in an AVR-ILEs have been described. In the study, it is also aimed to types of AVR-ILEs from a smart classroom (SC) have been implemented to support hard skills training. This systematic review is based on the reporting criteria of PRISMA 2020 and the scope of the study consists of 9 academic studies including the keyword "smart classroom" and the keywords "augmented reality" or "virtual reality" in academic studies scanned in Scopus, IEEE Xplore, Eric, ScienceDirect and ACM Digital Library. In this study, the distribution of the studies used in the Smart Classroom for Hard Skills Training in Augmented and Virtual Reality Environments (SCHST-AVRE) by solution, domain, country, concept description, country, reviewed papers, learning objective(s), learning tasks, and the context of the technology used is included. In order to contribute to the research on the AVR-ILEs, it has been tried to determine the opportunities and risks that teaching in the SCHST-AVRE can offer to the field of education. In addition, it is thought that this study will shed a light on future studies.

Keywords: Smart Classroom, Augmented Reality, Virtual Reality, Hard Skills, Systematic Review

1. Introduction

Recent developments in augmented and virtual technology have made it feasible to teach professionals in hard skills in virtual settings. In addition, according to a meta-analysis done by Chun Xu and Linyue Zhang (2022), this

technology facilitates the merging of the digital and physical worlds and produces a smart classroom where virtuality and reality coexist. We are interested in the combination of AVR and SC technologies in the context of developing AVR interactive learning environments (AVR-ILEs) for hard professional skills training. We expect that the study and development of AVR-ILEs will facilitate the self-study of professional hard skills. This study evaluates the numerous self-study training options for difficult skills that have been developed and assessed in the past. According to this view, professional hard skills are the technical competencies required to operate a variety of equipment and perform tasks associated with professional work. Applied training approaches typically consist of performance-based training programs administered by a qualified professional (Alsabbah & Ibrahim, 2018). Methods such as on-the-job training, master-apprentice teaching, and live-action simulations, whereby employees are trained in real working environments using a hands-on approach, represent popular means of hard skills training.

Augmented reality technology is utilized in a variety of educational contexts and learning levels, including preschool, elementary school, middle school, and high school (Palamar et al., 2021). Augmented reality techniques allow the transformation of curriculums, classrooms, and environmental elements in learning environments into multimedia opportunities, thereby enhancing the functional diversity of the environment and allowing multiple cognitive regions to operate during the learning process. It provides spaces where augmented reality facilitates the learning and teaching of abstract concepts and where students can share their knowledge (Erdem, 2017). Furthermore, it is said that these surroundings result in an improvement in students' learning (Di et al., 2013). Moreover, it was mentioned that augmented reality boosts students' interest, motivation, and experience, and plays a role in integrating the information and skills learned in the virtual world into the actual environment; hence, it is recommended (FernándezGarca, 2021).

Virtual reality environments are effective environments in terms of motivation. Users generally find these environments exciting and entertaining (Çoban & GOKSU, 2022). In addition, when individuals use VR settings, they might gain digital experiences and become more motivated to attain their objectives (Howard & Gutworth, 2020). Users may learn and feel motivated in virtual reality learning environments by having fun (Park & Kim, 2021; Holmberg & Hansen, 2008; Niemi et al., 2014). Increased student motivation guarantees their participation in learning activities (Ali et al., 2020). In addition, Makransky and Petersen (2019) underlined that students are motivated since they may do research in VR settings. Specifically, VR learning environments boost students' intrinsic motivation (Huang & Liaw, 2018).

Augmented reality (AR) and virtual reality (VR) have been highlighted as promising technologies for increasing the smart classroom educational experience (Elkoubaiti & Mrabet, 2018). AR and VR offer immersive and interactive learning environments that may engage students and promote the acquisition of new skills and information. Digital storytelling, which refers to the use of multimedia tools and techniques to narrate a tale or transmit information, is one educational use of augmented reality and virtual reality (Xu et al., 2011). Digital storytelling may be an excellent method for engaging students and enhancing their learning since it enables them to experience and interact with the subject in a more relevant and real manner. The purpose of this systematic review is to investigate the evidence on the usage of AR and VR interactive learning environments that combine digital storytelling in SMART classrooms.

Recent systematic reviews of the literature on VR have focused on its application to hard skills training (Laine et al., 2022). Learning classroom management has only rarely been integrated into VR due to the need for some type of VR tutor extension to their interface model (Lugrin et al., 2016). The combination of these emerging technologies has the potential to provide advantages for professional training, thus their incorporation into firms' training programs is anticipated to rise in the near future (Kukulaska-Hulme et al., 2022).

In the present systematic literature review, we searched reputable databases for articles on AVR-based SCs, reviewed the pertinent articles, analyzed the review data in light of our research questions, and reported our

findings. This investigation was intended to support our efforts with regard to developing an augmented and virtual reality-based smart classroom to train hard skills and observe immersed learners undergoing hard professional skills training within an AVR-ILE. Specifically, the study examined and catalogued published literature in an effort to answer the following questions:

- 1) What solutions featuring a smart classroom for hard skills training in an AVR-ILEs have been described in the literature?
- 2) What types of AVR-ILEs from a smart classroom (SC) have been implemented to support hard skills training?

2. Method

We discussed the purpose of this review paper and established the research questions, which we then used to develop the inclusion and exclusion criteria. The search was conducted in December 2022 and included articles published between January 2014 and December 2022. The following keywords were used: "augmented reality," "virtual reality," and "smart classroom." We performed comprehensive searches in Scopus, IEEE Xplore, ERIC, ScienceDirect, and ACM Digital Library and systematically narrowed the query down to one that could be repeated in all of the databases. This systematic review is based on the reporting criteria of PRISMA 2020 (Page et al., 2021).

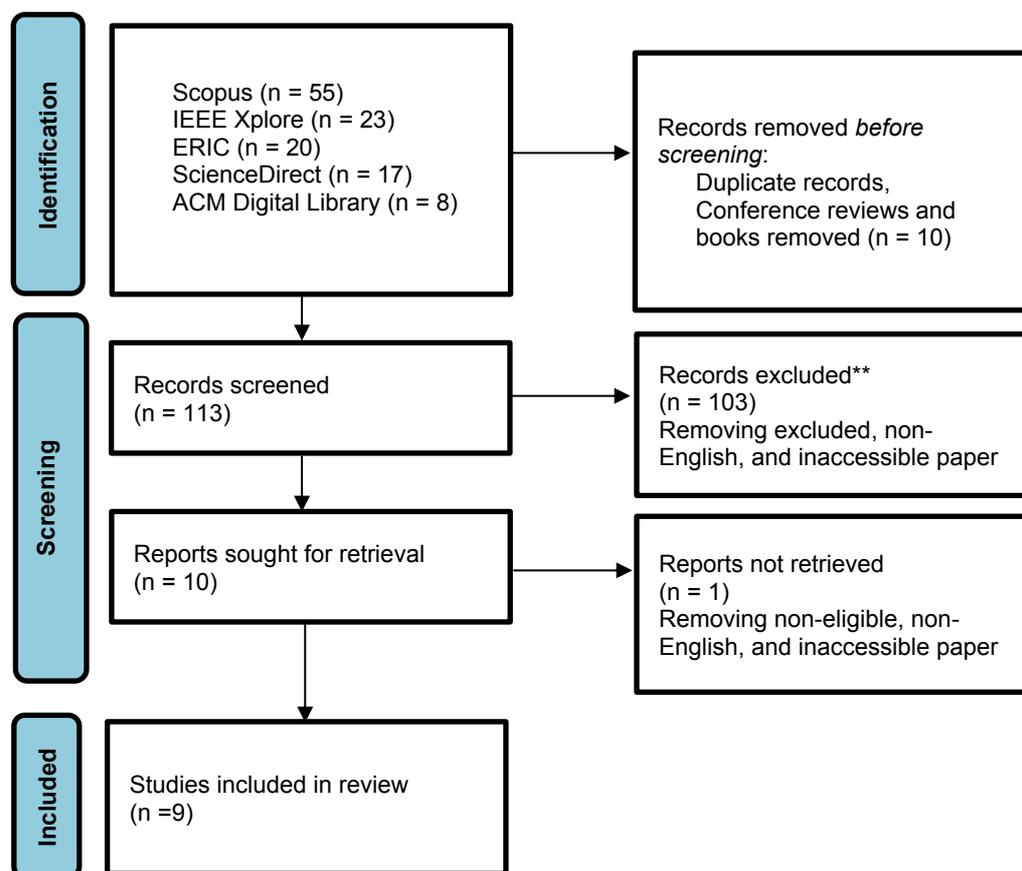


Figure 1: PRISMA guided systematic review procedure used for this study

We then moved on to the execution phase, which involved performing the query in a case-insensitive form using the title, abstract, and keyword fields of each database, with the exception of ACM Digital Library, where only the abstract field was available for the search. The query regarding “smart classroom” resulted in 228,342 papers being identified (see Table 1). As we were not interested in papers on smart classroom outside of the AVR context, we included the term “augmented reality” AND “virtual reality” in the search, which significantly reduced the

number of results to 123. Scopus contributed the largest number of results. We then added five papers that we had previously identified as being potentially relevant when conducting the comprehensive queries. In addition, we removed all of the duplicate papers, conference reviews, and books from the results before reviewing the abstracts of the target articles.

Table 1: Number of Query Results in Each Database

Database	Target fields	Results for “smart classroom”	Results for “smart classroom” AND “augmented reality” AND “virtual reality”
Scopus	Article title, Abstract, Keywords	827	55
IEEE Xplore	“All metadata”	869	23
ERIC	Abstract, title	105	20
ScienceDirect	Title, abstract, or author specified keywords	126	17
ACM Digital Library	Abstract	226,415	8
ALL	-	228,342	123

2.1. Abstract Review

Next, we read through the abstracts of all the remaining papers (n=113) and assessed them based on the previously established inclusion and exclusion criteria (see Table 2). Papers that met at least two inclusion criteria and did not meet any exclusion criteria were accepted for a full-text review. In the case of all papers, merely reading the abstract was not enough to make a decision regarding their eligibility. We could not determine whether they had implemented an immersive form of AVR technology, what the exact training topic was, or whether a tutoring system was implemented. To address these issues, we performed an additional content-based inspection of the relevant papers. After the inspection, a total of 9 papers were approved for a full-text review, while 103 papers were removed. The removed papers did not meet the inclusion criteria, could not be retrieved, or were not available in English.

Table 2: Inclusion and Exclusion Criteria

Criteria	Action
Concerns hard skills training	Include
Describes a smart classroom	Include
The smart classroom guides learners towards achieving learning goals	Include
Describes the AR or VR context	Include
A framework proposition or a case study	Include
The training context is clearly non-immersive AR or VR	Exclude
Concerns training in soft skills or academic skills, such as communication or problem-solving	Exclude
The focus is different, such as authoring tool development, child development, etc.	Exclude
A review or a meta-analysis.	Exclude

2.2. Full-text Review

We performed a full-text review of the approved papers (n=9) after the abstract review. We re-visited our research questions and identified within them aspects that the papers should describe (see Table 3). The reviewed papers' eligibility for the final analysis was determined based on whether they discussed and described the proposed hard skills training solution integrating VR and SC.

Table 3: Reviewed Aspects of the AVR-ILEs and Smart classroom

RQ1 Overview	RQ2 AVR-ILEs from a smart classroom (SC) have been implemented
Authors	Technology
Domain	Solutions
Solutions	Learning objectives
Country	Learning tasks
Overall concept	-

The first author of the present work read each paper during the full-text review and marked all instances where they described the aspects of interest. More papers were linked together based on the studied training solutions. Thus, a total of 123 papers were fully reviewed. Prior to determining the final sample, two researchers re-reviewed the suggestions for the final analysis and discussed the papers' eligibility. Overall, 103 papers that could not be assessed (inaccessible or non-English) or did not provide an adequate description of using an AR or VR context were removed. The final accepted papers (n=9) provided the required descriptions of the utilized Smart classroom solution and tutoring solutions.

2.3. Final Analysis

During the final generic qualitative content analysis step, two researchers re-read and marked the accepted papers (n=9) individually. All of the marked phrases and paragraphs relevant to the tutoring systems and AVR-ILEs were entered into a Microsoft Excel sheet and organized according to the research questions. Furthermore, we collected images of each solution and used them to interpret aspects of the constructed AVR worlds and tutoring systems. After extracting and organizing the relevant material, we analyzed its content across each aspect category (see Table 3). More specifically, for each aspect category, we read through the material and established a general sense of it. Then, we began coding the descriptions with labels one aspect and one training solution at a time. Whenever a new label emerged, we rechecked the previous papers' descriptions for any instances of that label. The generated labels were inserted into landscape tables and more detailed tables that are broken down in the results section. A research question sometimes demanded descriptive answers that did not require such an in-depth content analysis. In such cases, we focused on achieving the correct interpretation of the extracted data. The reliability of the interpretations was assessed by means of discussions between the two researchers. Finally, all of the researchers assessed the results tables and made any necessary revisions.

3. Results

3.1 Solutions Described in the Literature

The nine papers included in our final analysis described seven separate solutions utilizing smart classrooms for hard skills within an AVR-LE (see Table 4). Among them, Solutions 1–6 were described in single papers, while Solutions 7–9 were discussed in more than one reviewed paper.

Table 4: Identified Solutions

Items	Solution	Domain	Concept description	Country	Reviewed papers
P1	Healthcare professionals	Clinical information	There are a lot of aspects that make digital learning approaches highly successful. It is possible to highlight the functions of recording a video lesson, engaging with different teachers and students from different cities and countries, creating an interactive learning environment, and using visual examples and 3D models to assist learners.	Russia-Kazakhstan	Omirezak et al., (2022)
P2	The steel structure construction technology	Civil engineering	A virtual training system that utilizes VR technology is an appropriate and cost-effective option.	China-United States	Xu et al., (2022)
P3	Develop interactive learning media	Developing teachers	The interactive learning media development model with augmented reality, employing the Imagineering process for SMART classroom comprises of the components of an interactive learning media development model with augmented reality, employing the Imagineering process for SMART classroom.	Thailand	Wannapiroon et al., (2021)
P4	Professional Development	Developing teachers	VR in teacher training programs, practicum and student teaching experiences, and a professional development event on how to implement VR in scientific classrooms. With the proper preparation and training, teacher candidates may become school leaders in the development of more participatory STEAM-based programs.	United States	Peterson & Stone (2019)
P5	Reading skills	Developing teachers	Implementation of the Living Book project and analysis of the program's core activities and deliverables. In addition, the document specifies the content and organization of the "Augmented Teacher" and "Augmented Parent-Trainer" training courses designed for the project. The paper concludes with a discussion of the key insights gathered from the pilot testing of the courses and the subsequent classroom experiments conducted in the project partner nations.	Cyprus	Meletiou-Mavrotheris et al., (2020)
P6	Programming Education	Situational teaching	VR goggles, the most fundamental virtual reality technology, are used to illustrate the sequencing process of abstract algorithmic knowledge and to apply innovative teaching tools to draw students' attention, boost classroom engagement, and deepen	China	Shen & Chen (2022)

Items	Solution	Domain	Concept description	Country	Reviewed papers
			their grasp of the learning topic. The creation of the application does not necessitate the use of specialized teaching equipment, and it has some practical value for ordinary instruction.		
P7	English Learning	Situational teaching	The emergence of fifth-generation (5G) and virtual reality (VR) technology gives substantial support for the reform of the new educational approach. Situational English training is enhanced by the immersive 5G+ VR smart classroom's smart education application scenario.	China	Ding & Qi (2022)
P8	English Learning	Situational teaching	The English augmented reality classroom is built using the system prototyping process and tested using semi-structured interviews. In order to implement an AR-enhanced curriculum, the framework is comprised of five primary components: instructors, themes, media, operational areas, and agents. Embedded interactive 3-D virtual elements in the learning environment provide an immersive learning experience. In the actual learning environment, students may interact with virtual items.	Taiwan	Kuo-Chen Li et al., (2016)
P9	English Learning	Situational teaching	AR, VR, and the combination of the two, known as mixed or extended reality, are umbrella words encompassing a variety of location, motion, and information technologies that enable augmenting reality with digital resources (in the case of AR) or creating wholly digital settings (in the case of VR).	Japan-New Zealand	Bonner & Reinders (2018)

In terms of the distribution of studies by country, the findings showed that the country with the highest number of studies was China (see figure 2). China was followed by the United States with one study, Thailand with one study, Cyprus with one study, and Taiwan with one study. One study was conducted in partnership with Russia and Kazakhstan; one study by the USA and the People's Republic of China together; and one study by Japan and New Zealand together. Only one study was found to have been conducted in the other countries mentioned above. Based on findings, one study was carried out in Russia and Kazakhstan, one in 2022. Moreover, studies in Japan and New Zealand carried out until 2018, no study after 2018 were found to be about AVR in SC.



Figure 2: Distribution of Studies by Country

It is observed that the concept of SCHST-AVRE (from 2014 to 2022) has changed over the years from the perspective of 3D computer software or digital reality. On the other hand, no studies were found in 2017. It is seen that the largest number of studies (n=4) were done in 2022. It is also seen that the studies on SCHST-AVRE showed a steady but not growing trend after the first years, then a static increase in the number of studies, and growth again in 2022 (see Figure 3). Among the studies examined, the concept of AVR-ILEs has tended to be perceived as being based on either AR or VR technology in recent studies. In previous years, the concept of AVR-ILEs was handled in places such as situational teaching and teacher development.

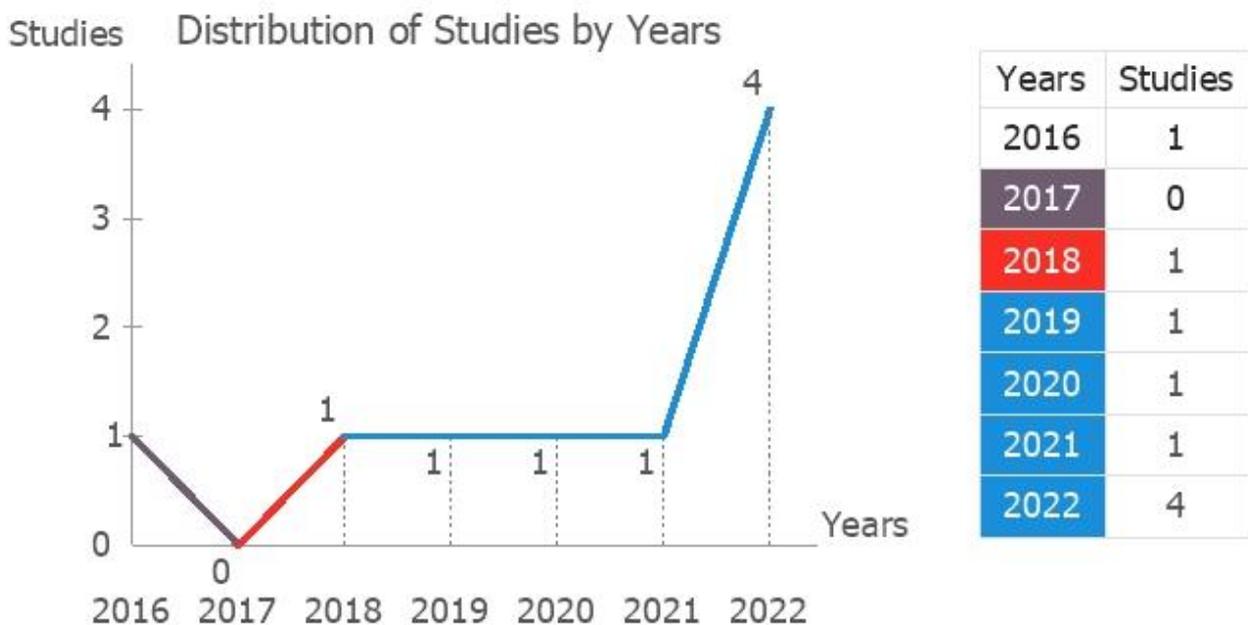


Figure 3: Distribution of Studies by Years

3.2 AVR-ILEs implementation

Learning Objectives and Learning Tasks

Each solution offered a description of the relevant technology. We collected and reviewed each solution's learning objectives and tasks (see Table 5).

Table 5: Training Solutions' Learning Objective and Tasks

Items	Technology	Solution	Learning objective(s)	Learning tasks
P1	AVR	Healthcare professionals	(a) evaluating the prevalence of technology solutions in the student population, the circumstances of the physical learning environment, and instructional activities within the Smart Classroom framework;	For decision-making at the point of treatment, healthcare providers require current clinical information and assistance. Smartphones give access to mainstream medical textbooks, community guidelines, pharmacological guides, and institution-specific therapeutic standards.
P2	AVR	The steel structure construction technology	(a) Development of cloud-based instructional resources utilizing augmented reality technology to facilitate reading, imitate real-world settings, and solve issues in theory and practice. There is a poor correlation between two-dimensional drawings and three-dimensional real-world situations. (b) Addressing the teaching challenges of Module 1, Steel Structure Drawing Recognition: Here, the primary aims are to facilitate the training of spatial thinking and to construct the "Steel Structure 3D Simulation Recognition Training Platform." As instructional material for two-dimensional design, we provide precise drawings of common steel structural joints. Afterwards, the three-dimensional model is produced and shown. The technology includes expert voice-over node explanations and simulated expert on-site instruction. In addition, we provide 3D models that are readily detachable and can be constructed step-by-step to facilitate one-click assembly and restoration of the overall components. (c) "one-click VR conversion" software is created with the goal of error checking the model and solving the teaching difficulties in steel structure BIM modelling in module 2. The student-created 3D model may be transformed by the software and transferred into the VR system for	In this mode, the steel structure hoisting construction project may be played and halted. This allows for unique observation and learning, which is perfect for instructor demonstrations. This mode is for interactive learning and training in a virtual reality environment. This approach integrates with the to-be-mastered knowledge points to provide practical training problems. The student can go to the next phase after answering the questions. The quantity and nature of the questions can be altered. The training and teaching management mode are available via a single interface for management. The primary duties consist of managing the VR equipment terminals, student accounts, the data resource package for the training course, and the task completion status and assessment scores of students. This mode also examines knowledge blind spots and gives comments on them.

Items	Technology	Solution	Learning objective(s)	Learning tasks
			inspection and modification. All of these phases constitute virtual building. d) The "steel structure VR training platform" is designed to address the lack of intuitive understanding of the building and installation processes and the difficulties in steel structure manufacturing and installation in module 3.	
P3	AR	Develop interactive learning media	To create the best practices of the Ministry of Education for instructors of information and communication technology in the creation of such learning materials.	a) Excellent teachers establish topic limits and develop activities that allow students to autonomously construct their own interactive learning materials based on their imagination and ingenuity. b) Teachers with outstanding practices conducted a six-step learning exercise based on the Imagineering Process. c) Students in higher education and vocational schools develop interactive learning materials using the Imagineering methodology. d) Using Imagineering, teachers evaluate the creativity and originality of their students. Evaluation instruments included the creativity assessment and the creative innovation quality assessment.
P4	VR	Professional Development	Use of VR in a teacher-training program	Using VR in teacher training programs, practicum and student teaching experiences, and offering a tutorial on how to integrate VR in scientific classrooms. With sufficient preparation and training, teacher candidates may become school leaders in the development of more participatory STEAM-based programs that employ cutting-edge technology such as virtual reality and augmented reality.
P5	AR	Reading skills	The pilot testing and follow-up classroom experiments that took done in four of the partner nations (Cyprus, Estonia, Portugal, and Romania) in order to assess the degree of effectiveness of the professional development program.	The purpose of the Augmented Teacher course is to promote reading instruction as a cross-disciplinary talent for all educators. The course introduces teachers to the Living Book approach and how it may be used to increase students' reading motivation and reading comprehension.

Items	Technology	Solution	Learning objective(s)	Learning tasks
P6	VR	Programming Education	Promoted programming education for students to learn to use computational thinking	This initiative incorporates virtual reality (VR) technology into middle school classrooms and creates VR-based teaching aid applications to assist students in improving their learning and developing algorithmic reasoning. In terms of platform design, direct human-computer interface learning, and the activation of appropriate functional buttons, the teaching aid apps do not need specialized teaching equipment and are realistically applicable to routine teaching.
P7	VR	English Learning	Abilities of a good English	From the standpoint of interacting subjects and objects, there are two situations: human-virtual object interaction and human-human interaction. Both interaction conditions in virtual space are crucial. The contact between people and virtual things can enrich the learner's experience, while human-to-human interaction can improve the learner's capacity for reflection.
P8	AR	English Learning	Abilities of a good English	Provides a demonstration of the tutor in the AR classroom. When students activate the mobile app to begin this lesson, the 3-D avatar tutor will appear above the tutor AR marker and begin the introduction. Since the example learning session is military-related, the tutor appears as a soldier to provide an immersive experience. After completing the introduction, the instructor will direct pupils to the subsequent region or move between scenarios.
P9	AVR	English Learning	Abilities of a good English	In order to illustrate how an AR or VR activity may function in the classroom, a sample activity with detailed implementation instructions is supplied. This paper outlines some of the decisions to be taken and processes to be followed, including which tools and applications are to be utilized. This also affords us the opportunity to teach unfamiliar technical jargon to the readership.

Nine studies (n=9) included in the study were examined according to their research technology. Studies were categorized as AR, VR, and AVR. It can be clearly seen that three studies were included in AR, three studies conducted VR, and three studies ARR technology (see figure 4).

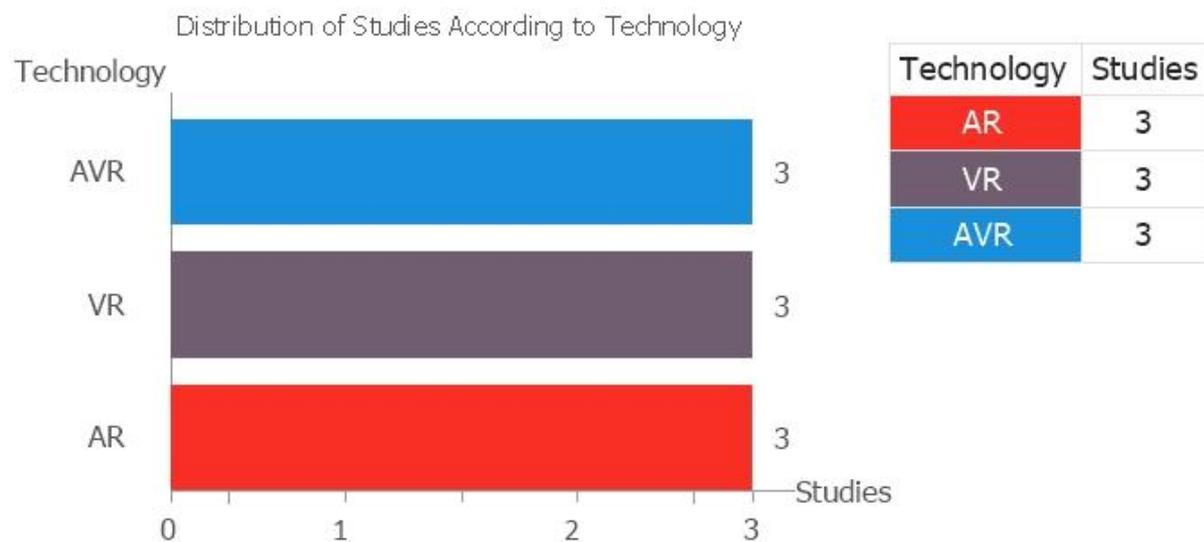


Figure 4: Distribution of Studies by Technology

4. Discussion

The present literature review has revealed that SC and AVR-ILEs technologies have only rarely been applied together in the context of hard skills learning over time and in different domains. The learning objectives within AVR-ILEs have generally focused on helping learners attain procedural knowledge. Learning objectives concerning declarative knowledge were exclusively realized in "Healthcare Professionals," "Steel Structure Construction Technology," "Developing Interactive Learning Media," "Professional Development," "Reading Skills," "Programming Education," and "English Learning" before the learner used the AVR-ILEs. However, various information augmenting methods were utilized by most of the classroom to display descriptions, explanations, and demonstrations as guiding actions within the AVR-ILEs. As such, learning objectives related to declarative knowledge also seem attainable within the studied AVR-ILEs.

The majority of the reviewed training solutions resembled tutorials with high regulation and an expected order of actions. One might even ask, where is the pedagogy and how impactful are these types of tutorials? The student models associated with the reviewed tutoring systems concentrated on the learner's capability to perform the correct actions and remain on the optimal path. However, AVR-ILEs technology can enable more detailed tracking capabilities and offer new possibilities for monitoring the learner. The objective of designing a tutoring system should be to create a system that is capable of offering both skill practice and social-emotional learning (Lertbumroongchai et al., 2020). In addition, Thongprasit and Piriyasurawong (2022, p. 112) argue that leading learners inside the context of a metaverse to acquire engineering competency requires three components: the metaverse, the metaverse platform, and future engineering competency. What if engineering students of the future could view a virtual building site, observe the flow of fluids in three dimensions, and choose to pursue their interests in the virtual world? It would save more time and money on the job front. If engineers are developing parts and seeing the disassembly of 3D parts in real time, it is as if they are actually producing them, or a construction site may mimic itself into a genuine structure, summarizing the construction without the need to travel to the site. This allows us to work from anywhere on the globe without having to physically travel there. The

metaverse has made it feasible to cultivate an engineering-competent workforce capable of meeting the demands of future industrial firms. As a result of the metaverse's creativity, engineering is undergoing a profound transformation. By combining the notion of establishing a real-world environment with technology to form a "virtual world community," we may link the items around us and the environment as if we were living outside, engaging with strangers, and producing an event together in the actual location.

Finally, we acknowledge that only a small number of solutions met our inclusion criteria. In part, we consider this to be a fundamental issue associated with the literature review method, as authors may not include canonical terms within their keywords and abstracts. The majority of prior studies concerning SCs have focused on the education (formal schooling) domain, which we deliberately excluded due to our focus on the professional learning context. In addition, despite the work exhibiting many AVR-ILEs-like behaviors, may not be considered to incorporate a formal AVR-ILEs element.

5. Conclusion

We have reviewed papers that described training solutions in which SC technology was implemented in order to guide hard skills acquisition in an AVR-ILEs. While there is a long tradition of SC research, its implementation in AVR-ILEs remains a novel research branch. However, separate from this tradition, it is possible that some researchers have developed other adaptive smart classroom solutions for AVR-ILEs. The scope of our study only included papers featuring SCs for hard skills training.

This review indicated that the described hard skills training using AVR was exclusively completed either in realistic mock-ups of the learner's real-life environment or using full mock-ups of the work equipment to be trained. A recent systematic review (Laine et al., 2022) proves that digital learning environments are generally made to resemble real-life working contexts in an effort to minimize the negative effects on performance transfer.

Overall, it appears that AVR-ILEs technology will be increasingly used to provide training through emulations of realistic situations. However, we should not ignore the fact that in its current phase of development, AVR-ILEs technology may increase inequality in relation to education. Indeed, not all learners can afford it, while some learners may not be able to use it. Yet, AVR-ILEs technology could help with rehabilitation, and it could also be harnessed to render certain practical training and manufacturing processes more sustainable. Ultimately, AVR-ILEs is a tool that needs to be combined with various technologies, and we can still influence its development and use.

Acknowledgments

This study was financially supported by a research grant from the Education Maintenance and Income Budget. The fiscal year 2022 Rajabhat Maha Sarakham University.

References

- Ali, Z., Masroor, F., & Khan, T. (2020). Creating Positive Classroom Environment for Learners' Motivation Towards Communicative Competence in The English Language. *Journal of the Research Society of Pakistan*, 57(1), 317.
- Alsabbah, M. Y., Malaysia, U. S., & Malaysia, U. S. (2018). The Influence of Training System on Employees' Hard Skills in the Palestinian National Authority. *Open Access Library Journal*, 5(01), 1.

- Bonner, E., & Reinders, H. (2018). AUGMENTED AND VIRTUAL REALITY IN THE LANGUAGE CLASSROOM: PRACTICAL IDEAS. *Teaching english with technology*, 18, 33-53.
- Çoban, M., & GOKSU, İ. (2022). Using virtual reality learning environments to motivate and socialize undergraduates in distance learning. *Participatory Educational Research*, 9(2), 199-218.
- Di Serio, Á., Ibáñez, M. B., & Kloos, C. D. (2013). Impact of an augmented reality system on students' motivation for a visual art course. *Computers & Education*, 68, 586-596.
- Ding, H., & Qi, M. (2022). Situational english teaching experience and analysis using distributed 5G and VR. *Mobile Information Systems*, 2022 doi:10.1155/2022/7022403
- Elkoubaiti, H., & Mrabet, R. (2018, October). *How are augmented and virtual reality used in smart classrooms?*. In Proceedings of the 2nd International Conference on Smart Digital Environment (pp. 189-196).
- Erdem, A. (2017). Educational importance of augmented reality application. *Educational Research and Practice*, 448-458.
- Fernández-García, C. (2021). Effect of augmented reality on school journalism: A tool for developing communication competencies in virtual environments. *The Electronic Journal of Information Systems in Developing Countries*, 87(4), e12169.
- Hansen, M. (2008). Versatile, immersive, creative and dynamic virtual 3-D healthcare learning environments: a review of the literature. *Journal of medical Internet research*, 10(3), e1051.
- Howard, M. C., & Gutworth, M. B. (2020). A meta-analysis of virtual reality training programs for social skill development. *Computers & Education*, 144, 103707.
- Huang, H. M., & Liaw, S. S. (2018). An analysis of learners' intentions toward virtual reality learning based on constructivist and technology acceptance approaches. *International Review of Research in Open and Distributed Learning*, 19(1).
- Kukulska-Hulme, A., Bossu, C., Charitonos, K., Coughlan, T., Ferguson, R., FitzGerald, E., & Whitelock, D. (2022). Innovating pedagogy 2022: exploring new forms of teaching, learning and assessment, to guide educators and policy makers.
- Kuo-Chen Li, Cheng-Ting Chen, Shein-Yung Cheng, Chung-Wei Tsai (2016). The Design of Immersive English Learning Environment Using Augmented Reality. *Universal Journal of Educational Research*, 4(9), 2076 - 2083. DOI: 10.13189/ujer.2016.040919.
- Laine, J., Lindqvist, T., Korhonen, T., & Hakkarainen, K. (2022). Systematic review of intelligent tutoring systems for hard skills training in virtual reality environments. *International Journal of Technology in Education and Science (IJTES)*, 6(2), 178-203.
- Lertbumroongchai, K., Saraubon, K., & Nilsook, P. (2020). The social-emotional learning process to develop practicing skills for hands-on students. *International Journal of Information and Education Technology*, 10(8), 597-602. <https://doi.org/10.18178/ijiet.2020.10.8.1430>
- Lugrin, J. L., Latoschik, M. E., Habel, M., Roth, D., Seufert, C., & Grafe, S. (2016). Breaking bad behaviors: A new tool for learning classroom management using virtual reality. *Frontiers in ICT*, 3, 26.
- Makransky, G., & Petersen, G. B. (2019). Investigating the process of learning with desktop virtual reality: A structural equation modeling approach. *Computers & Education*, 134, 15-30.
- Meletiου-Mavrotheris, M., Carrilho, A. R., Charalambous, C., Mavrou, K., & Christou, C. (2020). Teacher training for 'augmented reading': The living book approach and initial results. *Education Sciences*, 10(5), 144. <https://doi.org/10.3390/educsci10050144>
- Niemi, H., Harju, V., Vivitsou, M., Viitanen, K., Multisilta, J., & Kuokkanen, A. (2014). Digital storytelling for 21st-century skills in virtual learning environments. *Creative Education*.
- Omirezak, I., Alzhanov, A., Kartashova, O., & Ananishnev, V. (2022). Integrating mobile technologies in a smart classroom to improve the quality of the educational process: synergy of technological and pedagogical tools. *World Journal on Educational Technology: Current Issues*. 14(3), 560-578.
- Palamar, S. P., Bielienska, G. V., Ponomarenko, T. O., Kozak, L. V., Nezhyva, L. L., & Voznyak, A. V. (2021). *Formation of readiness of future teachers to use augmented reality in the educational process of preschool and primary education*. CEUR Workshop Proceedings.
- Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., ... & Moher, D. (2021). The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *International journal of surgery*, 88, 105906.
- Park, S., & Kim, S. (2021). Leader board design principles to enhance learning and motivation in a gamified educational environment: Development study. *JMIR serious games*, 9(2), e14746.
- Peterson, K., & Stone Andrew, B. (2019). From Theory to Practice: Building Leadership Opportunities through Virtual Reality Science Expeditions Kaitlin. *International Journal of the Whole Child*, 4(1), 67-74
- Shen, H., & Chen, X. (2022). Virtual reality-based internet + smart classroom. *Journal of Internet Technology*, 23(2), 335-344. doi:10.53106/160792642022032302013
- Thongpravit, J., & Piriyaasurawong, P. (2022). Metaverse for developing engineering competency. 2022 Research, Invention, and Innovation Congress: Innovative Electricals and Electronics (RI2C). <https://doi.org/10.1109/ri2c56397.2022.9910290>

- Wannapiroon, P., Nilsook, P., Kaewrattanapat, N., Wannapiroon, N., & Supa, W. (2021). Augmented reality interactive learning model, using the imagineering process for the SMART classroom. *TEM Journal*, 10(3), 1404-1417. doi:10.18421/TEM103-51
- Xu, C., & Zhang, L. (2022). Application of XR-Based Virtuality-Reality Coexisting Course. *Intelligent Automation & Soft Computing*, 31(3).
- Xu, Y., Park, H., & Baek, Y. (2011). A new approach toward digital storytelling: An activity focused on writing self-efficacy in a virtual learning environment. *Journal of educational technology & society*, 14(4), 181-191.

Knowledge of the Historical and Contemporary Status of Dong Ethnic Group's "Da Ge" Folk Music in Liuzhou, China

Hengbin Wu¹, Peerapong Sensai², Akapong Phulaiyaw³

^{1,3} College of Music, Mahasarakham University

² Faculty of Fine Applied Arts and Cultural Science, Mahasarakham University, Thailand

Correspondence: Hengbin Wu, College of Music, Mahasarakham University, Kantharawichai, Maha-Sarakham, 44150, Thailand. E-mail: 63012051007@msu.ac.th

Abstract

This research uses the qualitative research method, with the objectives of investigating the historical and contemporary status of the Dong ethnic group's "Da Ge" folk music. Using the research conceptual frameworks of Chinese art and music theory and western art and music theory, and the methodology of participant observations, experiments, simulations, questionnaires, and interviews, the three most representative types of "Da Ge" folk music of the Dong ethnic group in Liuzhou, China, selects two key informants. The study's findings are as follows: Many studies on musical score examples have revealed: The mode and scale of Dong "Da Ge" folk music are usually the Chinese national mode, and most of them are "Yu" mode. The melody is usually sung in several parts, usually two. The melody is sung in the high part of a song, and the continuous bass is sung in the low part. In melody, Dong "Da Ge" folk music primarily employs arpeggios and vibrato. The use of eighth and sixteenth notes, as well as dot rhythms that frequently alternate between two and three beats. Most songs have a paragraph structure. Dong ethnicity "Da Ge" music is sung in the most natural way possible, with a light breath.

Keywords: Knowledge, Dong Ethnic Group, Da Ge Folk Music, Chinese Folk Music, Liuzhou, China

1. Introduction

The Dong first appeared in China during the Song dynasty (AD 960–1279), moving southwest in a series of migrations, possibly forced by the advancing Mongols. Today, in sparsely populated Guizhou, they share the area with the Buyei. At the time of the Qin and Han dynasties (221 B.C.–A.D. 220), there were many tribes in what present-day Guangdong and Guangxi (Britannica, 2020). The Dong people, descendants of one of these tribes, lived in a slave society at that time. Slavery gradually gave way to a feudal society in the Tang Dynasty. After the Opium War of 1840–42, the Dong people were further impoverished due to exploitation by imperialists, Qing officials, landlords, and usurers. The Dongs, who had all along fought against their oppressors, started to struggle more actively for their own emancipation after the founding of the Chinese Communist Party in 1921. They served as guides and supplied grain to the Chinese Red Army when it marched through the area during its Long March in the mid-1930s. In 1949, guerilla units organized by the Dong, Miao, Han, Zhuang, and Yao nationalities fought

shoulder to shoulder with regular People's Liberation Army forces to liberate the county seat of Longsheng (McKhann, 1995; Cheung, 1996; Covell, 1998; Shih, 2007; Luh, 2014; Chaisingkananont, 2014).

Dong "Da Ge" folk music is the general name for Dong folk multi-voice songs without accompaniment and a conductor (Choi, 2018; Xu & Karin, 2020; Guo, 2021). Voice song, narrative song, children's song, step on the hall song, and blocking the road song are all included. The melody structure, singing skills, singing style, and singing occasions of Dong "Da Ge" folk music differ from those of general folk songs; it is all a collar and points multi-tone harmonic, high bass sing the chorus of species, belonging to private voice polyphony music songs; all of this is an empty shell in Chinese and foreign folk music. In 2009, Dong "Da Ge" folk music was included in the representative list of the intangible cultural heritage of humanity (Yan & Dapradit, 2022).

At the present time, A popular saying among the Dong people in Guizhou Province in southern China has it that "rice nourishes the body and songs nourish the soul." (Shouyong, 2020). Their tradition of passing on culture and knowledge in music is exemplified in the Dong "Da Ge" folk music ethnic group, where multi-part singing is performed without instrumental accompaniment or a leader. The repertoire includes a range of genres such as ballads, children's songs, songs of greeting, and imitative songs that test performers' virtuosity at mimicking the sounds of animals. Taught by masters to choirs of disciples, Dong "Da Ge" folk music is performed formally in the drum-tower, the landmark venue for rituals, entertainment, and meetings in a Dong village, or more spontaneously in homes or public places (Jacoby et al., 2021). They constitute a Dong encyclopedia, narrating the people's history, extolling their belief in the unity of humans and nature, preserving scientific knowledge, expressing feelings of romantic love, and promoting moral values such as respect for one's elders and neighbors. Dong "Da Ge" folk music is performed widely today, with each village boasting various choirs divided by age and sometimes gender. In addition to disseminating their lifestyle and wisdom, it remains a crucial symbol of Dong ethnic identity and cultural heritage (Xie, 2008; Hwang, 2008; Lau, 2013; Goh & Wu, 2017; Maags & Trifu, 2018; Ding, 2019; Guo, 2019; Han, 2021).

While Liuzhou is another area where many Dong residents have lived, relying on Dong "Da Ge" folk music to entertain society all the time, the Dong "Da Ge" folk music of the Tong people in Liuzhou still lacks the study to analyze its musical identity. So, to record the Dong "Da Ge" folk music of the Dong people in Liuzhou city, make it better known, bring folk music to a higher level of creativity, and keep the heritage music culture from losing its wisdom.

2. Method

The research methods of this article are as follows: 1) Documentary data method: through collecting, sorting out, and identifying existing documents and forming a scientific method of understanding by studying these data. 2) Field investigation method: Field investigation is the basic method to obtain first-hand information. 3) Qualitative research method: Explain the collected data (Oun & Bach, 2014).

2.1 Research site

The research site of this paper is Liuzhou, a natural residential area of Dong ethnic group, located in the central and northern parts of Guangxi Zhuang Autonomous Region. Liuzhou is a city where more than 30 ethnic groups, such as Zhuang and Han, meet and live together. Among them, the Zhuang and Dong are the oldest indigenous ethnic groups living in Liuzhou. They are mainly distributed in suburbs and suburban counties. Liuzhou has unique ethnic customs. The songs of the Zhuang, the dances of the Yao, the festivals of the Miao, and the buildings of the Dong are called the "four unique ethnic customs" of Liuzhou. Among them, the Sanjiang area is the birthplace of Liuzhou. Dong "Da Ge" folk music is also the main birthplace of Dong "Da Ge" folk music. Dong "Da Ge" is the main type of Dong folk music. Vernacular songs, wine songs, marriage songs, and other folk songs all belong to the category of "Dong "Da Ge"" music. The Dong people are accompanied by their songs in every aspect of their lives. Many Dong songs are also created and inspired by people under such conditions.

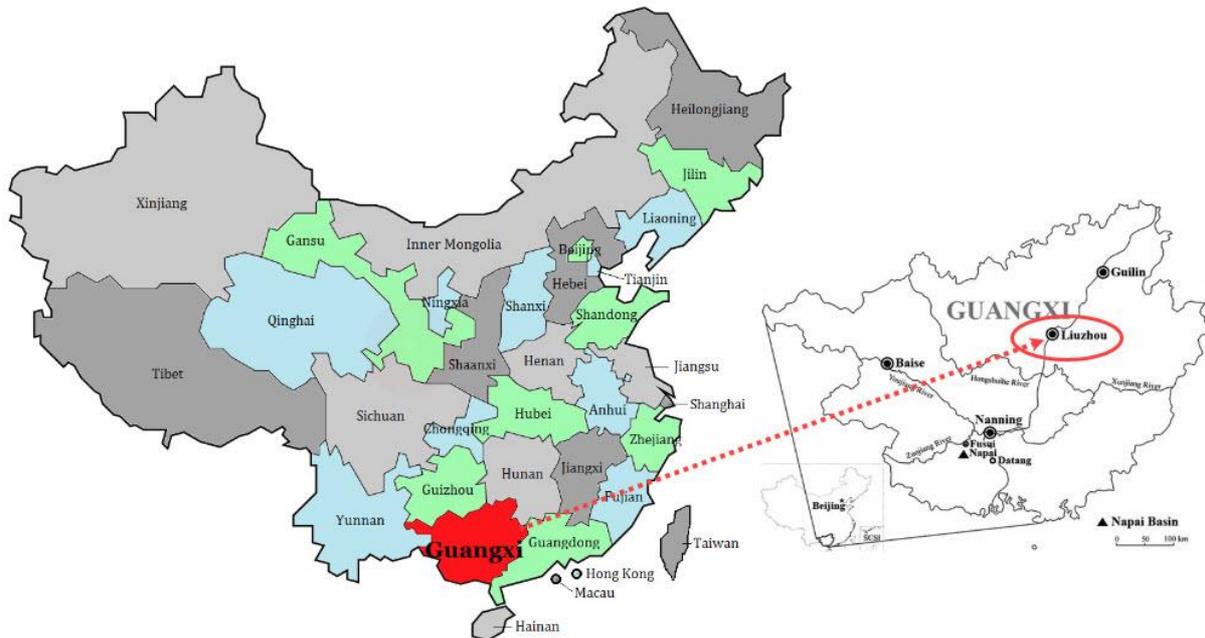


Figure 1: Map of Liuzhou, Guangxi Zhuang Autonomous Region.

Source: <https://chinafolio.com/provinces/guangxi-province>, 2023; Mo et al., 2016).

2.2 Key informants

2.2.1 Ms. Chunyue Wu: The representative inheritor of Dong "Da Ge" folk music in Guangxi Zhuang Autonomous Region. Instructor of the free training class of Dong "Da Ge" folk music in Liuzhou Mass Art Museum and Sanjiang Dong Autonomous County Cultural Center.

2.2.2 Ms. Guangchun Yang: Liuzhou Art Theatre is a national second-class actor, and the city-level inheritor of the "Da Ge" folk music of the Dong ethnic group.

2.3 Data collecting

Collect data through literature analysis and field surveys. To conduct an in-depth study, the researchers consulted literature from libraries and cultural centers and completed literature analysis using online platforms such as the China National Knowledge Network (CNKI). Subsequently, the researcher went to the study site (Sanjiang Dong Autonomous County, Liuzhou, China) for field investigation several times. Museums and archives will be visited, and at the same time, questionnaires will be given out in non-Dong areas to record the current situation and musical characteristics of Dong "Da Ge" folk music by putting together questionnaires, interviews, observations, recordings, and videos.

2.4 Data analysis

Uses ideas and theories to look at the data and keep track of how goals and terms are being defined. To conduct research objective, will use quantitative research methods and field survey data analysis and production techniques. Go to Liuzhou City to do a field survey and analyze the questionnaire results through observational sampling and interviews. You can also learn from my key informants, Ms.Chunguang Yang and Ms.Chunyue Wu, and get useful information from them.

3. Results

3.1 The Historical and Contemporary Status of Dong Ethnic Group's "Da Ge" Folk Music in Liuzhou, China

Due to its remote geographical location and lack of interaction with the outside world, the Dong ethnic group in Liuzhou is largely confined to Liuzhou and has not been widely popularized. According to the results of this field investigation, although the local government and the promoters of Dong "Da Ge" folk music highly recognize the cultural value of Dong "Da Ge," so far, the development, promotion, innovation, and dissemination of Dong "Da Ge" folk music have not been satisfactory. For example, compared with "Tibetan music," Tibetan music has been widely used as a musical element in major music creation types. Since then, Dong music has existed in addition to Liuzhou music, and the Dong people live together in southwestern Hunan, Guizhou, and Guangxi. There are few traces of other creatures. More importantly, the music of Dong "Da Ge" has obvious traces of foreign cultural influence in the dissemination of national and local culture. Regarding the development and utilization of Dong "Da Ge" folk music in Liuzhou, the researchers contacted relevant informants to learn more.

As the inheritor of Liuzhou's Dong "Da Ge" folk music, Ms. Wu once said in an interview: "It's completely different now; there is no mobile phone, no TV, no tablet; we sit together and sing and dance most of the time." That At that time, young people still liked the music of Dong "Da Ge," which is also an inseparable part of our lives. But for today's young people, their time has been taken away by pop singers and movie stars. Dong "Da Ge" folk music is not the same as it used to be so pure that few young people could calm down, ponder, and sing the local "Dong "Da Ge" Today, Dong "Da Ge" folk music inheritance is becoming more and more difficult. You will find that few young people are willing to do this, and it is difficult to inherit Dong "Da Ge" folk music. (The content comes from Ms. Yang Guangchun, the inheritor of the eldest brother of the Dong ethnic group, on May 15, 2021. Location: Liuzhou, Guangxi.)

With the above viewpoints in mind, the investigators went deep into Liuzhou City, where the Dong ethnic group lived, to conduct on-the-spot investigations. Observe the life of the local Dong villages, especially how the local Liuzhou Dong songs developed. Investigators saw that it should be used on occasions where Dong "Da Ge" folk music should be used, such as in important Dong festivals and traditional Dong marriage ceremonies, but it was not useful, and modern Western music was used instead. The researchers found in the survey that the use of Dong music has been declining in recent years. Because of the invasion of foreign cultures and populations, this series of places that originally used Dong music gradually transitioned to the use of modern music. During the investigation, investigators were fortunate enough to attend a wedding banquet of a pair of Dong people and found that the wedding banquet used a Western wedding march. During the wedding, three songs of Chinese pop music were played in sequence. I didn't hear the Dong "Da Ge" folk music of the Dong ethnic group. This gradually westernized music style hinders the development and utilization of Dong music to a certain extent. This also confirms what Ms. Wu said in an interview with today's young people, whose time has been taken away by pop singers and movie stars. The Dong "Da Ge" folk music of the Dong ethnic group is not as pure as it used to be, and few young people can calm down and think about singing the local music of the Dong "Da Ge" folk music of the Dong ethnic group. To do so, it is also difficult to inherit the Dong ethnic group's view of Dong "Da Ge" folk music.

In the field research, the researchers also randomly interviewed 30 local Dong young people in Liuzhou and found that the new generation's (post-2000) forms of entertainment in daily life have increased significantly, and many young people rarely use Dong music in their lives. In conversations with some elderly people, the researchers also learned that many middle-aged people have begun to change their concepts, gradually accept foreign music, and apply foreign music forms to their customs. This directly leads to the low degree of development and utilization of Liuzhou's Dong "Da Ge" folk music at this stage.

Through interviews with the interviewees and the researcher's field investigation, the researcher found that the development and utilization of Dong "Da Ge" folk music in the Dong people's settlements is not particularly ideal, especially in the context of the increasingly prosperous contemporary culture. The reason is partly due to the

impact of foreign culture, which has led to a decrease in the status and acceptance of traditional national culture. On the other hand, it is also because the government does not pay enough attention to this culture and art.

3.2 The innovation and creation status of Dong Ethnic Group's "Da Ge" Folk Music in Liuzhou, China

In 2006, the Dong music in Liuzhou, Guangxi, was approved by the State Council to be included in the first batch of the national intangible cultural heritage list. The so-called Dong "Da Ge" folk music is composed of unaccompanied multi-voice folk songs sung collectively by the Dong people. Usually during festivals, male and female choirs sit on the drum tower or around the fire pool and sing to express their feelings and praise nature. Driven by the national intangible cultural heritage, the living area of the Dong ethnic group in Liuzhou has ushered in a boom in people's livelihoods for a period of time. Many Dong ethnic groups have walked out of the mountains and entered first-tier cities such as Beijing, Shanghai, and Guangzhou. The Dong Choir performed at the opening ceremony of the Shanghai Rongan Kumquat Promotion Conference. The colorful intangible cultural heritage music performance mechanism of "Mulou Song Haiduo Nightstand" in Xuhui District, Shanghai; the 5th Longji Rice Terraces Cultural Festival and China; Great Guilin Tourism; Hunan Original Ecology Tourism Festival; and "Dong ethnic group Songs" exhibition activities. The local "Da Ge" music art troupe also appeared on the stage of the CCTV Young Singer Competition. The musical art of Dong songs has attracted the attention of many domestic musicians, and many musicians have innovated in the creation of Dong songs, boldly combining Western instruments such as piano and violin with Chinese national instruments such as the erhu, pipa, and dulcimer in original Dong songs. Singing in unison, the experimentation and bold innovation of Chinese and Western music have achieved good results.

First, most of the young people have gone out because the economic conditions of the Sanjiang Dong community in Liuzhou are not very good, so many young Dong people who go out have a sense of inferiority. For example, when I first walked outside the Sanjiang Dong Autonomous County, I could not even speak Mandarin. I can't even say that when others sing RAB and blues, I can only hum my own "Dong "Da Ge"" music. At that time, my sense of identification with Dong "Da Ge" folk music was relatively low. They always thought it was a minority, and it was inevitable that there would be a "favorite foreigner" mentality. Dong "Da Ge"'s musical charm began to engage in the inheritance of Dong music. To be honest, many young Dong people's attitudes toward Dong music haven't changed." If there is no inheritor and promoter of local music culture, do you think it can still be innovative?" But now that I'm back to work in Sanjiang.

With the above viewpoints in mind, the researchers went deep into the villages of the Dong ethnic group in Liuzhou City, conducted field investigations, and learned and observed the innovative creation of the music of the Dong ethnic group. In the actual investigation, the researchers found that the local government, to seize the opportunity, combined Dong "Da Ge" folk music with tourism. Judging from the survey results, there are Dong tourist attractions in many places in Liuzhou. Therefore, during this period, the music of Dong "Da Ge" gained more opportunities to be displayed to the outside world. However, with the further in-depth investigation of the researchers, the combination of this seemingly prosperous Dong "Da Ge" folk music and tourism is also short-lived due to problems such as the settlement of the Dong people and the development of cultural resources. The development of the Dong tourism economy is not very ideal. In the past few months that the researchers conducted the research, they initially calculated that there were only about ten groups coming to Dong Village each month, and on average, there were only three to four groups per week. Moreover, the researchers interviewed the only tourists who came to Dong Village and found that they were all from Liuzhou City and surrounding areas, so Dong tourism only stayed in some surrounding provinces, and the number of tourists who could effectively drive the growth of the tourism economy in economically developed provinces was not many. In addition, due to local tourism policies, many scenic spots choose commercial music and Dong music in pursuit of short-term interests. Therefore, many tourists from other places do not have a deep understanding of the music of Dong "Da Ge". In addition, the Dong "Da Ge" folk music used in some tourist attractions cannot be effectively combined with local folk customs, which separates music from art and leaves too much of an impression on tourists.

Through the relevant interviews with the interviewees and the in-depth research of the researchers' on-the-spot investigation, they found that, on the surface, the music of Dong "Da Ge" has a long history of development, is

rich in variety and form, and should have a good space for innovation. But the innovative development of Dong "Da Ge" folk music is not optimistic, and it is often just an innovative combination with other instruments or music on a whim. Once fresh, it stays at the previous stage without any innovative expansion. The combination of Dong "Da Ge" folk music and tourism and other industries is only a flash in the pan. However, the objective reasons for the lack of innovation are manifold. One of the biggest reasons is that people have a low sense of musical identification with Dong "Da Ge" folk music. This also confirms what Ms. Yang said: if a local folk music has no successors and promoters, how can we talk about innovation? If the national culture is complacent, it will inevitably be eliminated. This has been proven countless times in the history of the development of literature and art.

3.3 The preservation status of Dong Ethnic Group's "Da Ge" Folk Music in Liuzhou, China

The preservation status of Dong Ethnic Group's "Da Ge" Folk Music in Liuzhou, China.

Most of the music scores now need to be preserved for a long time. We do not have the music scores of the Dong ethnic group songs. We used to teach and study, which led to a relatively low singing rate for a long time. With the development of the past few years, our Dong music composers have a history, and many Dong "Da Ge" songs have been recorded, but only one piece of music has been preserved. As far as I am aware, there are over 100 popular pieces of Dong "Da Ge" folk music that are used for various occasions such as weddings, festivals, farming, and some that are about natural scenery. There appear to be many Dong "Da Ge" songs, but there are only a few dozens of pieces of paper music. In fact, the Dong ethnic group has been a singing and dancing nation since ancient times. Therefore, compared with other ethnic minorities, the musical form of the Dong ethnic group is richer in both musical content and musical expression. Unfortunately, unlike other nationalities, the Dong ethnic group does not record music in literary works, it is mainly passed on by word of mouth, and it is easy to get lost.

Through the interviews with the interviewees and the actual investigation and research in the Dong village, it is found that the Dong ethnic group's "Da Ge" music in Liuzhou has been classified in the long-term production and life of the Dong ethnic group, including love, legend, etiquette, and so on. However, since the Dong people do not have written characters, there is no precise standard norm for this classification. On the contrary, according to the relevant literature statistics of the researchers who read the Dong ethnic group "Da Ge" music, the music resources of the Dong ethnic group "Da Ge" music in various places are relatively rich, and there are about 100 kinds of music and tunes that can be handed down. Although there are some differences in Dong music in different places, there are still some common features. From the perspective of music form, Dong music can be divided into the northern dialect area and the southern dialect area. In the southern dialect area, it is divided into multi-voice, single-voice, and folk songs. Among them, the multi-voice part can be divided into three types: drum tower "Da Ge", vocal "Da Ge", and narrative "Da Ge". The music of the Dong ethnic group in the northern dialect area is mainly monophonic and is divided into folk song "Da Ge", performance "Da Ge", good deeds "Da Ge", and wedding "Da Ge". Judging from the existing Dong "Da Ge" folk music retained in the Dong music, its categories are still relatively rich, which can be divided into drum tower "Da Ge", vocal "Da Ge", children's "Da Ge", narrative "Da Ge", custom "Da Ge", operas, mixed songs, and more. Judging from the preservation status of Dong ethnic group "Da Ge," in the past, Dong ethnic group "Da Ge" was mostly passed down by word of mouth, and there were very few records.

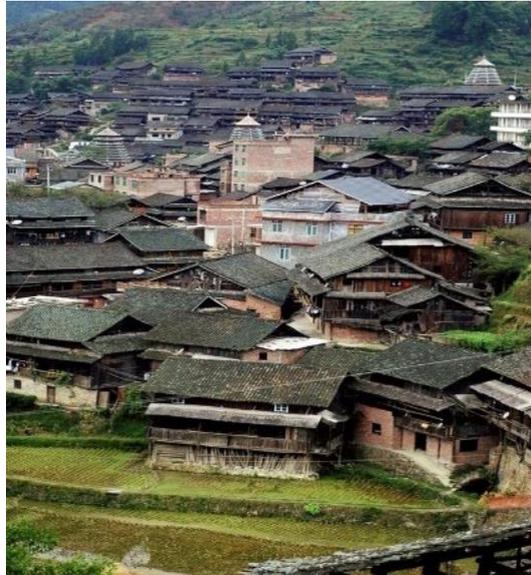


Figure 2: Aerial view of Sanjiang Dong Village in Liuzhou City.

Source: Wu Hengbin, (2021).

3.4 The Status of Singers of Dong Ethnic Group's "Da Ge" Folk Music in Liuzhou, China

Although Dong "Da Ge" folk music is an important part of China's intangible cultural heritage, compared with other intangible cultural heritage, the degree of Dong "Da Ge" folk music is not as widespread. One of the most important factors is the situation of local Dong singers. The formation of Dong "Da Ge" folk music mainly comes from the summary of the historical life of the Dong ethnic group, which reflects the strong local national culture. From the perspective of Dong ethnic group music alone, it is difficult to feel the resonance of Dong ethnic group music if you do not understand Dong ethnic group culture and the form and content of music.

Nowadays, most of the people who are engaged in the great songs of the Dong ethnic group are mostly the elderly, and the young people leave this place in order to earn more money. Even many people who stay in the Dong ethnic villages are not full-time singers. They are usually busy. You can only come and sing when you have time to do farm work. Moreover, among the singers who are learning to sing the great songs of the Dong ethnic group, some people really started to sing when they were young, some people started to learn at the age of 13 or 14, and some people just started to sing. It's just a temporary study to be able to cope with some occasions. When you enter the Dong Village, you will notice that all the Dong ethnic group choruses have more girls than boys, whether they are young or old, and this includes some who are in the process of teaching singing. There are many girls. There are not many boys. There is even an all-girl chorus. Because they don't have boys, they say that boys must go out to work and don't have time to sing.

In the actual investigation and research, the researchers found out the basic information about the Dong ethnic group's Da Ge music singing team and the members of the five Dong ethnic group natural villages in the Dong ethnic group inhabited area of Liuzhou City, including name, age, gender, whether there is a job, etc. Judging from the statistics, there are currently 23 Dong choirs in the Dong villages in Liuzhou City. According to the total number of natural villages in the 5 villages, there are only 4.6 choirs in each of them on average. Among the 23 Dong ethnic group choruses, six are purely female choruses. There are also 23 members of the Dong ethnic group chorus on the list, for a total of 723 people. The average for each chorus is 31.43 people. In terms of gender, among the 723 singers of Dong ethnic group, 508 are women and 215 are men, and among these 215 men, quite a few are old men. The researcher interviewed the captain of the all-girl chorus about the fact that there were no boys in the chorus. She stated that forming a Dong ethnic group chorus is difficult. The boys in the village have all gone out to work to earn money. Now the girls' chorus is still being formed with great difficulty. Some are very old, and some are very young. In addition, the researchers conducted a detailed classification of these 723 people and found that many of these 723 people went to work near their homes during the day or went to work to subsidize their

families. They could not be found in the village during the day. The village then rehearses, and when the farming is busy, the chorus can't even gather once a week or two.

3.5 The transmission and inheritance status of the Dong ethnic group's "Da Ge" folk music in Liuzhou, China

The development of Dong ethnic group "Da Ge" music depends to a certain extent on the inheritance and dissemination of Dong ethnic group "Da Ge" music. In recent years, to preserve and continue this intangible cultural heritage in Liuzhou, the government has done a lot of work to develop Dong ethnic group "Da Ge" music for free. Training class, organization of the relevant Dong ethnic group "Da Ge" music troupe and putting the Dong ethnic group "Da Ge" music, originally only in the Dong ethnic group's village, on stage so that more people can understand this type of music better, inherit it, and carry forward this national music culture Carry out the declaration of the inheritors of the Dong ethnic group's great songs. The inheritance of the great songs of the Dong ethnic group has cultivated fertile soil.

Although the national level pays more and more attention to the protection of local intangible cultural heritage, my own understanding of Dong "Da Ge" folk music is not very deep. Like many teachers and classmates, before I became the inheritor of the music of the Dong ethnic group, I The understanding of Dong "Da Ge" folk music is limited to learning to sing. I have never heard the real meaning of "Dong "Da Ge"" music! Although such a result makes me ashamed, the educational resources in Liuzhou itself are very poor, and it is advocated in places where educational resources are developed. Quality-oriented education is a natural education, but it is obviously not suitable for us. Therefore, we only understand the cultures that will not appear on the test paper, such as Dong "Da Ge" folk music.

There are many reasons why the music "Da Ge" folk music is not popular. First, there is only two million Dong propane because in China, and these two million people are scattered in many provinces, it is difficult to form a joint force like this. On the Donghand, Dong "Da Ge" folk music in addition to traditional folk songs and dances, the form of performance should be combined with dances with the characteristics of the Dong ethnic group. The music of the Dong nation will be greatly reduced. In addition, most of the local government funds are used to develop the local economy, which can significantly improve the happiness index of people's lives. "Few funds are used for local culture, which is a relatively hidden value." And what's the worst background music for people who get worse and have absolutely no idea why they want it? Now most young people don't want to do folk music, so more and more young people choose pop music. However, it is difficult for the music of Dong "Da Ge" to attract young people's attention in terms of development space, expression, or music. "Audience group. Therefore, there are fewer and fewer researchers studying the music of Dong "Da Ge" now.



Figure 3: Dong "Da Ge" music informants teaching.

Source: Wu Hengbin, (2021)

In addition, the researchers found in the Dong villages that the people who could get together to practice the Dong "Da Ge" folk music were usually older groups. There are very few young people in Dong villages. Through regular observation for a week, the researchers found that only 24 young Dong people could be seen every day. This shows that young Dong people are not very willing to sing. In the matter of the Dong nation's great songs, the choice of music is more inclined toward pop music. At this point, the statement of Ms. Wu Chunyue, the interviewee, is also confirmed. To gain a clearer and more in-depth understanding of how the Dong "Da Ge" folk music was spread,

the researchers designed a questionnaire on how people were exposed to Dong “Da Ge” folk music and conducted the survey in non-Dong communities. A total of 350 questionnaires were distributed, and 336 valid questionnaires were recovered. After finishing the questionnaire. Through sorting out 336 valid questionnaires, it was found that the main ways for people in non-Dong communities to contact Dong “Da Ge” folk music are through books, television, networks, broadcasting, and cultural activities. People learn the most from the network (28 percent), followed by television (21 percent). Following that, 17 percent came from cultural activities, 14 percent from books, 11 percent from broadcast, and 9 percent from other sources.

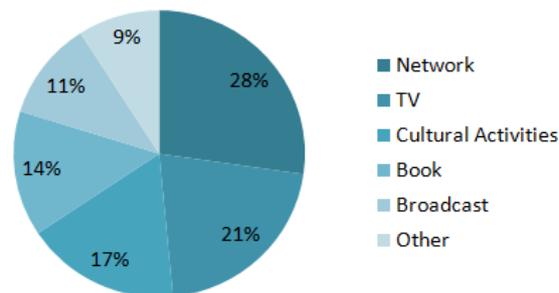


Figure 4: “Da Ge” folk music the contact way.

Source: Wu Hengbin, (2021)

In terms of communication effect, first and foremost, the communication effect of folk songs as a type of folk songs is relatively backward. Judging from the current popular folk songs in China, almost every local folk song has representative works that can be widely spread among the people. For example, in the famous song "Shandan Danhong" in northern Shaanxi, Li Ruobing, Guan Heyan, Xu Suo, and Feng Fukuan wrote the lyrics; Liu Feng composed the music; and Yun Enfeng sang it. It was later sung by many artists, especially Zhu Fengbo, a singer in the 1970s. At present, in China, when children from seventy to seven years old refer to folk songs in northern Shaanxi, it is easy to add two lines of Shandanhua, which is also the credit of folk songs in northern Shaanxi. The song quickly "went out of the circle" in China. such as Shandong folk song Yimeng Mountain as above, Sichuan folk song Kangding love song, Uyghur folk song "No Relatives," Anhui folk song August osmanthus everywhere, and Jiangsu folk song willow. Emerald green, Hunan folk songs, Liuyang River, etc., are all deeply rooted in the hearts of the people. Local folk songs are the direct embodiment of local culture. For most people, knowledge of an unfamiliar place is likely to come from a simple folk song. However, like the well-known folk songs mentioned above, the Dong Da Ge music has no similarly successful songs. From the perspective of communication personnel, the dissemination of local folk music cannot be separated from the support of professional music practitioners. Judging from some representative local folk songs in China, a song is accompanied by a professional singer, and a song or a person drives the popularity of the entire folk music. Judging from the development of Dong music communicators after the founding of New China, at the beginning of the founding of New China, some professional music researchers began to go deep into Dong villages to conduct detailed field investigations and sort out Dong music and related materials. Soon, the Dong ethnic group’s “Da Ge” folk music monograph and the Dong ethnic group folk song monograph were published. By 1958, the Liping County Dong ethnic group’s “Da Ge” folk music Choir had sung a total of 100 "Da Ge" of different tunes, which played a great role in the spread of the Dong ethnic group’s “Da Ge” folk music. Afterwards, the Dong opera "The Beauty of Qin Niang" was filmed into a colorful literary film, which was screened nationwide. The Dong singer Pan Laoti is deeply loved by the Dong people. However, since then, the publicity surrounding the Dong Da Ge music has been silent. There will be very few researchers specializing in the development of Dong Da Ge music until 2020. One of the reasons for this study is that there are few professional research literatures on Dong “Da Ge” folk music.



Figure 5: Home of the Dong "Da Ge" singer - the singer is teaching.

Source: Wu Hengbin, (2021)

As a result of a variety of factors, the inheritance and development of Dong "Da Ge" folk music are limited. At present, except for some researchers who are related to or live relatively close to the Dong ethnic group, they know about the "Da Ge" music of the Dong ethnic group, but it is still a relatively unfamiliar thing to the public.

4. Discussion

From this study, we can find that some aspects of Dong ethnic group's "Da Ge" folk music have not changed, but some aspects have. For example, the results of the study on the contemporary development of Dong "Da Ge" show that the classification of Dong ethnic group's "Da Ge" folk music is divided into "Da Ge" music for drums, "Da Ge" music for voices, "Da Ge" music for narratives, and "Da Ge" music for narratives. "Da Ge" music, narrative "Da Ge" music, children's voice "Da Ge" music, mixed voice "Da Ge" music, and so on. This is consistent with the research results of Du Yong (2011). In terms of the development and utilization of Dong ethnic group's "Da Ge" folk music, only Dong ethnic group's "Da Ge" folk music is combined with the local tourism industry, which is consistent with the research results of Feng Yujie and Meng Aijun (2014). In terms of melodic tuning, the Dong ethnic group's "Da Ge" folk music mostly adopts the "YU" tuning of the Chinese national tuning, which is consistent with the findings of Lau et al., (2008).

Meanwhile, the development of Dong ethnic group's "Da Ge" folk music has also changed in modern society. The Dong ethnic group's "Da Ge" folk music has changed in the form of singing. In contemporary society, more and more Dong ethnic group's "Da Ge" folk music is performed with the accompaniment of modern musical instruments, when the Dong ethnic group's "Da Ge" folk music was sung naturally with no accompaniment, but nowadays it is sung with modern musical instruments. At the same time, the music of Dong "Da Ge" has also changed in terms of the transmission of the singers. The way of transmitting the Dong ethnic group's "Da Ge" folk music has changed from the original oral transmission without music by the fixed singers to the training of the modern inheritors with music by the government. The modern transmission of Dong ethnic group's "Da Ge" folk music is different from the study of Fang Jishen (1959).

By analyzing the representative works of the Dong ethnic group's "Da Ge" folk music, the researcher also found similarities and differences in the musical characteristics of the Dong ethnic group's "Da Ge" folk music compared with those of the previous researchers. Take the Dong "Da Ge" song "Da Mountain is Beautiful" as an example. The melody of the Dong ethnic group's "Da Ge" folk music is divided into two parts. The melody of the high part is always higher in pitch and continues smoothly in the high part. The melody of the lower part is always lower in pitch and continues smoothly in the bass part. The melody of the lower part will have the quality of continuous bass to set off the sound of the higher part, forming a harmonious state. This variation in the melody enriches the musicality of the song. This is consistent with the findings of scholar Yang Yijun (2013). In terms of timbre, the high voices are sharp and bright, and this sharp and bright quality of the high voices continues throughout the song. The lower part has a broad and mellow tone, giving a sense of solidity. The contrast between the high and low parts of the melody and the staggering of the high and low parts of the timbre give people an obvious aural contrast. In terms of rhythm, the rhythm of the lead part of the song is soothing, and after the lead part, the song enters the divided chorus, where the rhythm suddenly moves from relatively calm to compact and fast, in contrast

to the previous lead. And this tight rhythm continues throughout the song. The song ends smoothly with the addition of a soothing rhythm at the end of the song. The rhythm of the song is complex, with many changes of tempo, forming a typical staggered tempo, which enriches the expressiveness of the song. It makes the whole song more flexible and versatile. This is consistent with the findings of scholar Zhang Xin (2019). In the use of tuning, the whole song is in the Chinese folk tune "YU," which is quiet and soft, mournful, with obvious minor characteristics, and the feather tune is like flowing clouds and water. What is the reason why this "YU" tune has been used in the Dong ethnic group's "Da Ge" folk music for a long time? According to researchers, this is consistent with the Dong people's view of water as their soul and their cultural character of being as good as water.

In the long-term development of Dong ethnic group's "Da Ge" folk music, there is the essence that has been inherited, and there are also changes in the process of development. The reasons for these changes are many. During the long-term changes and development, the Dong ethnic group's "Da Ge" folk music has always maintained its own unique artistic characteristics, and on this basis, with the development and changes of society, the Dong ethnic group's "Da Ge" folk music has also incorporated a lot of various cultural and artistic elements that are popular today. elements. To sum up, this study has produced different results from previous studies due to the different perspectives of the researchers and the timing of the study. This may also be due to the different choices of the researcher's study sites in the study, the different levels of data collection in the fieldwork, and the different interviews conducted during the survey. Therefore, the results of this study validate and, at the same time, differ from previous studies. In future studies, further improvements in research methods and more detailed research on the content of the study will be needed.

References

- Britannica, T. Editors of Encyclopaedia. (2020). *Dong*. *Encyclopedia Britannica*. <https://www.britannica.com/topic/Dong>
- Chaisingkananont, S. (2014). *The Quest for Zhuang Identity: Cultural Politics of Promoting the Buluotuo Cultural Festival in Guangxi, China*.
- Cheung, S. W. (1996). *Subject and representation: identity politics in southeast Guizhou*. University of Washington.
- Choi, Y. L. E. (2018). *Conductor's Guide to Lyric Diction in Standard Chinese*. University of Toronto (Canada).
- Covell, R. R. (1998). *Pentecost of the hills in Taiwan: the Christian faith among the original inhabitants*. Hope Publishing House.
- Ding, Y. (2019). *Capitalizing Race: Diasporic Narratives and Global Asia*.
- Goh, Y. S., & Wu, Y. (2017). *Teaching Chinese as an international language: A Singapore perspective*. Cambridge University Press.
- Guo, C. (2021). *Chinese and Other Asian Influences in Debussy's Piano Music*. The University of Alabama.
- Guo, K. (2019). *Creating a Cultural Context for Dong and Miao Folk Music Using an Orff-Inspired Methodology*. Doctoral dissertation, San Jose State University.
- Han, M. (2021). *Everyone Listen Close—Wanp-Wanp Jangl Kap: The Yandong Grand Singers*. Polyphonic Grand Songs from the Dong in Guizhou Province in China.
- Hwang, D. H. (2008). *Yellow face*. Dramatists Play Service Inc.
- Jacoby, N., Polak, R., Grahn, J., Cameron, D., Lee, K. M., Godoy, R., ... & McDermott, J. H. (2021). Universality and cross-cultural variation in mental representations of music revealed by global comparison of rhythm priors.
- Jishen, F. (1959). Dongzu lanluge de shouji yu yanjiu baogao. A report on the collection of and research into Kam road-blocking songs. *Yinyue yanjiu*, 4, 80–91.
- Lau, F. (2013). Voice, culture, and ethnicity in contemporary Chinese compositions. In *Vocal Music and Contemporary Identities*, 110-126. Routledge.
- Lau, F., Chow, K. W., Hon, T. K., Ip, H. Y., & Price, D. C. (2008). Nationalizing Sound on the Verge of Chinese Modernity. In *Nation, Modernity, and the Restructuring of the Field of Cultural Production in China: Beyond the May Fourth Paradigm*, 209-226. Lanham, MD: Lexington Books.
- Maags, C., & Trifu, I. (2018). Protecting the weak? Tracing UNESCO's influence on Intangible Cultural Heritage regimes in Japan and China. In *Protecting the Weak in East Asia*, 224-253. Routledge.
- McKhann, C. F. (1995). The Naxi and the nationalities question. *Cultural encounters on China's ethnic frontiers*, 39-62.

- Mo, J., Buffetaut, E., Tong, H., Amiot, R., Cavin, L., Cuny, G., ... & Jiang, S. (2016). Early Cretaceous vertebrates from the Xinlong Formation of Guangxi (southern China): a review. *Geological Magazine*, 153(1), 143-159.
- Oun, M. A., & Bach, C. (2014). Qualitative research method summary. *Qualitative Research*, 1(5), 252-258.
- Shih, C. Y. (2007). *Autonomy, ethnicity, and poverty in southwestern China: The state turned upside down*. Springer.
- Shih, C. Y., & Shih, C. Y. (2007). Performing Ethnicity: Politics of Representation in Multi-Ethnic Guilin. *Autonomy, Ethnicity, and Poverty in Southwestern China: The State Turned Upside Down*, 29-39.
- Shouyong, P. (2020). Local Histories and New Museological Approaches in China. *In World Anthropologies in Practice*, 117-130. Routledge.
- Xie, J. (2008). Inheritance of traditional music faced with globalization impact in schools of mainland China. *Music Education Policy and Implementation: International Perspectives*, 173.
- Xu, N., & Karin, K. (2020). *The "Liao Songs" of Zhuang People in Ping Guo, Guang Xi, China*. Doctoral dissertation, Mahasarakham University.
- Yan, X. H., & Dapradit, P. (2022). THE DONG IN MINE GUIDEBOOK BY FIELD WORK AT SCHOOL OF MUSIC AND DANCE, NANNING NORMAL UNIVERSITY. *Asia Pacific Journal of Religions and Cultures*, 6(2), 141-163.
- Yang Yijun. (2013). From Sounds of Nature to Sounds Civilized: Cultural Tradition of Dong Minority Music. *Hundred Schools in Arts*, 29(A01), 32-35.
- Yong, D. (2011). Arts of the Dong nationality song - Comparison between big songs and small songs. *Journal of Nanchang College of Education*, 26(10), 20-21,25.
- Yujie, F & Aijun, M. (2014). The status and role of music in the social life of Dong people - A case study of Gaozeng Township, Congjiang County, Guizhou province. *Annals of Heilongjiang History*, (7), 58-59.
- Zhang Xin. (2019). Inheritance and Evolution of "Da Ge" music in Zhaoxing, Liping, Guizhou. *Northern Music*, (22), 4-5.

A Study on the Development of Henan Zhuizi Folk Music Knowledge in Kaifeng, Henan Province, China

Chao Ren¹, Awirut Thotham²

¹ Ph.D. Student, College of Music, Mahasarakham University

² Lecturer Dr., College of Music, Mahasarakham University

Correspondence: Awirut Thotham, College of Music, Mahasarakham University, Kantharawichai, Maha-Sarakham, 44150, Thailand. E-mail: awirut.t@msu.ac.th

Abstract

The qualitative method was used in this study on the development of Henan Zhuizi folk music knowledge in Kaifeng, Henan Province, China. Based on the collected data, an interview form and questionnaire were used as research tools, and nine key informants were selected. The study results are as follows: Henan Zhuizi was mainly spread in the countryside and around the Xiangguo Temple in Kaifeng. In the past, Henan Zhuizi was sung by male actors. There are forms of self-pulling and self-singing, as well as accompaniment singing. Later, actresses appeared. At first, actresses were just a foil for actors. Most of them are male performers. gradually become a form in which the actress is the main actor, and the actor is the auxiliary. These artists came to other provinces to perform and called the Zhuizi from Henan Province "Henan Zhuizi," which is the origin of "Henan Zhuizi." The influence of Henan Zhuizi in the country reached its peak through some policy-related work that indirectly gave birth to a large number of new tracks of Henan Zhuizi and has been established to cultivate a large number of Quyi talents, which has promoted the development of Quyi, especially the development of Henan Zhuizi, since the 1970s.

Keywords: Knowledge, Henan Zhuizi, Chinese Folk Music, Henan Province, Folk Music Development

1. Introduction

Henan Zhuizi is a type of folk music from Henan Province. Henan Zhuizi is categorized in the "fishing drum" category of the "folk art" category according to the classification of Chinese traditional music culture (Mu, 1993; Mu, 1994; Song, 2017; Zeng, 2018; Zhuo, 2021; Liu, 2022). Henan Zhuizi is one of the most popular forms of folk art in China. It is called Henan Zhuizi because it is mainly accompanied by the Zhuizi string (now known as zhuohu), which was reformed from three strings of a small drum and sung in Henan dialect. It enjoys a long and profound history. The first national Zhuizi Research Association was established in Kaifeng in the late Qing Dynasty, when the earliest Zhuizi recordings were recorded (Zhang, 2010; Curtis, 2019; Wan, 2020). One of the cultural heritages selected for the first batch of China's national intangible cultural heritage list is Henan Zhuizi. Therefore, the study of Henan Zhuizi is significantly valuable in terms of history, research, and practice.

Since its formation in the early 19th century (during the reign of emperor Jiadao in the Qing Dynasty), Henan Zhuizi has developed greatly through the exploration and efforts of artists from all dynasties, especially after a group of actresses appeared on the stage in the early 20th century. In the early years of the Republic of China, a group of famous Zhuizi artists sought development outside of Henan, and they joined local musician communities in Beijing, Tianjin, and Shanghai. By the 1940s, Henan Zhuizi performances could be seen in a variety of locations, including Shenyang, Changchun, Lanzhou, Chongqing, Guilin, Nanning, Guiyang, Changsha, Guangzhou, Hong Kong, and others, indicating that Henan Zhuizi had become a major music genre with widespread influence (Tsau, 1980; Liang, 1995; Zhu, 1996; Liu, 2013; Curtis, 2019).

Facing globalization and drastic social transformation, China has transformed from an agricultural society to an industrial society at a fast pace. The development of traditional quyi has been negatively impacted by the rise of western art and pop music in all aspects. Quyi is facing a dramatic decline and even extinction. At the same time, the aging problem and urbanization in China are accelerating, which leads to a shrinking performance market in Henan Zhuizi, a shortage of talents, a lack of support, and so on. In particular, the aging problem of folk artists is becoming increasingly prominent, with a sharp decrease in the numbers of professional actors, which urges us to carry out rescue investigations, sorting, and research and come up with targeted reform measures and contribute to theoretical development. Henan Zhuizi has unique singing methods and aesthetic performances. The singing art of quyi, represented by Henan Zhuizi, is an important part of China's national vocal music performance system. However, the theoretical research on the singing methods of Quyi is relatively scarce, which is insufficient to support the theoretical system of China's national vocal music performance art and is not conducive to a comprehensive review and the inheritance of China's national vocal music art (Shepherd, 2007; Speshnev, 2013; Fan, 2020).

Mr. Liguangyu (2022, interview) said that the traditional folk art represented by Henan Zhuizi has been in an embarrassing situation where there has been a shortage of performers to inherit this form of art in the 1980s and 1990s. Back then, there was a crisis and depression in the national quiche industry. The main reasons for this are: First, since the creation limitations of traditional opera were broken, a large number of Henan Zhuizi practitioners switched to traditional operas, leading to a youth performer shortage in Henan Zhuizi. In the past, in almost every county there was a performance team, and then almost all of them were dissolved. The performance venue gradually disappeared. Newspapers and magazines related to Zhuizi are also gradually decreasing; second, the audience of the performance is mainly the elderly, and the young people are unwilling to learn and listen to the traditional folk art represented by Henan Zhuizi; third, the development of multimedia also affects the inheritance and development of Henan Zhuizi. Fourth, the widespread promotion of Putonghua has resulted in a crisis in the transmission of traditional quyi sung in dialect.

After reviewing the existing literature, the author found that the research of Henan Zhuizi is very fruitful. However, the majority of them use Henan Zhuizi's singing and history as research objects. They fail to conduct in-depth research and provide sociological and anthropological insights into Henan Zhuizi. Most of the time, existing studies don't look at the social structure and cultural background in the context of historical processes. This leaves a gap in the research. Plus, most of them focused on the surface singing of Zhuizi from the research perspective while paying less attention to Henan Zhuizi's "music ontology structure," "historical environment," and "social environment," which have left a large academic gap for this research activity (Dong, 1999; Zhang, 2017).

So, the author will mostly use ethnomusicology methods, along with historical, sociological, anthropological, and other methods, to carry out field investigations and relevant academic research on the musical characteristics, performance elements, and historical development of Henan Zhuizi, so as to provide new theoretical support and reference for the inheritance and innovation of Henan Zhuizi and also to provide relevant academic information for those interested.

2. Method

Any kind of music culture is produced in a certain historical period and social environment. In other words, a certain music culture as a text and its historical facts are interrelated and interconnected. Therefore, when studying

the development history of Henan Zhuizi, I think we can't just pay attention to the ontological development history of Henan Zhuizi. At the same time, we should pay attention to the historical and social environment of Kaifeng in the historical period, so that I think we can vertically understand the development history of Henan Zhuizi. However, in practice, we will find that there are differences between historical facts and historical documents. Any historical text is not only a subjective construction process but also a narrative model based on mainstream cultural identity (Zhao, 2021). So, we should not only look at historical documents to learn about how Henan Zhuizi has changed over time. We should also look at how Henan Zhuizi is used today and collect relevant oral histories to learn as much as possible about how it has changed over time so that we can reconstruct it.

The author had to interview 9 informants, including 2 scholars and 7 musicians. I explored the role of immigrants in the development of Henan Zhuizi from the interviews with scholars; I explored the music and singing structures of Henan Zhuizi from the interviews with musicians; and I studied the inheritance and development of Henan Zhuizi deeply. The research methods of this article are as follows: 1) Documentary data method: through collecting, sorting out, and identifying existing documents and forming a scientific method of understanding by studying these data. 2) Field investigation method: Field investigation is the basic method to obtain first-hand information.

3) Qualitative research method: Explain the collected data (Oun & Bach, 2014).

2.1 Research site

Henan Province is the birthplace of Henan Zhuizi. Henan Zhuizi is mainly spread in the western, central, northern, and eastern regions of Henan Province. Since 1905, Henan Zhuizi has been the main representative of the *quyi* form in Henan Province. Kaifeng City is the main carrier of contemporary Henan Zhuizi. Zhao Zheng is a Henan Zhuizi master from Kaifeng to China, as well as one of the founders of Henan Zhuizi.

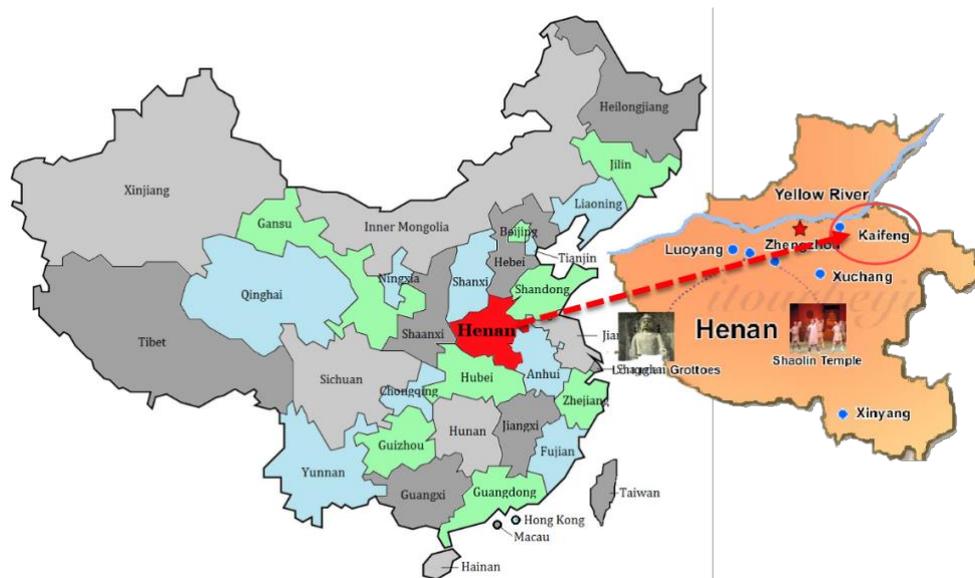


Figure 1: Map of Kaifeng, Henan Province, China.

Source: <https://chinafolio.com/provinces/guangxi-province> & <https://www.itourbeijing.com/china-map/henan>, (2023).

2.2 Key informants

The criteria for selecting key informants were provided by Mr. Chen Shengli, the inheritor of China's national intangible culture. They are:

- 1) They have been engaged in the creation, singing, or performance of Zhuizi music for at least 30 years.
- 2) They understand the history, culture, and development of Zhuizi.
- 3) They have won the highest award in various Zhuizi competitions.
- 4) They must be the above-provincial-level Zhuizi inheritors awarded by the government.
- 5) They have made outstanding contributions to the dissemination and development of Zhuizi.

Table 1: Investigators

No	Name	Gender	Birth year	Site	Profession	Positional
1	Dang Zhigang	male	1958	Zhengzhou	Zhuizi performance	Professor
2	Li Guangyu	male	1970	Zhengzhou	Scholar	Professor
3	Chen Meisheng	female	1968	Zhengzhou	Zhuizi performance	Professor
4	Li Aihong	female	1967	Kaifeng	Zhuizi singer	Professor
5	Liu Jingliang	male	1970	Zhengzhou	Zhuizi researcher	Professor
6	Xiang Kui	female	1975	Kaifeng	Dulcimer player	Professor
7	Zhao Zhigang	male	1980	Zhengzhou	Zhuizi singer	Tutor
8	Qin Xiaomin	female	1983	Zhengzhou	Zhuizi singer	Tutor
9	Han Liang	male	1979	Zhengzhou	Zhuizi singer	Tutor

Table 2: The classification of investigators

No	Name	Group
1	Dang Zhigang	Key informants
2	Li Guangyu	
3	Chen Meisheng	
4	Li Aihong	Casual informants
5	Liu Jingliang	
6	Xiang Kui	
7	Zhao Zhigang	General informants
8	Qin Xiaomin	
9	Han Liang	

2.3 Data collection

During the field investigation, I prepared two forms. One is the interview record; the other is the observation record. In both forms, I designed a variety of questions, including the age, gender, and ethnicity of the respondents. Form, singing language, singing occasion, whether to inherit Henan Zhuizi, etc. Through interview and observation, statistics are made on the historical and cultural inheritance, rhythm, mode, interval, melody, and other aspects of Henan Zhuizi to provide real data for future research.

2.4 Data analysis

Based on the original historical and oral history of Henan Zhuizi, the researcher conducted in-depth research on relevant performers, researchers, and inheritors of intangible cultural heritage through interviews, observation, participation in observation, group discussion, and a questionnaire survey. Try to sort out the history of the development of Henan Zhuizi more comprehensively and deeply.

3. Results

3.1 Investigate the origins of Henan Zhuizi.

In this section, I will examine the social structures of Henan and Kaifeng in terms of immigrants, as well as the historical environment at the time, to reach a conclusion. Due to constant wars and the superior location of Henan, migration events often occur in Henan. The major immigration events in Henan Province are: 1. Hakka immigration The Hakka people moved south from the central plains; 2. the late Yuan and early Ming immigration event. In the Yuan Dynasty, the Mongol invasion caused many residents to migrate away from Henan. Most houses were empty, and the land was deserted. There was a total of 18 major immigration events in the Ming Dynasty (from the reign of Zhu Yuanzhang to the reign of Yongle). To supplement the population of Henan and Hebei, the government escorted people from Shanxi, Shaanxi Province, to supplement the population loss in Henan, Hebei, and Shandong Province.

Mr. Li Guangyu (2022, Interview) said that in 1942, because of famine, people in Henan escaped to Xi'an, Hami, and other areas by walking west along the railway line. Simultaneously, Zhuizi-themed escapes to the West and other art forms were introduced to the West. Even the Henan dialect was set as the official language in Xi'an, Xinjiang. Consider the artist Liu Zongqin, who rose to prominence in Xianyang and Xi'an before returning to Henan. He became one of the top three performers in Zhengzhou, known as "Liu Mingzhi, Liu Guizhi, and Liu Zongqin." The Henan Zhuizi troupe was also established based on Liu's contribution. It also promoted the spread of Henan Zhuizi. Another reason why Henan Zhuizi is also very popular in Shaanxi, Shanxi, and Northwest China is that Henan Zhuizi artists fled to the West in 1942 and brought it there. Therefore, it is not difficult for us to find that although war and other factors have led to many immigration events in the history of Henan, they have also provided a very important opportunity for the development of culture and music in Henan.

Kaifeng plays a very important role in Henan Province. There are three reasons: first, geographical advantages. Kaifeng is in the middle of the North China Plain and on the south bank of the lower reaches of the Yellow River. It has been a land and water transportation hub since ancient times. Therefore, Kaifeng's superior traffic conditions made it the waterway hub of the Central Plains in the early years. Based on current knowledge, it is not difficult to imagine that Kaifeng, as a waterway hub, provides very important transportation conditions for the spread of Henan's excellent traditional music culture.

In other words, due to the convenient traffic conditions in Kaifeng, people from all over the country can meet here and thus form a multi-cultural clustered community in Kaifeng. This provides a crowd base for cultural exchanges; Second, the collapse of the Lifang system has guaranteed urban nightlife institutionally. The well-practiced Lifang system in the Tang Dynasty collapsed in the Song Dynasty. According to the Lifang system, curfews were imposed in cities, which hindered the development of urban entertainment. In other words, due to the abolishment of the Lifang system in the Northern Song Dynasty, Kaifeng City was rich in a vigorous cultural and entertainment nightlife. While the Lifang system was abandoned, to better manage the city, the government issued the Xiangfang system. The practice of the Xiangfang system marked the fact that residential areas and business areas are no longer separated, which effectively promoted the development of the commodity economy and indirectly laid an institutional foundation for the rise of traditional music culture; Third, the Song Dynasty is a milestone in the history of Chinese music. I think the Song Dynasty marks the rise of secular music, and it is also the turning point where royal music is no longer exclusively appreciated within the aristocracy but also among civilians. Artists began to make a living in the era of the commodity economy. Gou Lan and Washe provide a place for cultural and artistic activities. There are various performances there, including all forms of drama and folk art. Washe is a large entertainment center for literary entertainment and commercial catering. Artists charge for their performances, which provides material support for the development of traditional music. At the same time, the performance of Washe is more down-to-earth, which enriches the variety of art categories and lays a solid foundation for excellent traditional music culture in the future.

Mr. Dan Zhigang (2022, Interview) said that when he was a teenager, he saw a performance venue like the Washe and the Goulan in the Laofengang area of Zhengzhou. In the venue, there are opera performances, quyi performances, acrobatic performances, and so on. I believe that the primitive accumulation of the early farming society led to the emergence of primitive citizens. As most citizens did not spend most of their time on farming activities, they needed to enrich their cultural life in their spare time. As a result, it provides a certain development opportunity for traditional music culture. In fact, the Washe can be compared to a large shopping mall, with Goulan serving as the stalls. In the 1990s, opera tea houses appeared in Zhengzhou. This type of opera tea house can be compared to a modern tile house and a gondola.

Therefore, to familiarize their art works and gain wider appeal from the audience, performers added local dialects to the original rap and folk art, and local folk art forms with regional characteristics were gradually formed for dissemination. Through historical documents and field investigations, I believe that Henan Zhuizi, like all traditional music created in Henan Province, is the product of Henan's geography, culture, improvisation of traditional music, and musician registration system. Because Henan provided social, cultural, and musical support for these traditional music cultures, Henan has become the home of Chinese traditional opera and folk art. Through literature analysis and fieldwork, I found that Henan Zhuizi was formed by the combination of Daoqing and

Sanxian Shu. Henan Zhuizi was founded by Zhishan Qiao. Due to the increase in the tolerance of folk music for such socio-economic and cultural reasons, the awareness of self-innovation among folk artists will increase. Therefore, the birth of Henan Zhuizi is also a historical choice in Kaifeng.

3.2 The early stage of the development of Henan Zhuizi.

Henan Zhuizi reigned from 1905 to 1914. During this period, Henan Zhuizi was mainly popular in the countryside and the area around the Xiangguo Temple in Kaifeng. There were two main characteristics of Henan Zhuizi. First, most well-known Zhuizi artists were initially Daoqing artists who gradually became famous after opting into Zhuizi. For example, Zhao Mingtang, Hu Mingshan, etc. The second feature is that the emergence of female artists has enriched the singing style of the original Henan Zhuizi. According to historical records, in 1914, Zhang Sanni and Yin Fengbao, the first two female artists of Zhuizi, appeared at the Xiangguo Temple in Kaifeng. Before 1914, only male artists sang Henan Zhuizi, mostly by themselves. Because they were popular with the public, the teahouse cooperated with Zhuizi artists. It was from this period that female artists began to appear in Henan Zhuizi. Most of the female artists who sang Henan Zhuizi in the early stages were the wives, sisters, or daughters of male artists. Gradually, due to the increasing acceptance of female Zhuizi artists in society, more female artists went to teahouses and other performance venues to share performances with male artists, thereby enriching the singing style of the original Zhuizi. These female artists add Shandong drumming, folk songs, and other arts based on the original singing style of male artists. Their creation made Henan Zhuizi develop by leaps and bounds (Zhang, 1995).

Henan Zhuizi reigned from 1914 to 1926. During this period, the main feature of Henan Zhuizi was the appearance of female Henan Zhuizi artists. As a result, the gender structure of Henan Zhuizi artists has changed. The emergence of female Henan Zhuizi artists enriches the vocal and artistic expression of Henan Zhuizi. In the past, Henan Zhuizi was performed by male artists. Later, female Henan Zhuizi artists appeared. Initially, female Henan Zhuizi artists were simply the offspring of male artists. Later, female artists gradually took over as the primary performers. During the five years from 1914 to 1919, many female Henan Zhuizi artists, represented by Ma Zhirong and Song Huaniu, appeared in Xiangguo Temple. After the appearance of female artists, the vocal form of the Henan Zhuizi has changed. With their excellent voice, they sang more music than the original male artists, which caused Henan Zhuizi to transmit quickly. During this period, many female artists went to the stage of performance at Henan Zhuizi. At the same time, Xiangguo Temple has also become the Henan Zhuizi Performance Center. According to the memories of the old artist, during this period, the performance space at Henan Temple was basically full, and the Henan Zhuizi was very popular (Li, 2020).

3.3 The middle stage of the development of Henan Zhuizi.

This period was mainly from 1926 to 1949. During this period, there were wars and disasters. As a result, many Henan Zhuizi artists left, and Henan Zhuizi came to the country. At the same time, Henan Zhuizi formed three branches, including Dongglu Zhuizi, represented by Shangqiu and Zhoukou; the West Road Zhuizi, represented by Zhengzhou, Kaifeng, and Xuchang; and the North Road Zhuizi, which spread in Northern Henan. Since 1926, natural disasters have hit Henan Province one after another, leading to social and economic turbulence and the people's suffering. Four major disasters are in point: in 1937, Henan was repeatedly hit by the four major disasters of "flood, drought, locust, and regional wars" (namely, the Yellow River burst, the great drought in the whole province, the plague of locusts, and the harassment of Tang Enbo's 13th army of the Kuomintang). Therefore, to make a living from the disasters, many victims chose to be Henan Zhuizi performers, which, objectively, promoted the spread of Henan Zhuizi to the whole of Henan Province and surrounding provinces. These artists, who perform out of Henan, named, and described their art form as "Henan Zhuizi." This is also the origin of "Henan Zhuizi." In this period, Henan Zhuizi formed three branches, including Dongglu Zhuizi, represented by Shangqiu and Zhoukou; the West Road Zhuizi, represented by Zhengzhou, Kaifeng, and Xuchang; and the North Road Zhuizi, which spread in Northern Henan (Li, 2020).

Mr. Li Guangyu (2022, Interview) said that in 1942, because of famine, people in Henan escaped to Xi'an, Hami, and other areas by walking west along the railway line. Simultaneously, Zhuizi-themed escapes to the West and

other art forms were introduced to the West. Even the Henan dialect was set as the official language in Xi'an, Xinjiang. Consider the artist Liu Zongqin, who rose to prominence in Xianyang and Xi'an before returning to Henan. He became one of the top three performers in Zhengzhou, known as "Liu Mingzhi, Liu Guizhi, and Liu Zongqin." The Henan Zhuizi troupe was also established based on Liu's contribution. It also promoted the spread of Henan Zhuizi. Another reason why Henan Zhuizi is also very popular in Shaanxi, Shanxi, and Northwest China is that Henan Zhuizi artists fled to the West in 1942 and brought it there. Therefore, it is not difficult for us to find that although war and other factors have led to many immigration events in the history of Henan, they have also provided a very important opportunity for the development of culture and music in Henan.

3.4 The later stage of the development of Henan Zhuizi.

From the 1950s to the 1960s, Henan Zhuizi reached its peak in the whole country. The result should be attributed to the impact on the registration of Zhuizi artists and some policies after the founding of New China. These indirectly gave rise to many new works by Henan Zhuizi. At the same time, Henan Quyi Group, Shangqiu Quyi Group, and other groups have cultivated many Quyi talents, which has promoted the development of Quyi, especially in Henan Zhuizi. However, since the 1970s, especially after 1979, China's rural population structure has undergone earth-shaking changes. Many laborers have entered the cities. As a result, Henan Zhuizi, which originally relied on an audience in rural areas, encountered a challenging situation. To break the deadlock and better inherit the traditional Chinese music represented by Henan Zhuizi is the mission of our contemporary musicians. (Li, 2020)

3.5 Summary.

From 1905 to 1926, most artists were formed by Daoqing artists to sing Henan Zhuizi. Henan Zhuizi artists were predominantly male in the early days of the group's formation. Later, the gender structure of Henan Zhuizi artists changed, forming a female-based performance mode. During this period, the dissemination of Henan Zhuizi was based mainly on Kaifeng Xiangguo Temple. The basic performance mode of the Henan Zhuizi also determined the basic accompaniment mode of the Henan Zhuizi in this period. The performance mode is self-singing and performing Henan Zhuizi. The accompaniment mode is one person playing Jianban and one person playing Zhuihu. Therefore, this period is very important for Henan Zhuizi.

From 1926 to 1949, the population migration caused by war and disaster was caused by the migration of the Han. Many Henan Zhuizi artists left Henan and walked across China. It has a positive effect on the spread of Henan Zhuizi, such as Liu Zongqin. She returned to Henan after becoming famous in Shaanxi.

In 1949, with the support of the country, Henan Zhuizi ushered in the main development period. Many Quyi professional colleges have been established, and many new works have been created, which has led to the rapid development of Henan Zhuizi during this period. However, after the 1980s, with the implementation of the market economy, the development of Henan pendants was blocked and gradually declined. To make the development period of Henan Zhuizi clearer, I will use the table format to summarize.

Table 3: The development period of Henan Zhuizi

Period	Factors	The Development	Effect of the development
1905-1914	Folk Culture and Economy	Combine with San xianshu and Daoqing	Spread around Xiangguo Temple
1914-1926	Change of Audience's aesthetics	Change of vocal form	Spread to urban and rural areas of Kaifeng
1926-1949	War and disasters	Wandering around for survival	spread to other provinces
1949-1978	State support	Compose and sing new words	Write many new works
1978-2022	Pop Music Flows into Society	Reduced audience	Problems in the transmission of Zhuizi

4. Conclusion

Henan Zhuizi lived from 1905 to 1926. During this period, Henan Zhuizi was mainly spread in the countryside and around the Xiangguo Temple in Kaifeng. This period has two outstanding characteristics. First, most of the famous Zhuizi artists in this period were from Daoqing, and they became famous after they changed to Zhuizi. The second feature is that the addition of female artists has enriched the original singing of Henan Zhuizi. During this period, Zhuizi actresses were greatly influenced by Shandong Pear Blossom Drum, such as Zhang Sanni. The appearance of actresses enriched the singing and expression forms of Henan Zhuizi. In the past, Henan Zhuizi was sung by male actors. There are forms of self-pulling and self-singing, as well as accompaniment singing. Later, actresses appeared. At first, actresses were just a foil for actors. Most of them are male performers, gradually become a form in which the actress is the main actor, and the actor is the auxiliary. During this period, many Zhuizi actresses, represented by Zhang Sanni and Qiao Qingxiu, appeared.

Henan Zhuizi lived from 1926 to 1949. Since 1926, due to the emergence of natural disasters in Henan Province, social and economic turbulence has caused people to live in poverty. As a result, in order to make a living, many victims learned Zhuizi and spread it throughout Henan Province and neighboring provinces. This objectively promoted the spread of Henan Zhuizi. These artists came to other provinces to perform and called the Zhuizi from Henan Province "Henan Zhuizi," which is the origin of "Henan Zhuizi." Henan Zhuizi formed the Donglu Zhuizi, which was represented by Shangqiu and Zhoukou; West Road Zhuizi, which was represented by Zhengzhou, Kaifeng, and Xuchang; and North Road Zhuizi, which was popular in northern Henan.

The development of Henan Zhuizi since 1949 This period is divided into two parts: 1. From the 1950s to the 1960s, the influence of Henan Zhuizi in the country reached its peak. There are two reasons: First, following the establishment of New China, the influence on Zhuizi artist registration and some policy-related work indirectly gave birth to many new Henan Zhuizi tracks. Second, Henan Quyi Group, Shangqiu Quyi Troupe, and other groups have been established to cultivate many Quyi talents, which has promoted the development of Quyi, especially the development of Henan Zhuizi. 2. Since the 1970s, Henan Zhuizi has lagged.

5. Discussion

According to the previous literature retrieval and field survey, I think that Henan Zhuizi originated from the combination of Sanxian Shu and Daoqing.

Zhanglvqian: the evolution of Daoqing opera Mr. Zhang believed that Henan Zhuizi evolved from Daoism (Zhang, 1989). There are two reasons: first, the instruments used in Zhuizi opera, such as Jianban and Xingmu, all come from Daoqing opera. Second, most of the early Zhuizi performers used to sing Daoqing operas before switching careers, which is why Daoqing performers occasionally sang Zhuizi as well. Fuxihua holds the view that Henan Zhuizi originated from Daoqing in the book *Introduction to Beijing Quyi*, which further proves this idea.

Zhangchanggong: evolving from Yingge Liu and Daoqing Henan Zhuizi gained its name from the main instrument, the Zhuizi. Initially, it was jointly developed by both "Yingge Liu" and "Daoqing." (Zhang, 1986) Back then, it was created in the late Qing dynasty, when society was full of chaos and instability. As a result, a large number of farmers were forced to abandon farming and make a living as folk music and folk-art performers. However, because of the extreme prevalence of the Bangzi opera at that time, the business of "yinggeliu" and "Daoqing" artists was greatly reduced. To cater to market preferences and make a better living, the Yingge Liu and Daoqing artists transformed the original opera from three-string music into two-string music while retaining the Jianban (a type of percussion instrument made of bamboo) and the yu drum. Then a new form of folk-art performance, Zhuizi, was created. Henan Zhuizi has spread with the times and formed its own folk-art category with national influence.

Liqingyun: evolving from Three Strings and Daoqing In 1904, the Daoqing artist Lei Ming and the San Xian Shu artist Chenniu (also known as Lian Chen) returned to the Xiangguo Temple, where they sang "Zhuizi," transformed from Daoqing, with the accompaniment of Zhuiqin and Jianban (Li, 2020). According to this book, Lei Ming was

born in 1874 in Leiji village, Fengqiu County, Henan Province. Due to his underprivileged family, Lei Ming began to learn Daoqing to make a living at the age of 11. Through his hard work, he became an important figure among Kaifeng Daoqing artists at the age of 30. During a performance in his hometown, he happened to see local San Xian Shu and Daoqing artists perform together. The performance form was storytelling with the help of string. With surprise, he started to learn this form of art, and later he became famous among the residents of the area around the Xiangguo Temple. This is the origin of Henan Zhuizi.

Collect opinions about the origin of the Henan Zhuizi. In my field survey, I also collected some points of view. Mrs. Chen Meisheng (2022, Interview) said that Henan Zhuizi is composed of Daoqing, Yingge Liu, and Sanxian Shu. Mr. Li Guangyu (2022, Interview) said that Henan Zhuizi was formed by the combination of Daoqing and Sanxian Shu. Yingge Liu is also a branch of Sanxian Shu. Mr. Dan Zhigang (2022, Interview) said that he is more inclined toward the Sanxian Shu and Daoqing. There are two reasons: 1. There is still a form of performance in the existing script; 2. The Zhuiqin comes from Sanxian, which is a Chinese folk music instrument.

References

- Curtis, E. B. (2019). *Chinese-Islamic Works of Art, 1644–1912: A Study of Some Qing Dynasty Examples*. Routledge.
- Curtis, E. B. (2019). *Chinese-Islamic Works of Art, 1644–1912: A Study of Some Qing Dynasty Examples*. Routledge.
- Dong, M. Y. (1999). Juggling bits: Tianqiao as Republican Beijing's recycling center. *Modern China*, 25(3), 303-342. <https://doi.org/10.1177/009770049902500303>
- Fan, S. (2020). Henan Zhuizi singing art research. Nanjing Normal University. DOI: 10.27245/d.cnki.gnjsu.2020.000449.
- Li, Q. (2020). *In Introduction to Henan Zhuizi rap art*. Henan University Press.
- Li, Q. (2020). The singing of Henan Zhuizi picking cotton Drama House. *Home to Drama*, (08), 12-13.
- Liang, K. (1995). *Chinese intellectuals in the war: Chongqing, 1937-1945*. Yale University.
- Liu, L. H. (2013). *7 Popular Readings and Wartime Historical Writings in Modern China*. In *The Challenge of Linear Time* (pp. 179-214). Brill.
- Liu, S. (2022). *Xin Fengxia and the Transformation of China's Ping Opera*. Cambridge University Press.
- Mu, Y. (1993). Chinese Musical Instruments: An Introduction.
- Mu, Y. (1994). Academic ignorance or political taboo? Some issues in China's study of its folk song culture. *Ethnomusicology*, 38(2), 303-320. <https://doi.org/10.2307/851742>
- Oun, M. A., & Bach, C. (2014). Qualitative research method summary. *Qualitative Research*, 1(5), 252-258.
- Shepherd, E. T. (2007). *A pedagogy of culture based on Chinese storytelling traditions* (Doctoral dissertation, The Ohio State University).
- Song, N. (2017). The Development Situation of Chinese National Music Teaching. In *Proceedings of the 2017 INTERNATIONAL CONFERENCE on ADVANCED EDUCATION, PSYCHOLOGY AND SPORTS SCIENCE (AEPSS)* (pp. 86-90).
- Speshnev, N. (2013). A Psychological Aspects of the-Perception of Quyi Arts in the. *The Eternal Storyteller: Oral Literature in Modern China*, (24), 88.
- Tsau, S. Y. (1980). Xiangsheng and its star performer Hou Baolin. *CHINOPERL*, 9(1), 32-79. <https://doi.org/10.1179/chi.1980.9.1.32>
- Wan, M. B. (2020). *Legends, Media, and the Transmission of Ideas*. In *Regional Literature and the Transmission of Culture* (pp. 199-241). Harvard University Asia Center.
- Zeng, X. (2018). The Value Exploration of the Digital Technology to the Cultural Database Construction of Bashu Folk Music Culture. In *6th International Conference on Social Science, Education and Humanities Research (SSEHR 2017)* (pp. 458-462). Atlantis Press. <https://doi.org/10.2991/ssehr-17.2018.103>
- Zhang, C. (1986). *In Zhang Changgong's works*. Yellow River Literature and Art Press.
- Zhang, L. (1989). *In Survey of popular entertainment in Xiangguo Temple*. Editorial Department of Henan Volume of Chinese Quyi Annals.
- Zhang, L. (1995). *In Annals of Chinese Quyi (Henan volume)*. China ISBN center.
- Zhang, L. (2017). Hubei Drum and Its Further Development from the Perspective of Intangible Cultural Heritage. In *3rd International Conference on Arts, Design and Contemporary Education (ICADCE 2017)* (pp. 71-74). Atlantis Press. <https://doi.org/10.2991/icadce-17.2017.15>
- Zhang, X. (2010). The formation and development of Henan Zhuizi. *Collection of Science and Education Journals*, (09), 158-159.

- Zhao, S. (2021). *In Sixteen lectures on theories and methods of ethnomusicology*. Xueyuan publishing house.
- Zhu, J. (1996). A preliminary study of Henan Zhuizi's flat tune. *Chinese Musicology*, (S1), 69-75.
- Zhuo, L. (2021). Research on the Inheritance of Traditional Folk Art under the Protection of Intangible Marine Cultural Heritage. *Frontiers in Art Research*, 3(1). <https://doi.org/10.25236/FAR.2021.030108>

Knowledge of the Historical Development of Chinese Xiansuo Folk Music in Qinghai Province's Hehuang District

Gang Chen¹, Peerapong Sensai², Warakorn Seeyo³

^{1,3} College of Music, Mahasarakham University

² Faculty of Fine Applied Arts and Cultural Science, Mahasarakham University, Thailand

Correspondence: Gang Chen, College of Music, Mahasarakham University, Kantharawichai, Maha-Sarakham, 44150, Thailand. E-mail: gangchen.msu@gmail.com

Abstract

The qualitative method was used in this study to examine the historical development of Xiansuo folk music in Hehuang district, Qinghai province, China. Based on the field investigation method, field study method, questionnaire survey method, and recording method Using humanities theory, sociology theory, and historical musicology theory, the study results are as follows: Including its creation process and classifying it according to topic materials Xiansuo folk music is a type of music performance that combines literature, singing, and musical instrument accompaniment. It is widely performed in Haidong City, Qinghai. Xiansuo is not only a unique art form in the Hehuang area, but it is also the result of cultural fusion. It is an aesthetic result of the collective will, thoughts, and emotions, as well as the individual characteristics and aesthetic taste of the Qinghai people, and it has significant scientific value. It is a significant part of the propagation and promotion of traditional music culture and the Qinghai national spirit, as well as a meaningful type of Xiansuo folk music that is distinct from other ethnic musics. Examining Xiansuo music and showing the distinctive creative worth of Xiansuo in contemporary art is critical for encouraging social diversity and conserving traditional folk art. The qualities, musical elements, dissemination, and music have all been explored and researched, and any gaps will need to be filled by future research.

Keywords: Knowledge, Xiansuo Folk Music, Chinese Folk Music, Qinghai Province, Hehuang District, China

1. Introduction

Xiansuo folk music Folk music is a professional term, and its full name is "Qinghai Hehuang Xiansuo Folk Music." Xiansuo Folk Music is an intangible cultural heritage of China's Qinghai Province, and Hehuang refers to the area along Qinghai's Huangshui River coast (Qiang & Lin, 2003). Xiansuo folk music is a form of Quyi. During major festivals such as the Chinese New Year, the 15th of the first month, and the 6th of June, the local people in Qinghai will use "Xiansuo folk music" to sing or play musical instruments to express the joy in their hearts (Thrasher, 1988; Witzleben, 1995; Jones, 2003; Thrasher, 2008; Xiaoqian et al., 2021).

Xiansuo folk music is a kind of traditional music, folk instrument playing, and sitting-singing art in Qinghai province. The singing form of Xiansuo folk music in Qinghai is mainly composed of one person banging on a porcelain disc and singing in third-person narration (Zhang & Zhang, 2015; Zheng & Zheng, 2021). Pipa, Sanxian, sinusoidal banhu, anti-banhu, Yueqin, yangqin, Qu di, Yue'er, and other instruments were used as accompaniment. The founding ceremony of the People's Republic of China was accompanied by erhu, cello, and sometimes only Sanxian. In order to keep the characteristics and flavor of flat-string music and adapt to the needs of male and female sub-cavity, the board and Sanxian were reformed, the banhu shell was enlarged, the Sanxian bar was shortened, and the timbre was more harmonious. At that time, there were no professional artists in Xiansuo folk music. Most of them were played and sung by their friends. They sang and sang in teahouses or at home during their vacations and spare time. They were also invited to celebrate weddings, birthdays, funerals, and so on. As a result, the scope of activities was relatively wide (Kuo-Huang & Gray, 1979; Beng, 2000; Jiang, 2004; Du, 2020).

Regarding the origin of Quyi Qinghai Xiansuo, it is said that it originated in the Song Dynasty and was introduced from the northern region of my country during the Jiajing and Longqing years (1522–1572) of the Ming Dynasty (Cheng, 2005). According to the introduction of local old artists, the earliest known Qinghai Xiansuo artist is Liang Shouwa, nicknamed Liang Foye, who was born around 1850. Later, Li Hanqing and Chen Houzhai (both born around 1890) were influential in teaching apprenticeship and singing. This type of music became popular at the latest during the Qing Dynasty's Tongzhi period (1862-1874), according to this calculation. Most of its repertoires are selected from classical novels and music such as "Records of the Eastern Zhou Dynasty," "The Legend of the White Snake," "Romance of the Three Kingdoms," "Water Margin," and "The Story of the West Chamber." Judging from the structure of the flat strings and the composition of its words and songs, its origin comes from various channels. The names of Pingxian tunes are more common in "Nishang Xuepu," published in the 60th year of Qianlong's reign (1795), and "Bai Xue's Remaining Sound," published in the 8th year of Daoguang (1828). Most of its tunes and melodies are the same as those of Beijing and Tianjin, and some are like those of Jiangsu and Zhejiang. Among the local folk arts on the mainland, the most influential genres of Xiansuo in Qinghai are the "Lanzhou Guzi" in Gansu and the "Octagonal Drum" in Beijing. The musical tunes of "Lanzhou Guzi" also belong to the qupai combination structure, among which there are tunes such as "Giving tune," "Luojiang's grievances against Yinnusi," "Taipingnian," etc. They are very similar to the tunes of the same name in Qinghai's "Xiansuo folk music," even with the same name. Their joint structure is also quite consistent. Lanzhou Guzi is generally composed of three parts: the introduction (guzi head), the loop, and the ending (guzi tail). The accompaniment instruments are mainly sanxian, but other instruments are also the same, and they all use chopsticks to tap the moon (a four-inch porcelain plate) to master the rhythm and pay attention to the singing of the music. The rich ethnic characteristics contain high artistic and ornamental values, which are of great significance for the study of the Hehuang culture in Qinghai (Luo, 1988; Liu & Yang, 2017; Su & He, 2017; Dai et al., 2020; Punzengruber, 2020; Attanayake, 2021).

2. Method

The research methods of this article are as follows: 1) Documentary data method: through collecting, sorting out, and identifying existing documents and forming a scientific method of understanding by studying these data. 2) Field investigation method: Field investigation is the basic method to obtain first-hand information. 3) Qualitative research method: Explain the collected data (Oun & Bach, 2014).

2.1 Research site

This study selects Haidong City (Hehuang area) of Qinghai Province, that is, the Huangshui River Basin is the main place where Xiansuo folk music music is sung as the research object. The author selects key insiders as research clues, so the following process is adopted.



Figure 1: Map of Qinghai Province

Source: <https://chinafolio.com/provinces/guangxi-province>, & <https://paintmaps.com>, (2023)

People on one side of the water, water on the other. In fact, the "intermediary" between soil, water, and people is culture. In 2019, Hehuang culture will be promoted as a national strategy, and Hehuang Xiansuo folk music culture will be vigorously developed throughout Haidong City: Minhe Hui and Tu Autonomous County will strengthen exploration of cultural tourism resources such as history and culture, ethnic customs and folk customs, and Linjin ancient times. Ferry, Lajia Village in Lajia National Archaeological Site Park, Lajia Folk Village, and other projects will be the focus of construction. The large-scale historical and cultural reality drama "Silk Road Dream," filmed by Gu Yi Ping An, takes important historical nodes and important historical events as the context, digs out the historical stories of Ping An, and tells the development and changes of Ping An. In the history of Ping An, Ledu District digs deep into Xiangbeiyun Hehuang cultural features such as drums, the river yellow art lantern array, and Shehuo to provide a rich cultural feast for the masses. based on Mongolian folk culture, religious culture, natural ecological culture, farming culture, and highland barley wine culture, to inherit and protect the intangible cultural heritage and traditional handicrafts of Huzhu Tu Autonomous County. Cultural talents from the three districts were distributed to 17 townships in the county, focusing on collecting outstanding traditional folk handicrafts from each township and conducting a comprehensive cultural survey and mapping census. Xunhua Salar Autonomous County dug deep into sheepskin rafts, and Salaman sailors "Giovanni" kept following the footsteps of the first people.

2.2 Key informants

Mr. Liu Yantai, director of the Haidong Cultural Center and chairman of the Musicians Association The criteria for selecting key informants are Mr. Liu Yantai is the inheritor of Xiansuo music. He grew up in Qinghai and is the chairman of the Haidong Musicians Association. Learn about the development of Haidong culture in Qinghai Province. He has been involved in cultural grass-roots work for more than 40 years and has published numerous books on Hehuang culture.



Figure 2: Mr. Liu Yantai, curator of Haidong Culture Center and Chairman of Musicians Association.

Source: Gang Chen, (2021)

Based on the above selection criteria, I chose Mr. Liu Yantai as my informant. When he was in junior high school, Mr. Liu accidentally found that the Ledu District Cultural and Art Troupe was looking for staff, so he applied for the job. Quite artistically gifted, he successfully entered the art troupe and began his artistic career. He has been committed to this path, both on stage and behind the scenes, in the land of Haidong, the land of his dreams. In the art troupe, Liu Yantai has been exposed to more musical instruments. His favorites are sanxian, banhu, etc., almost to the point of obsession. Every day, in addition to tasks, if he takes a break, he picks up sanxian to practice, and sometimes he can play for several hours a day. He always carries his instrument with him and starts practicing whenever he has time. Today, he can skillfully play 16 or 17 kinds of instruments, such as the sanxian, erhu, dulcimer, banhu, and bamboo flute. In addition to creating music works such as Banhu Solo's "Auntie of the Tu Nationality Going to the Mountain," Liu Yantai's dance works such as "Spring Poem," "Grape Ripe," and "Happy Pastoral Song" have also won awards for provincial and district-level songs and music, respectively. song, "Hudong Love," "Western Love Boundless," and more than 30 other songs. He has trained many bands and coached many programs for Jiangdong Sheep Farm, Haidong People's Bank, Post and Telecommunications Bureau, Qinghai Cotton Mill, Ping'an County Education Bureau, and other units. In 1984, he choreographed the duet "Farewell" and performed the oboe solo "Pastoral Song," which won the Provincial Workers' Outstanding Artistic Performance Award and Performance Award; in 1991 and 2000, he won Lanzhou with the sanxian solo "Gu on the Mountain" and the banhu duet "Gu on the Mountain" Best Performance Award. In 2001, the dance song "Foot Brother" won the first prize in the First People's Cadre Skills Competition in Qinghai Province; in 2003, the instrumental song "Jiang Jing" won the special prize for various instruments in the Second Provincial People's Cadre Skills Competition Performance Award; and in November 2007, in the 4th Provincial Qunwen Skills Competition, he created the erhu solo "Ancient Yellow Capriccio" and performed the second prize.

2.3 Data collecting

Data were collected through literature analysis and field investigation. To conduct further research, the researchers will mainly conduct analysis and research at the Municipal Cultural Center and the network platform. The researchers will conduct field work in Haidong, Qinghai Province, China. The researchers will follow the leadership of the Cultural Center, and by means of an on-the-spot interview and audio and video recording, this paper will record the inheritance and protection of Xiansuo folk music in the Hehuang area of Qinghai Province.

2.4 Data analysis

The author will document data from field research and data analysis; and Mr. Liu Yantai, the second author and informant, will conduct field study sampling analysis, research, and interview informants on the ground.

3. Results

Through many documents and interviews with informants, the development of Xiansuo folk music was documented. Through the above schedule, we can see that "string" music was not officially developed until the

founding of New China in 1949. We look at the process of the development of "string" music through this timetable.

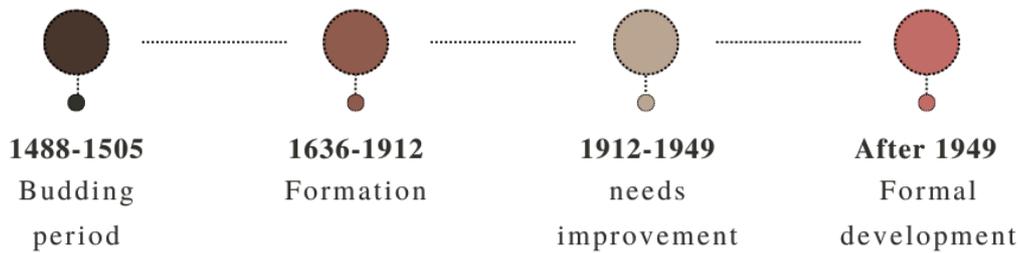


Figure 3: Timeline of Xiansuo folk music development

Source: Gang Chen, (2021)

3.1 The Historical Development of Xiansuo folk Music

Xiansuo folk music, the Sprout of Music, Qinghai, has been one of the birthplaces of ancient Chinese civilization since ancient times. It has a long, splendid, and unique history and culture. The people of Qinghai have created a rich cultural heritage, with Qinghai local folk art being one of its many charms. From Tang Dynasty poet Zhang Qiao's "Hehuang Old Death," Du Mu's "Hehuang," and other poems, we can see that "Bianqu" is a melancholy song that circulated among the people around Hehuang, like Xiansuo's early activities of music singing.

In the early years of Hongzhi (1488–1505), Ke Zhong, the chief inspector of the Xining Army, founded a "sanatorium" in Xining, where he took in the aged, the sick, the disabled, the widowed, and the lonely, gave them food and clothing, and taught them how to play and sing. At this time, with the development of folk *quyi* in Qinghai, the Xiansuo folk music instruments and plucked instruments used in accompaniment gradually flourished, while the bells, percussion instruments, Fou, and so on gradually decreased with the neglect of large-scale ceremonial music. More and more Sanxian, Yangqin, PIPA, Banhu, Erhu, bamboo flutes, Zhan'er, Bangzi, bells, and other musical instruments were made, and Qupai got richer. The talent pool is growing, and folk music is growing like never before. Not Just Ensemble: Some instruments, such as those in Xiansuo folk music, the bamboo flute, the banhu, and so on, began to appear solo. Therefore, this period became an important historical period for the great development of folk music.

3.2 The period in which the development of Xiansuo folk music took shape.

The late Ming and early Qing dynasties were the stages of formation or maturation of various ethnic groups' folk art, and the formation and maturation of local folk art in Qinghai were roughly at this stage as well. At the beginning of the Ming Dynasty, the policy of immigration to the frontier and reclamation was implemented, and a large number of Han people from Jiangsu and Zhejiang moved westward to Qinghai, which created conditions for the spread of rap from Jiangsu and Zhejiang in Qinghai. In the process of spreading, they have been combined with Qinghai folk songs, minor and ditty songs, and have gradually become one of the factors that breed new types of songs. In the early years of Hongzhi (1488–1505), Xining Army Chief Inspector Ke Zhong founded a "sanatorium" in Xining to take in the old, sick, disabled, widowed, and lonely, giving them food, clothing, and education. They play the piano and sing. At this time, with the development of Qinghai folk art, stringed and plucked instruments for accompaniment gradually flourished, while bells, percussion instruments, talismans, and other instruments gradually decreased, ignoring large-scale ritual music. Sanxian, Yangqin, Pipa, Banhu, Erhu, Bamboo Flute, Zhan'er, Bangzi, Bell, and other musical instruments appeared in large numbers, and the music cards gradually became more abundant. The talent pool is growing, and folk music is growing like never before. Not only the ensemble, but some instruments also began to appear solo, such as strings, bamboo flute, banhu, and so on. Therefore, this period became an important historical period for the great development of folk music.

(1636-1912) In the Qing Dynasty, it was in the Qing Dynasty. Xiansuo's musical development period During the Qianlong period of the Qing Dynasty, Xining Yang Yingju and the prefect Shen Mengxi donated money to build a sanatorium, which was still used to teach folk music such as Fu Zi and Xianxiao when Guangxu was rebuilt. In addition to Sanxian Banhu, there are also bamboo flutes, erhu, and so on. After the middle of the Qing Dynasty, Qin music and Meihu music were introduced into Qinghai. The repertoire is more abundant, and the structure of the repertoire is more complete. At the end of the Republic of China, the local Xiansuo folk music had a certain scale in its singing and performance. By the 1930s, folk music had become quite popular, the scale of instrumental music was quite large, and the artistic level was also very high.

3.3 The musical development of Xianshuo folk music after the founding of New China in 1949

3.3.1 Budding period 4 In the 1980s, various forms of folk art were restored and developed, and not only were there an unprecedented number of complete sets of folk instrumental music, but there were frequent performances; a new generation of musically minded young people is emerging in the ranks of entertainers, and musical instruments are being completely updated. Some small bands now have cello electronic organs, and their playing level has improved.

3.3.2 Entering the new century, the socialist market economy has brought a new vision of prosperity to socialism with Chinese characteristics. As my country's economic construction has entered the fast lane, some excellent traditional cultures have begun to fall behind in the face of the thriving socialist market economy. The inheritance and development of Qinghai Xiansuo Quyi are in a very difficult predicament. Objectively speaking, economic globalization has generally accelerated the pace of people's lives. Most people's values are fixed on the pursuit of material wealth, and they basically have no time to pay attention to those traditional cultures that cannot bring economic benefits and productivity to people. From the perspective of culture and entertainment, most contemporary young people are more interested in chasing cultural fast food that is fashionable and entertaining. Those excellent traditional cultures with profound cultural connotations appear to be out of sync with today's fast-paced, new wave. With the continuous acceleration of urbanization, the function of dialects is weakening, and many audiences of traditional art and culture have been aging, which makes traditional ethnic folk art unconsciously interrupt the inheritance chain. Qinghai's Xiansuo quyi is obvious in this respect. Now, compared with the past, Qinghai's Xiansuo quyi has not only not expanded but has shrunk. Nowadays, the singers and listeners of Qinghai Pingxian Quyi are mostly middle-aged and elderly people. Few of the younger generation like Qinghai's Xiansuo folk music, or Quyi. Qinghai Xiansuo Quyi has lost its glory days when famous artists came out in large numbers and audiences flocked to it. In addition, from a subjective point of view, there are also many problems in the development of Qinghai Xiansuo Quyi because it is a spontaneous folk art; in terms of fund raising and investment; in the form and management of art singing; and in terms of dissemination channels, it cannot keep up with the times. pace of. Especially in the creation of Qinghai Pingxian Quyi, there were also many problems. Due to the lack of inheritance, the number of cultural people participating in the singing and creation of Qinghai Xiansuo folk music Quyi is reduced, and it is difficult to create excellent works of Qinghai Xiansuo folk music. Quyi, especially the works that reflect real-life themes, are often works that fit the situation, making the audience feel that Qinghai Pingxian Music is still the same old style. It can be said that the failure of excellent works also seriously restricts the development of Qinghai Pingxian music. As the country attaches great importance to these intangible cultural heritages in recent years, Xiansuo folk music has begun to improve.

3.4 The current situation of Xiansuo folk music performers

After on-the-spot interviews and investigations, most of the musicians who play Xiansuo folk music are middle-aged and elderly people. They all learn music through oral and heart-taught methods. can play one musical instrument, and some can play several kinds of musical instruments. For example, all the musical instruments he uses for Xiansuo folk music, according to Mr. Liu Yantai, the informant I interviewed, can be played and sung. Artists usually choose outdoor squares for rehearsal. The music and musicians they choose each time they participate in a large-scale event performance are from pre-rehearsed repertoires. Each performance is basically fixed, and sometimes some repertoires are added. The music is generally designed by old people with musical foundations. The tunes are previous recordings by professionals and some newly written tunes. Most of the

performance venues are indoor theaters. Musicians generally must prepare their own costumes and musical instruments in advance. Originally, they bought the musical instruments themselves through the piano store. Now the national government advocates the protection of intangible cultural heritage, and the state will also distribute part of it to the artists for free. Artists do not get paid for rehearsal, and only when there are major performances, such as grand festivals, Chinese New Year, and the fifteenth day of the first lunar month, will the government. Pay, but not much.

3.5 The author conducted field trips and took photographs of the artist's rehearsal scenes, as well as photographs of the instruments used and photographs of the scores.



Figure 4: Rehearsalstills: Artist Mr. Qi zhijin is singing Xiansuo folk music play
Source: Gang Chen, (2021)



Figure 5: Pipa (Chinese folk music instruments)
Source: Gang Chen, (2022)



Figure 6: Zhongruan (Chinese folk music instruments)

Source: Gang Chen, (2022)



Figure 3: Dong "Da Ge" music informants teaching

Source: Wu Hengbin, (2021)

3.6 The Creation and innovation of Xiansuo folk music

In the past ten years of the development of Qinghai Xiansuo folk music, the inheritor and director of the Haidong Cultural Center led Qinghai Xiansuo folk music people to live up to their mission and work tenaciously to create "Xiao zhi ge" and "Xiao shuang qin." Excellent repertoires such as "Zhong xiao liang quan" have worked hard to continue the development of local dramas in Qinghai. Through the creation and performance of this period, Qinghai's Xiansuo folk music has fully matured. An important sign of mature local music is the singing and chanting of music. Qinghai's Xiansuo folk music was born out of Pingxian music, but it is still very flawed to use Pingxian music as stage music to express Pingxian music. For the tea-picking music in the southern region, the flat-string music is used, and it is enough to enrich it a little. However, in order for Xiansuo folk music to truly become a big drama, a complete set of singing systems suitable for Xiansuo drama must be created according to the conflict of the plot, characters, music performance program, stage performance, etc. It forms a comprehensive musical body that combines the perfect combination of the couplet and the board cavity. However, regardless of how music evolves, "Fuziqiang" is the main 18-chamber piece, and "24-qiang" should be the main melody of Qinghai's Xiansuo folk music. Regarding "Nian Bai," the first three generations of actors in Xiansuo have always adhered to the development of the old "Haidong Mandarin," which is undoubtedly correct. However, the language also moves forward with the times. Haidong City is an immigrant city, and the language changes rapidly. Whether the "Nianbai" of Qinghai's Xiansuo folk music should be 100% old "Xining Mandarin" or just speak the Xining dialect, it is worthwhile. Discuss.

3.7 The Modern development ideas

At present, the inheritance and development of Qinghai Pingxian Music and Qinghai Xiansuo Folk Music are facing certain difficulties. But opportunities and challenges coexist, as do difficulties, and hopes. After the 19th

National Congress of the Communist Party of China, the state has issued a series of policies to protect the excellent traditional folk art and music, which have injected vitality and brought hope into the development of Qinghai Xiansuo folk art and Qinghai Pingxian music. The vast number of cultural, literary, and art workers and people of insight who are keen to carry forward the excellent traditional local culture should maintain cultural confidence, take advantage of the situation, and make suggestions for the revitalization, inheritance, and development of Qinghai Xiansuo folk music and Qinghai Xiansuo folk music. How to inherit and develop Qinghai Xiansuo folk music and Qinghai Xiansuo folk music, the author believes that: First, the government's and leaders' attention is critical. The state has made great efforts to protect intangible cultural heritage. The State Council has issued several opinions on supporting the development of Chinese music service system, the state has issued policies, and relevant cultural functional departments should take effective measures as soon as possible to implement the policies in place and provide policy and mechanism guarantees for the inheritance and development of Qinghai Pingxian Music and Qinghai Xiansuo Folk Music. Second, most literary and art workers should also exert their subjective initiative. It is necessary to make use of the advantages of Qinghai Xiansuo folk music and Qinghai Xiansuo folk music to promote the excellent local traditional culture of Qinghai, serve the people through art forms, and publicize the major policies of the party and the country. Qinghai Pingxian Music and Qinghai Pingxian Art should become two cultural business cards for the promotion of "Great Beauty Qinghai" and should be deeply implemented in Qinghai. Artistic charm, infecting, inspiring, and educating the people with vivid and lively works of art. It is also necessary to let this excellent traditional culture take the road of integration of culture and tourism to serve foreign tourists. Third, intangible cultural heritage protection units at all levels and the Qinghai Pingxian Music Troupe should undertake the functions of protecting, inheriting, and developing Qinghai's Xiansuo folk music and Qinghai Xiansuo folk music, and encourage literary and artistic workers to create works that are both down-to-earth and unique, excellent works that are ideological, artistic, and ornamental. Improving the quality of creation is an important path to revitalizing Qinghai's Xiansuo folk music. Fourth, the inheritance and development of Qinghai's Xiansuo folk music and Qinghai's Xiansuo folk music also require relevant government departments, literary circles, and art circles. People and the public work together to create an atmosphere and increase publicity efforts. The media in Haidong City, Qinghai, should also be propagandists of local culture. Even if the TV media in Haidong City, Qinghai, cannot set up fixed local music and music channels, they should also consider running a long-term or regular column to promote Qinghai Xiansuo Quyi and Qinghai Xiansuo folk music. Qinghai's online media should also strengthen the dissemination of excellent local traditional culture. Finally, Qinghai Xiansuo Quyi and Qinghai Xiansuo Xiansuo folk music belong to the noble culture and learning them is extremely beneficial to improving the literary level of children. As a result, allowing Qinghai Pingxian music and Qinghai Pingxian music to enter the campus without children is more practical. Inheriting and developing Qinghai Pingxian Quyi and Qinghai Pingxian Music is a long-term, arduous, and systematic project. Only through the unremitting efforts of generations is it possible to make these two brilliant and colorful artistic works bloom forever in the garden of Chinese art treasures.

As the ancient poem lines go, "We worship our ancestors with music of qin, se, and drum to pray for rain for the crops to stimulate our morale." Gong-and-drum music, like drumbeat music, has a long history and is popular throughout the country. It is a popular folk art on occasions such as festivals and celebrations and has taken deep root in local life. They are full of local flavors and cultural aesthetic meanings, among which the most famous ones are Jiangzhou gong-and-drum music of Shanxi; Shehuo gong-and-drum music of Qinghai; Zhoushan gong-and-drum of Zhejiang; Daliuzi of the Tujia ethnic group of Hunan; and Chaozhou dalluogu of Guangdong. There are immeasurable cultural and artistic values in its music structure, colorful rhythms, moving expressive forms, and deep musical meanings.

As the ancient poem lines go, "Xiansuo folk music and bamboos can make melodious music." Sizhu music or Xiansuo folk music is popular practically all over the country and is characterized by its special characters and lasting taste. In the north, there is errentai paiziqu from Shanxi and Inner Mongolia; Xiansuo folk music shisantao from Beijing; pengbaban from Shandong; and bantouqu from Henan; and in the south, sizhu music such as Guangdong music, Jiangnan sizhu, and Fujian nanyin has become a unique pastime.

From the study, the researchers made synthetic conclusions about the history and development of Chinese folk music culture. It is believed that Chinese classical music is related to and has the same roots as Confucianism. It

uses recordings of how instruments are played and the process of playing them, rather than describing music theory or notes in detail. This is because, prior to Buddhism, Confucianism ruled that music could be used to teach religion. While this type of musical recording system cannot tell you how to perform exhaustively, it does not imply that it is an incomplete system. The Chinese wanted to record only music. The instruction must be coupled with oral transmission. And in instrumentation, it is considered the individual talent of a musician. It is the musician who determines the shortness of the note. The music player determines the mood of the song and conveys the meaning of the song based on personal abilities without having to look at the subtle notes. Therefore, musicians who play from finger notes are highly talented and require a lot of rehearsals, as well as being cognizant and able to convey the music properly and correctly.

4. Discussion

Through interviews with informants as well as current discussions with folk artists in the Hehuang area of Haidong City, Qinghai Province, and listening to them sing music such as "Honoring Your Parents," "Loyalty and Filial Piety Son," and "Filial Songs," I can find in my research that "Fairy Lock" has not changed in some ways but in some ways. For example, the origin of the music of Xiansuo is consistent with the research results of Li Qiang's 2003 edition of "National Music." The melody patterns of the songs written by the composer are all Chinese national patterns. All four or four is the rhythm. The content of the lyrics is to be positive and to educate future generations to be filial. Parents' loyalty, country's loyalty. This is consistent with Cang Haiping's (2003) version of "Music Exploration."

According to historical musicology, music archaeology, etc., we found that "Xianshuo" music in the Hehuang area of Haidong City, Qinghai, has a history of about 700 years in China. However, in the evolution of time, other aspects of the music of Xiansuo have changed, such as the language, and the performance has also changed. This is the research of scholar Ni Zhongzhi (2005). It was only used as a dialect at the time, and later it was slowly sung in Qinghai dialect and Mandarin, which is different from the performance of a specific form of performance studied by Qin Yongzhang (2005). Instead, play different types of music in the right venue.

The reasons for these changes are manifold. In the process of long-term changes and historical development, Xiansuo folk music artists have always maintained a free artistic concept, integrated various elements of local culture, music, and art, and created various literary arts such as musical instrument performances, folk music singing, and dance. Comprehensive form. Overall, this study produced different results from previous studies due to different research perspectives and time periods. It could also be due to different study locations, the fact that the data collection time in the field was too short, or the fact that there were not enough interviews. Therefore, the results of this study are validated and at the same time different from previous studies. In future research, the research method needs to be further improved, and further research is needed.

References

- Attanayake, A. M. T. K. L. (2021). Traditional Drums in China and Sri Lanka: A Comparative Study.
- Beng, T. S. (2000). The "Huayue Tuan"(Chinese Orchestra) in Malaysia: Adapting to Survive. *Asian music*, 31(2), 107-128.
- Cheng, Y. (2005). *Xi'an old music in new China: "Living fossil" or "flowing river"?*. University of London, School of Oriental and African Studies (United Kingdom).
- Dai, J., Wang, K., & Sun, Y. (2020). Analysis on the Inheritance and Development of Manchu Intangible Cultural Heritage in Changbai Mountain by the Creation of Animation Short Films in the New Media Era. In *7th International Conference on Education, Language, Art and Inter-cultural Communication (ICELAIC 2020)* (pp. 376-379). Atlantis Press.
- Du, P. (2020). *"When East Meets West," Chen Yi's From Old Peking Folklore: The Merging of Chinese and Western Musical Idioms*. Doctoral dissertation, Arizona State University.
- Jiang, Y. (2004). *The Chinese violin concerto "The Butterfly Lovers" by He Zhanhao (1933) and Chen Gang (1935) for violin and orchestra*. The University of Texas at Austin.
- Jones, S. (2003). Reading between the Lines: Reflections on the Massive" Anthology of Folk Music of the Chinese Peoples". *Ethnomusicology*, 47(3), 287-337.

- Kuo-Huang, H., & Gray, J. (1979). The modern Chinese orchestra. *Asian Music*, 11(1), 1-43.
- Liu, H., & Yang, W. (2017). Discussion on the Characteristics and Heritage Protection of Bai People's Bawangbian in Dali. In *2017 International Conference on Innovations in Economic Management and Social Science (IEMSS 2017)* (pp. 794-796). Atlantis Press.
- Luo, Y. H. (1988). *The influence of Chinese folk and instrumental music on Tcherepnin's "Chinese Mikrokosmos," a lecture recital, together with three recitals of selected works of JS Bach, WA Mozart, C. Debussy, S. Rachmaninoff, D. Shostakovich, and others*. University of North Texas.
- Punzengruber, N. (2020). *The contemporary vernacular in flux: spatial transformations of the built environment in the Dong minority's habitat*. Doctoral dissertation, Wien.
- Qiang, L. & Lin, K. (2003). *Colleen: Studies of ethnic drama*, Publishing House of Minority Nationalities.
- Su, C., & He, L. (2017). The Study of Landscape Protection and Utilization in Folk Custom Villages--Take the Hetuala Village in Liaoning Province as an Example. In *2017 3rd International Conference on Economics, Social Science, Arts, Education and Management Engineering (ESSAEME 2017)*. Atlantis Press.
- Thrasher, A. (2008). *Sizhu instrumental music of south China: Ethos, theory and practice*. Brill.
- Thrasher, A. R. (1988). Hakka-Chaozhou Instrumental Repertoire: An Analytic Perspective on Traditional Creativity. *Asian music*, 19(2), 1-30.
- Witzleben, J. L. (1995). *"Silk and bamboo" music in Shanghai: the jiangnan sizhu instrumental ensemble tradition*. Kent State University Press.
- Xiaoqian, H., Chuangprakhon, S. & Karin, K. (2021). The Guzheng Music in Henan Province, China. *Review of International Geographical Education Online*, 11(5), 2755 – 2765.
- Zhang, Q., & Zhang, Q. (2015). *The Treasure House of Ancient Chinese Literature and Art*. An Introduction to Chinese History and Culture, 319-351.
- Zheng, Z., & Zheng, Z. (2021). *Guzici and Zhugongdiao: Popular Literary Forms Featured with Singing and Telling*. *History of Chinese Folk Literature*, 297-361.

A Study of Yuediao Folk Music Knowledge Development in Zhoukou, Henan Province, China

Lei Li¹, Awirut Thotham²

¹ Ph.D. Student, College of Music, Mahasarakham University

² Lecturer Dr., College of Music, Mahasarakham University

Correspondence: Awirut Thotham, College of Music, Mahasarakham University, Kantharawichai, Maha-Sarakham, 44150, Thailand. E-mail: awirut.t@msu.ac.th

Abstract

The qualitative method was used in this study of Yuediao opera knowledge development in Zhoukou, Henan Province, China. Based on the collected data, an interview form and questionnaire were used as research tools, and three key informants were selected. The study results are as follows: Yuediao opera is a unique local opera gradually formed by Henan dialect and local folk music. Yuediao opera has gone through the changes of the Qing Dynasty, the Republic of China, and the New China. It has a history of more than 300 years. Yuediao opera has gone from being a less famous local opera to becoming one of the most famous operas in Henan Province. Yuediao has performed for Chinese leaders in Beijing six times, and even some performing artists, plays, and vocals have become popular throughout the country. After the transformation of the Republic of China, "Shanglu diao" took the opportunity to revive and become the representative of Yuediao and has undergone great changes in the music system, performance style, aesthetic character, and other aspects through the evolution of "formal costume opera" to "informal costume opera" and then the reform of Chinese opera.

Keywords: Knowledge, Yuediao Opera, Chinese Opera Music, Henan Province, Opera Music Development

1. Introduction

Stretching some 480 km from north to south and 560 km east to west at its widest point, Henan spreads across sizable part of the North China Plain. Henan is bordered by Shanxi and Hebei to the north, Shandong and Anhui to the east, Shaanxi to the west and Hubei to the south. The Yellow River cuts through the northern tip of the province with about five-sixth of its land falling south of the river. Henan's name in fact means "South of the River". At an area of 167,000 square kilometers, Henan is slightly larger than Tunisia. Shang cities, for instance, were large and protected by massive walls up to 40 m wide and 10 m high, the largest of which are estimated to have required an investment of some 13 million labor days. "Oracle bones" – chicken bones and turtle shells – dating from the Shang time, record the first examples of Chinese character writing. These bones were used by rulers to consult ancestral spirits. Some of the most important Shang Dynasty cities were located by modern Shangqiu, Anyang, and Zhengzhou (Leet, 2023).

Man has been living in Henan since prehistoric times. Archaeological digs within Henan have found artifacts from early Yangshao and Longshan cultures. These early people's farmers as well as hunters and fishers with domesticated dogs and pigs. China's first dynasty, the Xia Dynasty, (2200-1600 BCE) ruled in large parts of what is modern day Henan. The Xia fell to the Shang Dynasty (1600-1046BCE). Archaeological evidence suggests that the early Shang Dynasty was quick to develop a political hierarchy and a complex economic and social system (Li et al., 2003; Liu et al., 2004; Lu et al., 2013; Chunqing, 2013; Li, 2015; Wang & Cui, 2021).

Yuediao is one of the three major local operas in Henan Province and an important part of Henan opera culture. Yuediao opera is a mature type of opera. It has a unique artistic style in many aspects, such as in music, literature, dance, stage tableaux, performance, vocal music, melody, and so on. In 1937, Zou Shaohu wrote that Bang Opera (referring to today's Henan Opera) was regarded as a real opera at that time in his essay *A Brief Study of Henan Opera*. Among many local operas in Henan, "In Henan Province, only Yuediao opera and Bang Opera are popular in the whole province, and the other operas are only popular in local areas." On May 20, 2006, Henan Yuediao was officially listed in China's first batch of national intangible cultural heritage (Wei, 2008; Xiaoqian et al., 2021).

The number of performances of Henan Yuediao opera is about 560. According to its content, genre, and performance system, Yuediao artists divide their plays into "formal costume opera" and "informal costume opera." "Formal opera" is used by Yuediao artists for the early plays, which has the meaning of authenticity and orthodoxy. "Informal costume opera" refers to the performance plays that rose in the late Qing dynasty and the early Republic of China. They are different from early plays in terms of script system, division of labor, performance style, and so on (Ma, Z., 2015).

Since the 1980s, when the market economy and different foreign cultures started to grow, there have been a number of problems with the way traditional Yuediao opera has grown in a market economy. Yuediao opera is facing a serious decline and even extinction. In recent years, with the launch and operation of the "intangible cultural heritage protection project" led by the Chinese government and with the strong support of the "National Art Fund," the Ministry of Culture, and other departments, the development of the whole opera industry began to improve, and the development of Yuediao opera also showed a good momentum. However, from an overall point of view, the overall inheritance and development of Yuediao opera are still not optimistic. Although Yuediao opera has made great progress through the efforts and innovation of government departments and troupe managers, the hard-won situation was soon swallowed up by the wave of the commodity economy. Therefore, it is urgent to rescue and protect Henan Yuediao opera (Zhao, 2009).

The researcher discovered and realized that the historical development of Yuediao opera in Zhoukou City, Henan Province, China, analyzed the music characteristics of Yuediao in Zhoukou City, Henan Province, China, and summarized the protection and development of Yuediao in Zhoukou City, Henan Province, China, based on preliminary data. Exactly. I found that government policies, national strategies, the economy, cultural consumption, the art education system, innovation and technology of drama itself, social media, and other factors had adverse effects on the development and protection of Yuediao, which indirectly affected its social status, artistic role, and performance style. Therefore, I focus on ethnomusicology and combine the methods of sociology, anthropology, ethnography, and communication to conduct a field investigation and related research on the historical development, music characteristics, protection, and development of Yuediao opera in Zhoukou City, Henan Province, China. in order to provide new theoretical support and reference for the inheritance and innovation of Henan Yuediao opera and also provide relevant information for those interested in further research.

2. Method

This study followed the ethnomusicology method of "putting music in the cultural context in which it comes into being." The formation of any musical phenomenon is closely related to its social and cultural background. Therefore, we should not only study the historical development of Yuediao opera in Zhoukou City, Henan Province, China, but also study the musical characteristics of Yuediao opera. In this way, we can draw a more objective and reliable conclusion about the preservation and development strategy of Yuediao opera. I will

primarily use the field research method to observe the Yuediao opera living environment, observe and perceive the current development status and trend of Yuediao culture, record Henan Yuediao with music score, feel the diverse Henan Yuediao culture, interpret the function, function, and significance of Yuediao from various angles, and pursue the true connotation of Yuediao opera.

The research methods of this article are as follows: 1) Documentary data method: through collecting, sorting out, and identifying existing documents and forming a scientific method of understanding by studying these data. 2) Field investigation method: Field investigation is the basic method to obtain first-hand information. 3) Qualitative research method: Explain the collected data (Oun & Bach, 2014).

2.1 Research site

Henan Province is the birthplace of Yuediao opera. Yuediao opera is mainly spread in the western, central, and eastern regions of Henan Province. Since 1830, Yuediao opera has been the main representative of operas in Henan Province. Zhoukou City is the main carrier of contemporary Yuediao opera. Henan Yuediao Opera Troupe is located in Zhoukou City. Mr. Shen Fengmei, a famous Yuediao master, has been the leader of the troupe for a long time. Since the 1960s, Zhoukou City has been the main carrier of Yuediao opera.

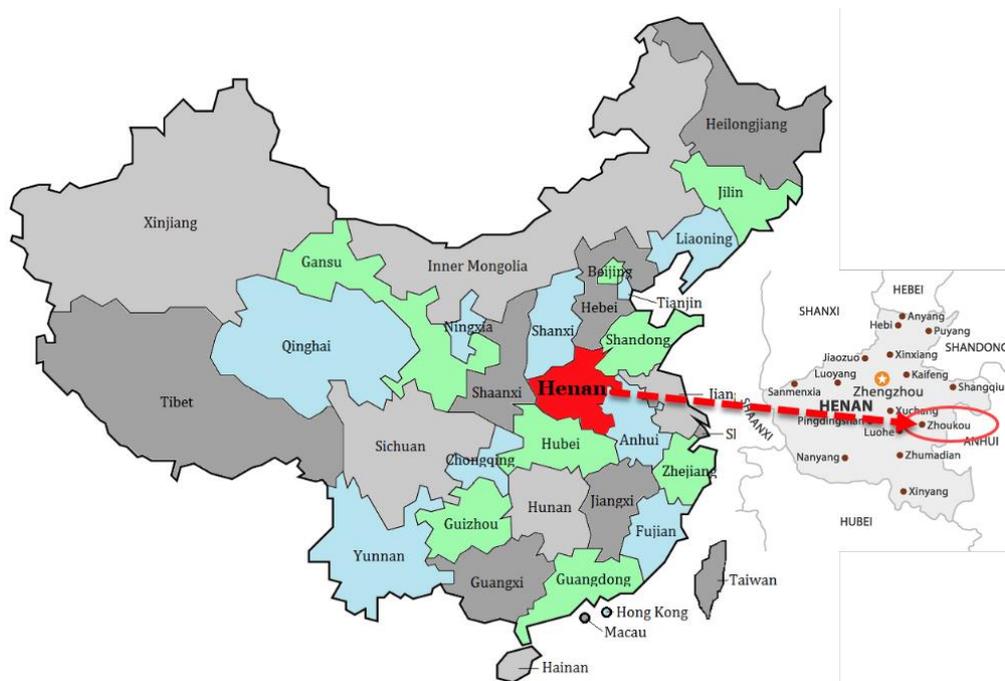


Figure 1: Map of Kaifeng, Henan Province, China

Source: <https://chinafolio.com/provinces/guangxi-province> & <https://country.eiu.com>, (2023)

2.2 Key informants

The criteria for selecting key informants were provided by Mr. Wang Bingcan, the inheritor of China's national intangible culture: They are:

- 1) They have been engaged in the creation, singing, or performance of Yuediao opera for at least 30 years.
- 2) They understand the history, culture, and development of Yuediao opera.
- 3) They have won the highest award in various Yuediao opera competitions.
- 4) They must be the government-awarded Yuediao opera inheritors at the above-provincial level.
- 5) They have made outstanding contributions to the dissemination and development of Yuediao opera.

The three key informants, including two scholars and one famous Yuediao opera actress, are also the inheritors of the Henan Province intangible cultural heritage of Yuediao opera. The three key informants are all very important informants, mainly because they provided me with a lot of data and information, including music scores, videos,

photos, books, newspapers, magazines, and so on. It provides great reference value. 1) Ms. Shen Xiaomei is one of the most famous actors in Yuediao opera. She is a national first-class actor. She has performed many classic dramas of Yuediao opera, won many first prizes in national competitions, and has rich experience in Yuediao opera performance. 2) Mr. Wei Tianbao and 3) Mr. Wang Bingcan are famous composers and theorists of Yuediao opera. They are a national first-class composer and have created many excellent Yuediao operas. They are very familiar with the historical development and musical characteristics of Yuediao opera, which will contribute to the subsequent research of this study. Table 1 lists eight general investigators and eight special investigators.

Table 1: Investigators

No	Name	Gender	Birth year	Site	Profession	Positional
1	Wei Fengqin	female	1964	Henan Yuediao troupe	Performer	Performer
2	Zhang Guoqing	male	1958	Henan Yuediao troupe	Performer	Performer
3	Ma Zichen	male	1933	Zhengzhou, Henan	Researcher	Professor
4	Zhang Li	female	1972	Yuediao Research Center	Scholar	Professor
5	Cheng Jun	male	1976	Yuediao Research Center	Scholar	Professor
6	Zhao Hua	female	1964	Yuediao Research Center	Scholar	Associate Professor
7	Li Ronghua	male	1971	Yuediao Research Center	Scholar	Associate Professor
8	Li Na	female	1981	Yuediao Research Center	Scholar	Associate Professor

2.3 Data collection

During the field investigation, I prepared two forms. One is the interview record; the other is the observation record. In both forms, I designed a variety of questions, including the age, gender, and ethnicity of the respondents. Form, singing language, singing occasion, whether to inherit Yuediao opera, etc. Through interview and observation, statistics are made on the historical and cultural inheritance, rhythm, mode, interval, melody, and other aspects of Yuediao opera so as to provide real data for future research.

2.4 Data analysis

Based on the original historical and oral history of Yuediao opera, the author conducted in-depth research on relevant performers, researchers, and inheritors of intangible cultural heritage through interviews, observation, participation in observation, group discussion, and a questionnaire survey. Try to sort out the history of the development of Yuediao opera more comprehensively and deeply.

3. Results

3.1 Yuediao opera before 1911.

Yuediao Opera is an ancient local opera. Due to the lack of historical documents, it is unclear why this opera is called "Yuediao" and when and where the Yuediao opera originated, but so far there are different opinions, which have hindered the research of this opera for a long time. According to the records of the ZhuangWang Temple Monument in Shedian Town, Nanyang City, Henan Province, it has a history of at least 300 years and has been one of the three major local operas in Henan since 1830.



Figure 2: Sheqi County, Henan Province, the birthplace of Yuediao opera

Source: Lei Li, 2022



Figure 3: Sheqi County, Henan Province, the birthplace of Yuediao opera

Source: Lei Li, 2022

Zheng Linxi explores the origin of Henan Yuediao opera through the ancient books, such as the chronicles of rites and music in the New Tang Dynasty, the chronicles of historical music in the Song Dynasty, the general examination of literature, the general code, the phonology of the Central Plains, and the lost collections of operas in the Song and Yuan Dynasties. 1) In terms of music singing, Henan Yuediao and Kunshan Tune share components. Kunshan tune (i.e., Kunqu opera) was created in Kunshan by Wei Liangfu and others in the middle of the Ming dynasty during the reign of Ye Jialong (about 1566). However, Wei Liangfu studied Beiqu, which was also popular in the area at that time. The singing of Yuediao opera was found as early as in the Song and Yuan dynasties, so it is impossible to learn from the later-created Kunshan tune. On the contrary, Kunqu Opera may learn music and singing from Yuediao Opera. At least it is also from the Northern Song and Yuan dynasties. Yuediao's supporting instruments are primarily strings (four strand strings and Jiezi), indicating that it is older than Kun qu.2) From the perspective of phonetics and phonology, Yuediao uses the Henan dialect (formerly known as Zhongyuan and Zhongzhou) and preserves many words of Yuanqu. Its lyrics are also compiled in Nanyang dialect. Its initial consonants are completely consistent with the 20 initial consonants in "Phonology of the Central Plains," and its consonants are clearly separated. The "Jiantuan" (dialect rhyme) of Beijing opera, for example, sing with a "Zhongzhou sound," which they obviously learn from Beiqu and Yuediao operas. What is more important is the rhyming method. The "yiqizhe" (rhyme of a dialect) of Yuediao includes words with the vowels "EI" and "UI." This kind of rhyming method is completely consistent with that in the previous Song and Yuan Opera Series. This is also true of many in the Yuan Opera. Although Henan Bangzi (Henan Opera) rhymes in this manner, it may imitate Yuediao opera due to its late age. The characters of "huiduizhe" (rhyme of a dialect) can be compared with "yiqizhe" (rhyme of a dialect), and "Fei" and "Wei" read "Vi" or "Vei," which is the old scale of "Qi Weiyun" (rhyme of a dialect) in "Central Plains phonology," which is consistent with the "Twelve She" (rhyme of a dialect) in the Ming dynasty. From the perspective of the history of Chinese phonology, the rhyme of Yuediao is a "living fossil" in the process of the thirteen Zhe (Zheng, 1985).

Zhou Yibai, a famous contemporary Chinese opera theorist, said in the *Outline of the History of the Development of Chinese Opera*: "After the reign of Emperor Qianlong of the Qing dynasty (1799 AD), the Yuediao opera originated from the Nanyang folk song Xiaoqu, originally named four stringed, which specializes in singing the Yuediao opera and does not mix other songs." It is a variant of the Nanyang Bangzi opera. "The "Yuediao opera" of the four tones of local opera is "flat, back, side, and moon." The flat tone is the positive tone of the big voice, the back tone is the reverse tone, the side tone is the high tone, and the moon tone refers to the "yin tone," that is, "the reverse tone of the bass." He denied the recognition of "Yuediao opera" as one of the nine palace tunes in the north and south of the Yuan and Ming dynasties, on the grounds that many tunes of Yuediao opera are only used for accompaniment and many operas are common, but it contains many types of Bangzi tune, which is closest to the western Henan tune of Henan Bangzi opera. He believed that in its early stages, Yuediao opera only sang "Yuediao" and later absorbed the western Henan tune singing method. The main body of Nanyang Bangzi opera is the western Henan Yuediao opera, but it was not popular until later, and the monthly tune came into being in the local place. Therefore, Henan Yuediao opera "is actually a variant of Nanyang Bangzi opera." (Zhou, 1979).

Based on my fieldwork on Yuediao opera and my analysis of other documents on the origin of Yuediao opera, I believe that before 1911, Yuediao opera developed from a local folk small opera in Nanyang City, Henan Province. After development, it absorbed the musical characteristics of Bangzi opera and Pihuang opera. Now, Yuediao opera focuses more on the musical characteristics of Bangzi opera. Due to regional reasons, it also intersected with Han opera and Xipi opera. As far as the situation in modern times is concerned, I prefer Mr. Wei Tianbao's opinion that Yuediao is between Bangzi opera and Pihuang opera in terms of its voice, and Henan Yuediao is more focused on Bangzi. As for its final formation, it should not be later than the middle of the Qing Dynasty (1736–1850). In the absence of more documents to prove it, it can be traced back to the end of the Ming Dynasty (1644 AD). When did Yuediao opera first appear in Zhoukou? I am more inclined to agree with the views of Mr. Wang Bingcan and Mr. Li Ronghua. Yuediao was introduced into Zhoukou during Tongzhi's reign in the Qing Dynasty (1861–1875). It began in the famous Nanyang class in Xiangcheng, which starred Jiang Gao. In the era of Shen Fengmei, Zhou Kou Yuediao was famous in Henan and Beijing.

3.2 Yuediao opera from 1911 to 1949.

According to the available data, there were records of Yuediao performances in Wuhan, Hubei Province, during the Daoguang period (1821–1850) of the Qing Dynasty. From 1911 to 1949, Yuediao began to enter the city on a large scale. In 1917, Kaifeng City, Henan Province, set up a civilized tea house and began to perform in October. From the summer of 1928 to the autumn of the next year, the Yuediao Opera Troupe, led by Zhang Chunde, performed in Hankou City, Hubei Province, for more than a year, with more than 200 plays performed. After the Yuediao actresses appeared on the stage, they performed more in the city. When Zhang Xiuqing returned to the Wuyang Yuetiao Troupe at the age of 15 (1934), she had become famous in Zhoukou, Zhumadian, Zhengzhou, Kaifeng, and other places and was known as "the most famous actor in Henan." Jinfeng Tower and Mao Ailian are in Xuchang, and Shen Fengmei is in Luohe. The performances are also very frequent. The two most famous Yuediao troupes in the city are the Wang Hongcen troupe and the Shi Daoyu troupe (Zhang, 2014).

Zhou Zesheng examines the biographies of famous senior Yuediao opera artists in Neixiang County. This paper gives a general overview of three senior artists who had a great influence on the art of Yuediao in Neixiang County from the late 19th century to the mid-20th century. 1) Ma Fucai (born in 1873; the date of death is uncertain), a famous actor of Yuediao in Neixiang County He began to study Yuediao in 1885 and soon became the Yuediao actor with the highest artistic attainments in Zhenping County. In 1934, he was transferred to Kaifeng (the capital of the Henan provincial government at that time) to perform. Ma Fucai successively performed more than 10 plays, such as *Subordinate Jiang Wei* and *Empty City Plan*, which caused a sensation in the whole of Kaifeng City. The audience was amazed and said that his acting skills were superb. Ma Fucai devoted his whole life to performing Yuediao and can perform more than 200 plays. He can be called a great master. 2) Wang Zhenkui (1887—1973), a famous actor in Neixiang County. At the age of 14, he began to learn Yuediao and was successively employed as the main actor by several Yuediao troupes. Because of his loud voice and superb acting, he added brilliance to the troupe wherever he went and was deeply loved by the audience. In 1959, he was employed as a teacher at the Zhengzhou Opera School. Wang Zhenkui has deep attainments in opera art, and his performance is serious and

meticulous. He required strictness from students and taught tirelessly; he can be called a model worker. Liu Fuzhi (1892—1953) is a famous actor in Neixiang County. He began to learn Yuediao opera at the age of 13. He is famous in Wanxi County and has become a rare newcomer. He came to Neixiang County in 1930 and was successively employed as the main actor by many Yuediao troupes. Around 1940, Yuediao professional training class was established to cultivate high-quality talents such as Jiang Xigeng, which was praised by the local people (Zhou, 1985).

"Informal drama" refers to the plays that emerged in the late Qing Dynasty (before 1911) and the early Republic of China (after 1911). In terms of the script system, the division of work, and the performance style, they broke the pattern of "Waibajiao," a traditional play with excessive tunes. Its emergence has pushed Yuediao to a new height. "Informal dramas" are mostly "life plays," reflecting secular feelings and joys and sorrows. The use of more regional language and the absence of set performance routines were characteristics of "informal drama" during this time period. It was easy to understand, with a strong flavor of life and a strong local flavor. It was warmly welcomed by the working people. The lyrics of "informal drama" can be long or short, and its structure is flexible. There are more lyrics than words, moving to the other extreme. Many plays, such as Guixi Palace, have no other speeches except for the mutual appellation, summons, newspaper sharing, and brief questions and answers between the characters. Other plays, from the beginning to the end, are all composed of arias. With the increase in volume, dozens or hundreds of long sections of singing can be seen everywhere in the "informal drama." Under the influence of the style and characteristics of this play, "formal drama" has undergone a change into "informal drama," eliminating the stylized singing tunes, enriching the new aria, increasing the randomness of the performance, and even using "opera songs" and "living words" (Hao, 2010).

According to my fieldwork on Yuediao opera and the analysis of other documents on Yuediao opera, the researcher of this paper believes that from 1911 to 1949, Yuediao art played a very important role in the history of its development. It was a link between the past and the future, showing a characteristic that is different from tradition and tends to be modern. During this period, while inheriting the tradition, Yuediao was also influenced by the trend of the times, the exchange between brother dramas, and other factors, resulting in the trend of sprouting new shoots in the tradition. This is one of the main features of modern Yuediao. These accomplishments are the result of a large number of artists who have been honed and innovated, laying the groundwork for Yuediao's post-1949 development pattern. It is worth emphasizing that Yuediao is different from its parent "Nanyang Yuediao" through a series of music and performance reforms, "Zhoukou Yuediao," absorbing the musical elements of other operas and adding new plates such as [TongQi Tune], so as to better adapt to the tastes of the audience in eastern Henan. After hard reform, "Zhoukou Yuediao" has become the mainstream of Yuediao. It has developed rapidly since 1949. The Yuediao we see today is mostly "Zhoukou Yuediao." In a short period of more than half a century, the excessive changes were unexpected.

3.3 Yuediao opera from 1949 to 1966.

With a group of talented and courageous "new writers and artists" such as Zhao Baoheng, who closely cooperated with actors and actively reformed and innovated, "Shanglu diao" began to become the representative of Henan in the context of New China. The 1964 Peking Opera Modern Opera Viewing and Performance Conference set off a nationwide upsurge in the compilation and performance of modern operas. Since then, the Northeast, East China, North China, Central South, Northwest, and Southwest regions have successively held Peking Opera modern opera or modern drama performances. From July 1, 1965, to August 15, 1965, the Central and Southern Region Drama Performance was performed in Guangzhou. Forty-four performance groups from six provinces and regions, including Henan, Hubei, Hunan, Guangdong, and Guangxi, as well as Wuhan Military Region and Guangzhou Military Region, participated in the performance, which covered 20 drama types, including Henan Opera, Beijing Opera, Flower Drum Opera, Gui Opera, Guangdong Opera, Henan Yuediao, Henan Opera, Han Opera, etc. The performance was divided into seven rounds. The delegation of Henan Province sent four opera companies, including Henan Opera, Quju Opera, Yuediao Opera, and Beijing Opera, to participate in the performance, and ten plays were performed. Among them, two plays, "Ba Melon Garden" and "Dou Shu Chang," were performed by Yuediao. From the perspective of the script, the play "Dou Shu Chang" has many reforms and innovations in artistic form. Because of the need for story development, a "play in play" performance situation has been set up.

In performance, it needs to learn from other people's artistic forms, such as allegro, two-clip string, etc. The Central and South China drama watching and performance in 1965 had an important impact on the whole country, especially these modern dramas, which not only trained the creation and performance teams of the participating groups but also will "continue to have a profound impact" on the performance of modern dramas by various types of drama, especially ancient ones, and famous "old" actors. Among them, Henan Yuediao's Ba Melon Garden and Dou Shuchang were recommended to perform in Beijing. After participating in the performance in the Central South District, these small plays were widely printed and published. Henan Yuediao's Ba Gua Garden and Dou Shuchang were transplanted and performed by several brother plays across the country, which is regarded as the honor of Yuediao. Yuediao, as one of the three major operas in Henan Province, was performed in Jinjing, which should be said to have been realized under the macro-decision of the national literature and art policy, the mutual assistance of new writers and artists, and the joint efforts of the government's important performances. The opera performance has become an important "catalyst" for the transition from Yuediao to mainstream discourse (Chen, 2015).

From 1949 to 1966, opera performances were closely linked to opera reform, which together formed an important proposition for contemporary opera. The Instruction on the Reform of Traditional Opera issued by the Chinese Government Council in May 1951 indicated that "whenever possible, a national opera competition should be held every year to show the improvement of various operas, encourage their excellent works and performances, and guide their development." The purpose of watching opera performances is to expand the communication between opera types and actors, set a benchmark by performing together, and then guide the future development of the opera industry. The important goal of drama reform is to achieve the "integrity" of the drama stage system, involving both content and form. To be specific, it is to improve the literariness of the script, enrich the music and singing, seek the unity of stage art style, inherit the realistic tradition of opera performance, and improve the directing system so that various artistic means can be integrated to serve the performance of the theme and shape the characters and ensure the clarity of the theme and the integrity of the characters. If the competition show is "a good way to promote the development of opera art," then the sorting and adaptation of the purpose of the traditional melodies and the creation of new plays will be closer to "integrity" on the one hand and become "demonstration" through the award-winning plays of the show. With the pursuit of "integrity," Yuediao's new style gradually emerges (Xia, 1985).

This study believes that, from the perspective of opera performances from 1949 to 1966, the transformation of Yuediao identity at the government level in the past 17 years has been investigated. The opera performances greatly promoted the transformation and development of Yue Dao and his self-innovation. Through two nationally influential theatrical performances, the first opera viewing performance in Henan Province in 1956 and the drama viewing performance in the Central and Southern District in 1965, this paper analyzes the "transformation" and "innovation" of Yuediao in the mainstream level of opera in the past 17 years. The Chinese opera from 1949 to 1966 was a vast world, which is reflected in all aspects of the cultural ecology of opera. By placing Yuediao, a local drama, in the theatrical arena from 1949 to 1966, the perspective of its research is naturally diversified. Its formation will be determined by the establishment and interpretation of mainstream discourse power, and the government-colored drama performance is simply a suitable space to spy on and analyze the ecology of Henan's Yuediao in New China. Yuediao has gone from improving the literariness of the script, enriching music, and singing, and seeking unity of stage art style to inheriting the realistic tradition of opera performance and improving the directing system so that various artistic means can be integrated to serve the performance of the theme and shape the characters, and then to ensure the clarity of the theme and the integrity of the characters. The two modern operas of Yuediao, Ba Melon Garden and Dou Shuchang, have been highly recognized by the opera circle, which is the best proof of Yuediao's success in "transformation" and "innovation." In the end, "Shangludiao" (represented by Zhoukou Yuediao) won the "attention" and "recognition" of opera experts and the general audience in the performance and began to become the spokesman of Yuediao in China from 1949 to 1966 and decades after.

3.4 Yuediao opera from 1966 to 1981.

Film was born at the end of the 19th century. By the 1920s and 1930s, it had become a popular form of entertainment in many parts of the world. However, in China at that time, in fact, the film "has not completely

replaced the art status of drama in the hearts of most Chinese audiences." Academics generally regard the 1905 release of *Dingjun Mountain*, the first Chinese opera short film, as the beginning of Chinese film, as it indirectly demonstrates the dominant position of drama stage performance in cultural consumption at the time and foreshadows future exploration of national films and "Chinese characteristics." As one of the three major operas in Henan, Yuediao did not have opera films until about 1965. As a relatively ancient drama, none of the traditional operas appeared on the screen. In fact, the theme of opera films during this period was "ancient life." Most of the drama films shot in this issue are presented in the form of "fragments." The Yuediao film "New Opera in Mountain Villages" is a combination of two stage dramas, "Couple" and "Selling Basket." As mentioned earlier, since 1963, a large number of modern operas have been created and performed in various parts of the country. It is against this background that two out-of-tune dramas were born (Chen, 2015).

From 1966 to 1981, compared with the previous development, this period of Yuediao art underwent a change to adapt to the new social changes and the evolution of the audience's aesthetic taste. If the performance of Yuediao in Beijing in 1963 was another prosperity of Yuediao dramas, then the Henan Yuediao Troupe went to Beijing to take part in film shooting in 1979, and as Mr. Shen Fengmei said, it was "prosperity again of Yuediao dramas." From the Yuediao "informal costume opera," Li Tianbao's *Hanging Filial Piety*, to the movie Li Tianbao's *Getting Married*, which is well-known throughout the country, objectively speaking, Yuediao Drama has made new progress in ideology and art. If opera is regarded as an "art," especially to be put on the screen, then this pursuit of refinement by Yuediao is also a necessity of historical development. To a certain extent, filming has promoted the innovation of traditional Yuediao. Of course, "stage" is the lifeblood of drama, and a drama performance outside the film should have a more "real" and vivid existence. However, at that time, those Yuediao films that were generally welcomed by audiences at all levels provided some successful experience for the development and inheritance of current Yuediao.

3.5 Yuediao opera since 1981.

In the 1980s, with the establishment of China's reform and opening-up policies, more attention was paid to the call for national policies, and a series of reforms were actively carried out. During this period, Yuediao created a large number of new historical plays, such as "The Mirror," "Wolong Self-Compiled," "Ah Dou Hen," "The Red Lady," "Just Out of the Thatched Cottage," "Guan Gong Sending Diao Chan," etc., which had new breakthroughs and developments in content and form. At the same time, although there are many traditional dramas and new historical dramas that have been reorganized and adapted for the Yuediao opera stage, there are still masterpieces of modern drama. The content of modern drama in an out of tune performance aims at cultural exploration, influenced by new literary and artistic trends of thought. The modern drama that first appeared on the stage, such as *Butterflies in Love with Flowers*, *Bitter Cauliflower*, *Red Aunt*, *Silence*, etc. With the deepening of reform and opening up, the creators' ideas have been further emancipated and broadened, and Henan local operas have gradually begun to transform from a simple "theory of reflection" to the excavation of the cultural field, which is a bold exploration in form. A number of explorative Yuediao opera modern dramas, such as *The Tearing Red Candle*, *The Marriage Mother*, *Ma Daha Looking for the Crutches*, and *Boss Qiao's Worry*, came into being (Chen, 2015).

Looking at the Yuediao ecology since the 21st century, on the one hand, Yuediao still faces the "dilemma" caused by the general weakness of the performance market. On the other hand, in the context of "intangible cultural heritage," which is gradually becoming the key word of the times, Yuediao people are committed to the creation of dramas that reflect cultural taste and deep artistic conception. Among them, the modern play "Spring Rain in the Far Mountains" is adapted from Jia Pingwa's novel "Heavenly Dog." It is a bold attempt to jump out of the perspective of traditional rural themes and focus on people's emotional instincts. In terms of traditional drama, it not only restored "Female General of Yang Clan" and "Chopping Yang Scene," but also reprocessed old dramas such as "No Jun Mansion," "Red Book Sword," "Li Shuangxi Borrows Liang," etc. The new historical dramas continue to maintain a strong momentum, and *Jane Tiehen*, *Devoted to Qishan Mountain*, *Prince and Minister in the Prosperous Age*, *Lao Tzu*, and others especially show the Yuediao way of self-presentation and the struggle for the right to speak in the new century. However, while active practice has become the "grand plan" of the national stage art boutique project, it has enhanced the Yuediao character of the times but is in danger of losing its "individuality" in this "dramatic" impact (Chen, 2015).

Since the 1980s, in response to the national policy call, Yuedai has actively carried out a series of reforms and achieved some good results. At this time, Yuediao created a large number of new historical plays and modern plays and made new breakthroughs and developments in content and form. In 1983, the Zhoukou Yuediao Troupe was reorganized and upgraded to the Henan Yuediao Troupe. After the 1980s, the main aria of famous actors such as Shen Fengmei became a popular classic. However, in comparison to the 1980s, Chinese opera in the 1990s entered a slump, and the situation in Yuediao is concerning. Some newly restored state-owned troupes were forced to cancel, and the talent drain from the troupes was serious. It was more difficult to pursue and explore the modernization of Yuediao. But at this time, Yuediao was still carrying out self-innovation. There are two trends in the creation of Yuediao in the 1990s: one is the deliberate pursuit of "form" in creation; the other is to seek the integration of "tradition and modernity," focusing on the cultural integration between historical stories and current audiences. On the one hand, looking at the moon carving ecology since the twenty-first century, Yuediao is still experiencing difficulties as a result of the market's poor performance. On the other hand, in the context of the government's "intangible cultural heritage" protection policy, Yuediao is committed to creating drama with cultural taste and deep artistic conception. At this time, Yuediao has made good achievements. For example, the historical drama Lao Tzu, created and performed by the Henan Yuediao Opera Troupe, is the first drama in China to show the image of Lao Tzu in the form of a drama. This drama is one of the "Top Ten Excellent Dramas" of the 2012 National Fine Stage Art Project. In terms of melody design, it adopts the inherent mode of Yuediao, with beautiful lyrics that fully demonstrate the unique charm of Yuediao vocal art. This drama can be called a classic work in the history of Yuediao development. It also helped the Henan Yuediao Opera Troupe get rid of the predicament successfully. However, Yuediao is also in danger of losing its traditional artistic personality while actively striving to become a national stage art boutique project. How will Yuediao "inherit" and "innovate" in the future? How do I open up a new stage? This will be the main issue that Yuediao insiders will face. At present, the Henan Yuediao Opera Troupe is actively exploring new innovation and development spaces and focusing on the local cultural resources of Zhoukou City.

3.6 Conclusion

It mainly introduces the development and formation of Yuediao opera in five parts: the Yuediao opera before 1911, the Yuediao opera from 1911 to 1949, the Yuediao opera from 1949 to 1966, the Yuediao opera from 1966 to 1981, and the Yuediao opera since 1981. Yuediao opera has survived the Qing Dynasty, the Republic of China, and New China. It has a history of more than 300 years. Yuediao opera has changed from a less famous local opera to one of the most famous operas in Henan Province. Yuediao has performed for Chinese leaders six times in Beijing. Even some performing artists, plays, and vocal music are popular throughout the country because of the love of the people all over the country, which is inseparable from the joint efforts of Yuediao performing artists, creators, and audiences of all ages.

3.6.1 Yuediao opera evolved from a local folk small opera in Nanyang City, Henan Province, prior to 1911. After development, it absorbed the musical characteristics of Bangzi opera and Pihuang opera. Now, Yuediao opera focuses more on the musical characteristics of Bangzi opera. From 1861 to 1875, Yuediao opera was introduced into Zhoukou.

3.6.2 From 1911 to 1949, the appearance of actresses promoted the rapid prosperity of "Shangludiao" and also promoted the innovation of the music system in Yuediao. While inheriting the tradition, Yuediao opera was also affected by the trend of the times, brother drama exchanges, and other factors. Zhoukou Yuediao has become the main representative genre of Yuediao opera. The Yuediao opera we see today is mostly about the Yuediao opera in Zhoukou.

3.6.3 From 1949 to 1966, through the first drama performance in Henan Province in 1956 and the second in central and southern China in 1965, these two nationally influential drama performances greatly promoted the transformation, development, and self-innovation of Yuediao. The two modern operas of Yuediao, Bagua Garden and Dou Shuchang, have been highly recognized by the opera circle, which is the best proof of Yuediao's successful "transformation" and "innovation." In the end, Shanglu Tune (represented by Zhoukou Yuediao) won

the welcome of opera experts and the general audience in the performance and became the representative of Yuediao opera in China from 1949 to 1966 and decades later.

3.6.4 From 1966 to 1977, due to the government's policy of advocating the creation of "model plays," Yuediao opera suffered serious losses. Most Yuediao troupes were banned, stopped, or disbanded, leaving only Zhoukou, Xuchang, and Sheqi Yuediao troupes in the province. During this period, only Zhoukou Yuediao Theatre Troupe (the predecessor of Henan Yuediao Theatre Troupe), under the guidance of Peng Xiuwen, a famous musician, created and rehearsed large-scale modern plays such as Yuediao's "The Story of the Red Lantern," which had a great impact both inside and outside Henan Province. From 1979 to 1981, four drama films were made, including the Yuediao opera Zhuge Liang Holds a Memorial Ceremony to Zhou Yu. Yuediao opera has made great progress from script literature, director, and music to stage art. Overall, the innovations made by Yuediao opera in this period to adapt to the audience's aesthetic appreciation are mainly reflected in the following 4 aspects: first, to delete some unnecessary details so as to further refine the drama structure; second, to transform the characters in traditional Chinese opera and pursue the unity of characters; third, to delete some vulgar stories and lines; fourth, to promote the drama of the whole drama with comprehensive performance; and finally, to strengthen the comedy story plot of the drama plot in order to gain more audience. Objectively speaking, the recording and shooting of film operas promoted the self-innovation of traditional Yuediao to a certain extent.

3.6.5 In the 1980s, in response to the national policy call, Yuedai actively carried out a series of reforms and achieved some good results. At this time, Yuediao created a large number of new historical plays and modern plays and made new breakthroughs and developments in content and form. In 1983, the Zhoukou Yuediao Troupe was reorganized and upgraded to the Henan Yuediao Troupe. After the 1980s, the main arias of famous actors such as Shen Fengmei became popular classics. However, in comparison to the 1980s, Chinese opera in the 1990s entered a slump, and Yuediao's situation is concerning. Some newly restored state-owned theatrical troupes were forced to cancel, and the talent drain from the troupes was serious. It is more difficult to pursue and explore the modernization of Yuediao opera. But at this time, Yuediao is still carrying out self-innovation. There are two trends in the creation of Yuediao in the 1990s: one is the deliberate pursuit of "form" in the creation; the other is to seek the integration of "tradition and modernity," focusing on the cultural integration between historical stories and current audiences. Looking at the Yuediao in the twenty-first century, on the one hand, the Yuediao is still caught in a bind caused by the poor performance market. On the other hand, in the context of the government's "intangible cultural heritage" protection policy, Yuediao is committed to creating dramatic cultural taste and profound artistic conception.

However, while actively striving to become an excellent national stage art project, Yuediao is also facing the danger of losing its traditional artistic personality. How will Yuediao "inherit" and "innovate" in the future? How do I open up a new stage? This will be the main problem faced by Yuediao insiders. At present, the Henan Yuediao Opera Troupe is actively exploring new spaces for innovation and development and focusing on the local cultural resources of Zhoukou City. To make the development period of Yuediao opera clearer, I will summarize in table format.

Table 2: The Development of Yuediao opera in Zhoukou City, Henan Province, China.

Period	Factors	The Development	Effect of the development
Before 1911	Before 1911, the development of Chinese opera was very prosperous, which promoted the exchange of local operas. In this case, Yuediao opera actively sought to learn from other better operas in order to grow.	Yuediao opera absorbs the musical features of Bangzi opera and Pihuang opera. In terms of sound, Yuediao opera absorbs more characteristics of Bangzi opera music.	Yuediao opera has evolved from Henan Province's local folk small operas to three major operas. From 1861 to 1875, Yuediao opera was introduced into Zhoukou.
1911-1949	During this period, the Chinese government experienced the demise of the Qing Dynasty and the founding of the	Female artists can perform Yuediao opera on the stage and gradually gain a warm welcome from experts and	From 1911 to 1949, Shanglu Yuediao, which was best shown by Zhoukou Yuediao opera, was the most

Period	Factors	The Development	Effect of the development
	Republic of China. The appearance of female artists in Yuediao opera promoted the prosperity of Yuediao opera and the reform of the system.	the audience. Female artists promote the prosperity and development of Yuediao opera.	important type of Yuediao opera.
1949-1966	The founding of the People's Republic of China further promoted the prosperity of opera. These two nationally influential drama performances greatly promoted the transformation, development, and self-innovation of Yuediao.	Yuediao opera was made to achieve the "integrity" of the drama stage system, which means to improve the literary quality of drama scripts, add to music and singing, look for the unity of stage art style, carry on the realistic tradition of drama performance.	During this period, Shen Fengmei and a group of nationally known actors with Yuediao emerged. Zhoukou Yuediao has been the representative of Chinese Yuediao opera since 1949.
1966-1981	The government's policy of advocating the creation of "model plays," Yuediao opera suffered serious losses. Most Yuediao troupes were banned, stopped, or disbanded.	During this period, only the predecessor of Henan Yuediao Theatre Troupe, under the guidance of Peng Xiuwen, a famous musician, created and rehearsed large-scale modern plays such as Yuediao's "The Story of the Red" which had a great impact both inside and outside Henan Province.	To a certain extent, filming has promoted the innovation of traditional Yuediao. At that time, those Yuediao films that were generally welcomed by audiences at all levels provided some successful experience for the development and inheritance of current Yuediao.
1981-2021	With the establishment of national reform and opening-up policies the content of modern drama performed in Yuediao opera was aimed at cultural exploration. The plight of Yuediao is even worse, the brain drain is serious, and the pursuit and exploration of Yuediao modernization are even more difficult. On the other hand, under the care of the national policy of "intangible cultural Yuediao people are committed to promoting the local characteristic cultural taste and creating a deep artistic conception.	Yuediao created a large number of new historical plays, which had new breakthroughs and developments in content and form. At the same time, the content of Yuediao modern drama aims at cultural exploration. On the one hand, it is due to the lack of a performance market and various difficulties brought by audience appreciation; on the other hand, the slow recovery was supported by the national policy of "intangible cultural heritage."	Yuediao explored the cultural field and then made bold explorations in form. A number of experimental Yuediao modern dramas were created. The pursuit of traditional Yuediao in the creation of operas, and the other was the seeking of the integration of tradition and modernity. Creating cultural taste and deep artistic conception.

4. Discussion

Through field investigation and literature analysis, I think it is necessary to explore the development process of Yuediao opera from the perspective of historical development. Yuediao opera experienced the development of the Qing Dynasty (1636–1911), the Republic of China (1911–1949), and the New China (1949–present). It has a history of more than 300 years. In my opinion, Yuediao opera's transformation from a lesser-known local opera to one of Henan Province's most famous operas is inextricably linked to the collaborative efforts of successive generations of Yuediao performing artists and creators. In the historical process of its century-old development, Yuediao opera has gone from the heyday of "formal costume drama" to the prosperity of "non-formal costume drama," from the emergence of actresses in the Republic of China period to the great contribution made by actresses to the prosperity of Yuediao opera and has undergone tremendous changes in terms of music system, performance style, aesthetic character, and band system. All the above are due to the efforts of Yuediao's

performing artists and creators. At the same time, it is also inseparable from historical factors such as the Qing Dynasty that imprisoned human creativity, the Republic of China under the turmoil of the times, the literary and art policy of New China that promoted the prosperity and development of opera, and the mutual influence of multiculturalism in the contemporary world. In addition, there are profound social and historical reasons for the production and dissemination of Yuediao opera. Of course, this is an unavoidable result of cultural development, owing to the fact that the development of Yue Tiao music and art begins with the development of the social economy, and its artistic development is inextricably linked to social and economic development. This needs to be explored from the perspectives of socio-economic development and cultural development, and I think this is a necessary research method.

The results of my research are consistent with the following scholars' views: 1) During the Republic of China period's transformation, the "Shanglu Diao" of Yuediao opera took advantage of the opportunity to develop and become the main spokesperson of Yuediao opera in Henan opera (Chen, 2015). 2) After entering New China (1949–now), people have been paying attention to this ancient art, which has played an important role in the development and changes of Yuediao opera (Zhang, 2014). 3) Over the course of its development, Yuedao opera has changed from "formal play" to "informal play" and then to the reform of Chinese opera, with great changes in the music system and performance style (Ma, 1989).

The results of my research are consistent with my point of view in the field investigation. 1) The emergence of actresses during the Republic of China made a great contribution to the prosperity of Yuediao opera (Ms. Shen Xiaomei, interviewed in 2021). 2) Yuediao opera has changed from "formal play" to "informal play," which has prompted great changes in Yuediao opera in terms of music system, performance style, and band system (Mr. Wei Tianbao, interviewed in 2021). (3) During the period of the Republic of China, the prosperity of Yuediao opera "Shangludiao" made it the main spokesperson of Yuediao opera in Henan opera (Mr. Wang Bingcan, interviewed in 2021).

Acknowledgements

This research project was financially supported by Mahasarakham University.

References

- Chen, C. (2015). *Research on the Evolution of Henan Yuediao*. Beijing, Doctoral Dissertation of China Academy of Arts. 2015.
- Chunqing, Z. (2013). *The Longshan culture in central Henan province, c. 2600–1900 BC*. A companion to Chinese archaeology, 236-254.
- Hao, A. (2010). *Research of vocal art about the opera of Henan yue*. Xinjiang, Master's thesis of Xinjiang Normal University. 2010.
- Leet, M. (2023). Henan Province. CHINAFOLIO. Retrieved May 2, 2023, from <https://chinafolio.com/provinces/henan-province>
- Li, X., Harbottle, G., Zhang, J., & Wang, C. (2003). The earliest writing? Sign use in the seventh millennium BC at Jiahu, Henan Province, China. *Antiquity*, 77(295), 31-44.
- Li, Z., Zhu, C., Wu, G., Zheng, C., & Zhang, P. (2015). Spatial pattern and temporal trend of prehistoric human sites and its driving factors in Henan Province, Central China. *Journal of Geographical Sciences*, 25, 1109-1121.
- Liu, L., Chen, X., Lee, Y. K., Wright, H., & Rosen, A. (2004). Settlement patterns and development of social complexity in the Yiluo region, North China. *Journal of Field Archaeology*, 29(1-2), 75-100.
- Lu, P., Tian, Y., & Yang, R. (2013). The study of size-grade of prehistoric settlements in the Circum-Songshan area based on SOFM network. *Journal of Geographical Sciences*, 23, 538-548.
- Ma, Z. (1989). *Collection of Essays on Henan Opera History*. Zhongzhou Ancient Books Publishing House. (1), 32
- Oun, M. A., & Bach, C. (2014). Qualitative research method summary. *Qualitative Research*, 1(5), 252-258.
- Shepherd, E. T. (2007). *A pedagogy of culture based on Chinese storytelling traditions* (Doctoral dissertation, The Ohio State University).

- Wang, L., & Cui, Y. (2021). The spatiotemporal pattern of cultural evolution response to agricultural development and climate change from Yangshao culture to Bronze Age in the Yellow River basin and surrounding regions, north China. *Frontiers in Earth Science*, 9, 657179.
- Wei, T. (2008). Henan Yuediao's "Formal Costume Drama" and " Informal Costume Drama". *Oriental Art*. (S1), 12-14.
- Wei, T. (2008). Introduction to Henan Yuediao opera. Beijing, *China drama publishing house*. (6), 1-26.
- Xiaoqian, H. Karin, K. and Chuangprakhon, S. (2021). The Guzheng Music in Henan Province, China. Review of International Geographical Education (RIGEO), 11(5), DOI: 2755-2765.doi:10.48047/rigeo.11.05.173
- Zhang, J. (2014). Henan Yuediao in the Period of the Republic of China. *Journal of Chinese Academy of traditional opera*. (5), 96-100.
- Zhao, H. (2009). Research On the Development Status and Protection Countermeasures of Henan Yuediao. *Chinese drama*. (06), 52-54.
- Zheng, L. (1985). The Study of Yuediao Origin. *Editorial Committee of Henan volume of annals of Chinese traditional opera*. (01), 90-94.
- Zhou, Y. (1979). Outline of the Development History of Chinese opera. Shanghai, Shanghai ancient books publishing house. (01).

Influencing Factors on Four Chinese Grand Theaters' Brand Image

Zhexin Li¹, Sarana Photchanachan²

^{1,2} School of Management, Shinawatra University, Bangkok, Thailand

Correspondence: Zhexin Li. Email: youbu2011@163.com

Abstract

The objective of this paper was to investigate influencing factors in building four Chinese grand theaters' brand image. The Grand theaters as research objectives are respectively the National Center for Performing Arts, Shanghai Grand Theater, Guangzhou Opera House, and Shenzhen Grand Theater. A survey questionnaire was used to collect data from more than 1000 audiences of each theater and 4025 complete questionnaires retrieved and a quantitative method via SPSS version 23.0 was used to analyze the correlational and regression statistical research outcomes.

Keywords: Chinese Grand Theaters, Brand Image, Influencing Factors, Arts Marketing

1. Introduction

In the year of 1989, Shenzhen Grand Theater as the first grand theater, was contributed by the local government. During the following three decades, there were more than 2000 theaters constructed all over the country. Thus "theater's brand managing" was a realistic problem during its operation and management under the background of reforming and opening up in the industry of culture and art. As the world was changing in every second, theatergoers, arts performances audience were rapidly changing. Experts ranging from economists to cultural historians had all documented a shift in consumer patterns as audiences searching for live entertainment moved from the concert hall and the playhouse to the arena and nightclub. This shift happened because the audience no longer had an interest in the arts. (Tepper, 2012)

As for theaters' marketing, the earliest marketing concept of art products was introduced by Philip Kotler in 1967. (1967) He thought that public libraries, concert halls, museums, theaters, and other cultural institutions that create cultural and art products, though as nonprofit organizations, were facing the similar marketing problems in the process of cultural and art products' creation. The problems were: how to attract the attention of consumers and how to sell the products. It is also an immediate problem after the products produced. **Therefore, to attract audiences by building their own brand image is essential for the management of grand theaters in the future.**

As individuals and customers, they have unique feelings and attachment to some brands. They feel special when they use the brand, and often have a sense of pride in being associated with the brand. Even though there could be many alternatives, there is always a special place for that brand in their heart. These perceptions keep the brand going and make them, as a brand user, keep using or associating with that brand.

Therefore, this paper focused on the following questions:

- 1) How did the audience perceive on the grand theaters' brand image?
- 2) How did the factor of 3Ps+C (respectively Product, Place, Price and Communication) impact the brand image of grand theaters according to the audience' perception?

This paper was conducted to investigate consumers perception of the grand theaters' brand image under the guidance of branding theory and marketing mix theory, and to find out how did marketing mix 3Ps+C influence the grand theaters' brand image. It would be the proposed conceptual framework as the following Figure 1. Based on the proposed conceptual framework, there were 4 hypotheses as follows:

- H1: There is significant relationship between the factor of Products and the theaters brand image.
 H2: There is significant relationship between the factor of Price and the theaters brand image.
 H3: There is significant relationship between the factor of Place and the theaters brand image.
 H4: There is significant relationship between the factor of Communication and the theaters brand image.

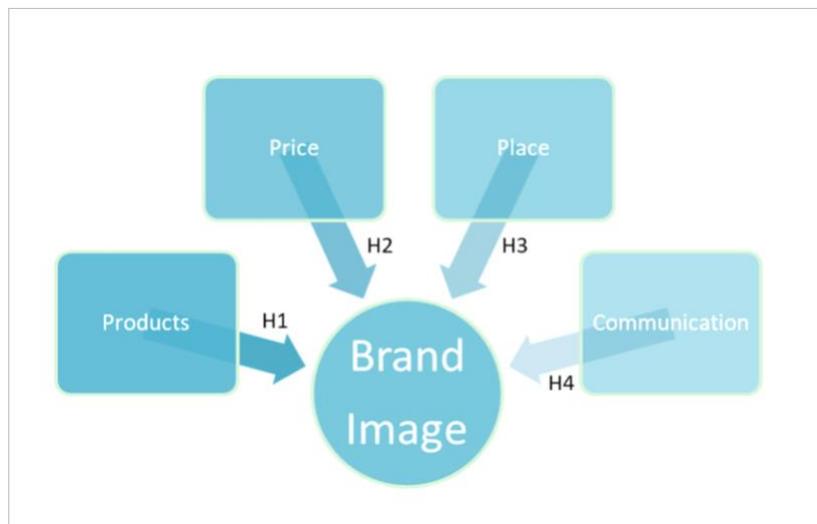


Figure 1: The proposed conceptual framework

The paper is organized as follows: Part one is to introduce the research background and the research questions and objectives. Part two is the literature review of theories and correlational researches. Part three is the tool and method to conduct the research. Part four is the research result and discussion, and part five is the conclusion, the research limitations and the future research.

2. Literature Review

Keller believed that exploring consumers' brand perceptions is an important field of marketing and consumer research. (Keller, 2016) As for the concept of "brand image", according to Park et al. (Park et al., 1986, P133-145), the construction and maintenance of the brand image is prerequisite to the brand management.

More important than the concepts, how to measure it became research questions to be develop among the scholars. According to Chinese scholar Yi, most of the scholars believed that the brand image should be measured by the consumers' perception. Some of them stress the quality of the products and services, for example, products advantages, using qualities and also the ideas and emotions people associated with the brand from the very practical features. (Yi,) Some of them discussed on mind share of the brand image. Mind share is discussed in relation to brand positioning, which refers to a product's position in a certain market. Positioning encompasses the majority

of the common meanings of the word position: position as a place, position as a rank, and position as a mental attitude.

As for the marketing disciplines, the art marketing concept is handled under cultural marketing activities by Kotler. Based on the definition of classical marketing, which is to create products that meet the needs and demands of consumers to maximize operate performances. The marketing mix was proposed as the 4Ps (Product, Price, Place, Promotion) by McCarthy (1964), to provide an adequate platform for art performing marketing. The shortcoming of the 4Ps marketing mix framework, some of the scholar come up with 5Vs, 8 components, 4Cs. What's the most important, Chinese scholar Li put up with "3Ps+C", raising communication instead of promotion (Li, 2001).

Bernstain kept working on the major brand elements, such as product, experience, identity, associations, cooptation and so on. (Bernstain, 2017) he believed that each individual event, program, communication strategy and customer service encounter is a crucial element of branding process. Yu studied on the basis of theater evaluation and research variables through a total of 303 valid questionnaires and multidimensional scaling, drew a "brand positioning space map" for eight Taiwan modern theater companies. Hall and et al. contributes to the literate by making recommendations on how to enhance brand resonance thereby increasing attendance. They examined traditionally successful brand resonance concepts of loyalty, attachment, community and engagement (Keller, 2001) specifically for rebuilding and sustaining attendance at the opera in the post-crisis period. Kemp and Poole believed that the impact of the factors on key engagement outcomes, such as perceived value, loyalty, and advocacy. Polegato et al explored audience perceptions on brand dimensions of a cultural product, which are artistic innovation, pride, and for ordinary people/everyone. What's more, they mentioned nice experience overall, high artistic quality in general, ballet for many types of audience, nice building, artistic innovation, ballet for the cultural elite, great art, for many types of audiences, performances for children, opera for the cultural elite, exclusive, knowledge, pride, broad-minded/open, feminine, tourist attraction, enthusiasm, for ordinary people/everyone the element they proposed in their study were quite specific as a reference to the research design of my dissertation. (Polegato et al, 2013) Chen and et al. investigated in an arts festival in Taiwan. The results indicate the respondents' future behavioral intentions are the best explained by two factors: one is emotional experiences, the other is behavioral experience. (Chen and et al, 2018) Li from Taiwan researched on a mix survey both by interviews and questionnaires, to conclude their functional dimension, symbolic dimension, experimental dimension with different index on each level. (Li, 2018)

The researchers conducted the kind of research was to find the way to measure brand image and the factors influencing the brand image.

3. Methodology

The study has followed a quantitative approach and conducted surveys for data collection. The quantitative research was carried out to figure out what the audiences perceived of the brand image of four grand theaters ran by the municipal government by using survey questionnaire to collect data from more than 4000 audience (or target audience). In order to comply with the branding theories and marketing theories on arts, it was necessary to identify the audience's satisfaction with the brand image.

3.1 Population

Population in the research are respectively from where the 4 grand theaters are located and near. They are mainly from the cities of Beijing, Shanghai, Guangzhou and Shenzhen, and some of them from the rural area of the four cities and cities near them.

3.2 Sample Size

During the research conducted, the author distributed more than 1000 samples nearby each theater and obtained 1025 complete questionnaires for the NCPA (National Center for Performing Arts), 1010 for Shanghai Grand Theater, 1007 for Guangzhou Opera House and 1010 for Shenzhen Grand Theater to analyze the data.

3.3 Sampling

The quantitative research designed using the simple random sampling design. Individuals attending the performances or walking around the theaters were used as study participants in this research. Individuals filled out a survey by scan a QR Code. This was done over the course of the 6-7 performances (in three weeks) in the season.

3.4 Data Collection

Since this research was a quantitative research design, the feedback data concerning perceived brand image from the sample (audience and target audience) was collected through survey questionnaire to measure audience perception of brand image and its four dimension and factors. The measures were developed specifically for this research. Satisfaction with products was measured by the elements of categories, originality, the persons who produce and perform. Satisfaction with price was measured by the elements of ticket, tour, gifts, food & beverage, promotion, and discount. Satisfaction with place was measured by location, area, transportation, public facilities and layout. Satisfaction with communication was measured by the elements of websites, magazines, audience development, public arts education, team sales channels, retailing channels, reservation channels, new media and advertisement.

The brand image was measured by respectively satisfaction on the four dimensions, satisfaction on the brand image as whole. What's more, how do you agree that the brand is a leading brand in the industry would be another question to ask as for the positioning of the theaters. Last but not the least, the association in mind as a first reaction to the brand, would be another important measurement for both the brand image.

The question of "what's the value you gained from the Performances and Services of the Shanghai Grand Theater?" would help us to figure out the marketing strategies for the brand image.

3.5 Questions Design

The researcher used a constructed survey to collect the data from the samples. In the first part, questions like "When is your most recent time of going to the theater?" "Where are you living?" "Who accompany you go to the theaters at the recent time?" "How do you love performing arts?" "Which performing categories do you like?"

In the second part, the questions were related to the brand images as a whole which was variable in the research. "Do you agree that the theaters are the leading brand among the professional theaters?" "In general, the degree of your satisfaction with performances and services from the theaters?"

In the third part, questions with 5-scale options, relating to factors and elements influencing brand image, were with 4 questions matching 4 dimensions of 3Ps+C.

3.6 Data Analysis

This study focuses on brand images and seeks to discover the branding marketing techniques that fall under the purview of various marketing theories and branding theories. In order to discover the brand images and marketing strategies to promote the brand images of the four theaters in China that are operated by the municipal government, the satisfactory data and correlational data of brand images as a whole as well as the four dimensions of brand images are analyzed quantitatively. This allows for the discovery of the brand images and the further researches on marketing strategies to promote the brand images of the grand theaters. In addition to this, SPSS 23.0 is used in the process of doing the correlational analysis on the statistical analyses.

4. Findings and Discussion

4.1 Reliability and Validity Analysis

In this study, the internal consistency reliability of the scale was tested using the Cronbach's alpha coefficient of each latent variable, and the coefficient values for four questionnaires were respectively 0.926, 0.926, 0.923, 0.920, respectively. all of the values exceeded the acceptable level of 0.7, indicating a high level of reliability and consistency.

Besides, KMO and Bartlett tests were used to analyze the scale validity. The KMO value respectively reached 0.945, 0.943, 0.942, 0.936, and the significance of Bartlett test was less than 0.001, indicating that the scale had high validity and accuracy.

4.2 Agreement on the Theaters as Leading Brands

With the question asked “do you agree that the theaters are the leading brand among the professional theaters?” With the minimum as 1, the maximum as 5, mean of the four theaters are respectively 3.86, 3.887, 3.47 and 3.47, and standards deviations are 1.027, 1.011. 1.035. 1.033, which means that generally the respondents believe the theaters are leading brands among the professional theaters, with a decrease degree of agreement on Shanghai Grand Theater, to the NCPA, to Shenzhen Grand Theater, the same with Guangzhou Opera House. With similar mean of 3.86 and 3.87 and small different standards deviations of 1.027 and 1.011, which means respondent for NCPA may have more different ideas on this question. Some really agree on its leading role among the professional theaters, some don't agree too much on its leading role. It's the same that, Guangzhou Opera House and Shenzhen Grand theater have the same mean of 3.47 and a nearly identical standards deviation of 1.035 and 1.033, from which we could estimate that in Guangzhou and Shenzhen, the audience all regard the theaters as a somewhat leading brands with a degree of not too high and not too low.

The Theaters	Min	Max	Mean	Std.
NCPA (N=1025)	1	5	3.86	1.027
Shanghai Grand Theatre (N=1010)	1	5	3.87	1.011
Guangzhou Grand Theatre (N=1007)	1	5	3.47	1.035
Shenzhen Grand Theatre (N=1010)	1	5	3.47	1.033

Figure 2: The degree of agreement on the theatres being the leading brand among the professional theaters

4.3 The Audience' Satisfaction with Brand Image

With the question asked “in general, the degree of my satisfaction on performances and services from the theaters? The answer could be chosen are highly satisfactory, satisfaction, partly satisfaction, dissatisfaction, strongly dissatisfaction, refuse to answer/ not sure”. With the minimum of 1, and maximum of 5, the mean of four theaters is respectively 3.82 of Shanghai Grand theater, 3.80 of Shenzhen Grand Theater, 3.78 of the NCPA and 3.42 of the Guangzhou Opera House. We could see that, the data from Shanghai, Beijing and Shenzhen is approximately, but in Guangzhou, the degree was low than others. As is shown in Figure 3.

Since there are Matrix options with the question asked the performing products or service from the theaters from the respect of categories, originality of the products, professionalism, artistry, the directors, performers and teams they invited.

The Theaters	Min	Max	Mean	Std.
NCPA (N=1025)	1	5	3.78	1.139
Shanghai Grand Theatre (N=1010)	1	5	3.82	1.068
Guangzhou Grand Theatre (N=1007)	1	5	3.42	1.282
Shenzhen Grand Theatre (N=1010)	1	5	3.80	1.084

Figure 3: In general, the degree of satisfaction on performances and services from the theaters

4.4 Correlation Analysis on Variables and Theaters as Leading Brands

4.4.1 About the NCPA

Concerning the NCPA, a positive association exists between the degree to which one is content with the discount for special individuals and the degree to which one is in accord with the leadership role of the brand. Which indicates that, as a national performing arts theater, the audience cares a lot about the various price points, and they care considerably more about the elderly and the students than any other demographic. Because theaters are places where students may be educated, particularly the nation's top-level performance center, a lot of audience members would want to visit and experience there with their families. This is especially true for the theaters that are located in top-tier cities. We were able to discover through correlation analysis that the audience places the most weight on how satisfied they are with the location, their impression of the location, the accessibility of the location, and the internal layout of the architecture when deciding whether or not to consider it a leading brand. Since the degree with a positive correlation degree of .107** and .107** respectively, as shown in figure 4, the NCPA enjoys its reputation as a leading brand, which has been impressed by its broadcasting on the media and by the world's most famous artists, directors, and teams invited to perform there. This has resulted in a degree with a positive correlation degree of .107**, respectively supporting H1 and H4.

On the other hand, the categories of production and public amenities — such as restrooms, rules for the handicapped, parking lot, and so on— as well as the impression on price connect adversely with a leading theater brand in the opinion of the audience (supporting H3 and H2). The conclusion that can be drawn from this is that theatergoers do not even anticipate too many production categories being created by the theater. (supporting H1) As a result of the fact that the NCPA represents the greatest artistic standards of the high arts, the audience would like to witness the performance in an environment that is associated with the high arts. (supporting H1) Because pricing is another benchmark that a theater may use to display its reputation and the quality of the plays it puts on, it is adversely connected to the brand images of the theater. (supporting H2)

From the correlational analysis of the variables of the NCPA, it supported H1, H2, H3 and H4 apparently.

Variables	The degree of agreement on the theaters being the leading brand among the professional theaters
Satisfaction in general	.789***
Satisfaction on categories	-.098**
Satisfaction on the directors, performers, and teams cooperated with	.107**
Satisfaction on discount for special persons	.146***
Satisfaction on location	.133***
Satisfaction on public facilities (Bathrooms, guidelines for the Disabled, Parking Lot and so on)	-.088*
Impression on the pricing	-.087**
Impression on the location, transportation, internal Layout	.149***
Impression on the communication on medias	.107**

(*p < .05, **p < 0.01, ***p < .001)

Figure 4: Variables and Brand Images as a Leading Brand of the NCPA

4.4.2 About Shanghai Grand Theater

When it comes to the Shanghai Grand Theater in figure 5, it demonstrated that people are interested in the uniqueness of the production and its reservation channels more than anything else. (supporting H1 and H4) Shanghai, the most developed and trendy city in China, has its own distinct aesthetic preferences when it comes to art. The patrons of the theater would like it if the brand would stage one of their own productions as part of the

brand value for the venue. When there was a leading show, there would be a leading brand of the theater, and the spectators would race for one precise theater rather than others. But this won't happen until there is a leading production. Reservation channel is an additional factor that contributes positively to Shanghai Grand Theater's leading role. This is because, as members of this generation, people buy everything through their phones, where they would prefer to reserve a seat and purchase a ticket in a manner that is more convenient. The negative connection is about the audience's contentment with the functional position of the area in which it is placed, which indicates that the less of a leading brand it is, the busier and more central of an area it is located in. (supporting H3)

From the correlational analysis of the variables of Shanghai Grand Theater, it H1, H3 and H4 were apparently tested.

Variables	The degree of agreement on the theatres being the leading brand among the professional theaters
Satisfaction in general	.252***
Satisfaction on originality of the products	.063*
Satisfaction on the functional positioning in the city	-.069*
Satisfaction on reservation channels	.079*

(*p < .05, **p < 0.01, ***p < .001)

Figure 5: Variables and Brand Images as a Leading Brand of Shanghai Grand Theater

4.4.3 About Guangzhou Opera House

The correlational variables and Guangzhou Opera House's status as a leading brand were the topics that are discussed in figure 6. An examination of the data revealed that each of the four components had a beneficial impact on the company's brand image. In the same vein as the Shanghai Grand Theater, the audience's perception of the brand image was directly proportional to the degree to which it is communicated about in the media. (supporting H4) The level of pleasure that respondents have about public amenities (with a degree of 0.067*, supporting H3) and the pricing of various additional services (including tours, presents, food and beverage) (with a degree of 0.076*, supporting H2) are the aspects that have the most impact on the brand's image. Guangzhou Opera House is distinct from Shanghai Grand Theater in that there is a positive association between the component of location and the image of the brand in Guangzhou Opera House (supporting H3).

From the correlational analysis of the variables of Guangzhou Opera House, H1, H2, H3 and H4 were tested significantly.

Variables	The degree of agreement on the theatres being the leading brand among the professional theaters
Satisfaction in general	.306***
Satisfaction on price of other service (Tour, Gifts, Food and Beverages)	.076*
Satisfaction on public facilities (Bathrooms, guidelines for the Disabled, Parking Lot and so on)	.067*
Impression on the location, transportation, internal Layout	.064*
Impression on the communication on medias	.093**

(*p < .05, **p < 0.01, ***p < .001)

Figure 6: Variables and Brand Images as a Leading Brand of Guangzhou Opera House

4.4.4 About Shenzhen Grand Theater

Regarding Shenzhen Grand Theater, the data shown in figure 7 revealed that there were five aspects or factors that had a positive correlation to the brand image of the company as a market leader throughout the whole industry. There was a favorable correlation between the leading brand of Shenzhen Grand Theater and the impression on the price (0.099**, supporting H2), communication on medias (0.085**, supporting H4), and goods and services (0.074*, supporting H1). In addition, the pleasure of the audience about public arts education (0.064*, supporting H4) and that regarding the artistry of the production (0.062*, supporting H1) are also essential components that contribute to the success of the theater as a leading brand among all of the professional theaters.

From the correlational analysis of the variables of Shenzhen Grand Theater, it H1, H2 and H4 were apparently tested.

Variables	The degree of agreement on the theatres being the leading brand among the professional theaters
Satisfaction in general	.531***
Satisfaction on artistry	.062*
Satisfaction on public arts education	.064*
Impression on the products or service	.074*
Impression on the pricing	.099**
Impression on the communication on medias	.085**

(*p < .05, **p < 0.01, ***p < .001)

Figure 7: Variables and Brand Images as a Leading Brand of Shenzhen Grand Theater

4.5 Analysis on the terms associated in mind as the brand images

One of the questions that was included in the surveys was worded as follows: "As a brand, what do you immediately think of when you think of these theaters?" possibilities include "high-level artists," "high art," "a wonderful and beautiful building," "the name of the city," "an art festival or activity in it," and "a performance." Attendees of the NCPA are most likely to remember the name of the city (with a percentage of 54.33%) and high-level artists (with a proportion of 45.07%), as shown by the data in figure 4.47. The high arts and magnificent architecture come in second with respective proportions of 39.5% and 38.91%, while one performance and art festival or activity in it comes in third with respective proportions of 32.34% and 23.88%.

The findings of the Shanghai Grand Theater are completely different from those of the NCPA; the high arts come in first place with a score of 75.15%. With a percentage of 53.27 percent, high-level artists come in at number two, although their share is bigger than that of the NCPA. The following components are architecture (42.18 percent), an art event or art activity (34.46 percent), one of the performances (31.09 percent), and the name of the city (26.24 percent) at the conclusion.

As for the Guangzhou Opera House, the first two are respectively the name of the city (76.86%) and an art festival or art activity (53.43%), whereas the Shenzhen Grand Theater has a 54.46% impression on architecture and high art (37.03%), with an average low impression when compared to other theaters.

Through the investigation on the terms associated in mind with the grand theaters' brand image, it almost perfectly met the findings and the data analysis in the section 4.4. This would be significant for the further research on the marketing strategies of the four different grand theaters.

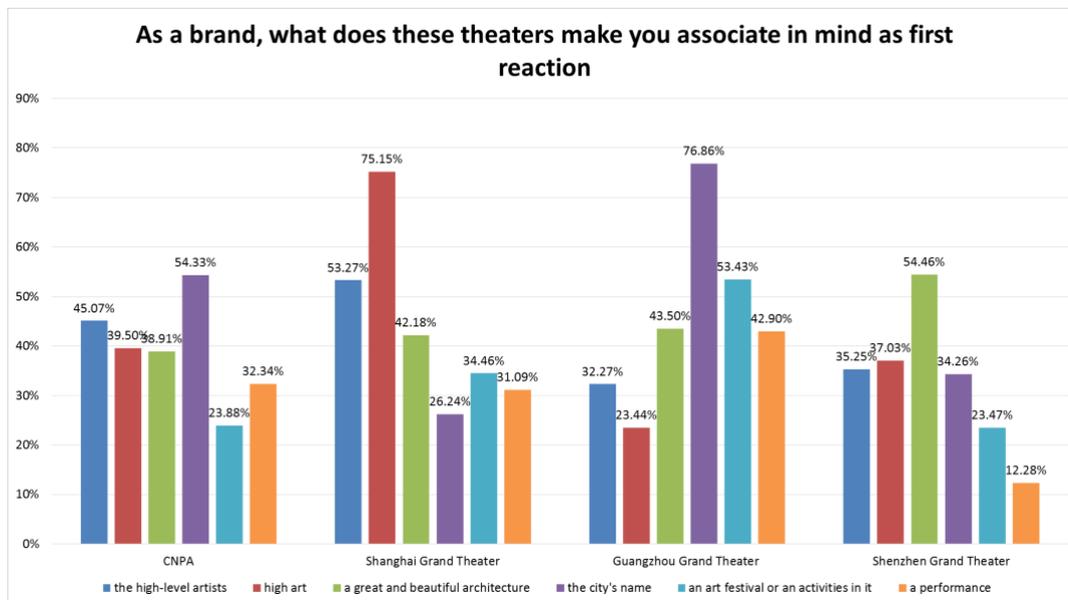


Figure 8: Respondents' Impression on Four Theaters

5. Conclusion

The study in this research demonstrated how audience perceive on brand image of four grand theaters in China. Besides, it studied how did the factors of 3Ps+C influence audience perception on theaters' brand image.

Focusing on the brand image of the four grand theaters, the study tested 4 hypotheses by the statistical analysis. However, the limitations of this paper are mainly self-evaluation method. In the future, multi-source evaluation can be adopted, that is, the evaluation data from the theater managers and directors, together with artists can be collected to reflect the situation to investigate in the marketing strategies for the grand theaters.

Future research should explore the marketing strategies of different grand theaters when they are dedicating to building the brand image. What's more, the investigations on other sort of theater other than grand theater run by the government are significant as well.

Acknowledgements

My sincere appreciation to my advisor Dr. Sarana Photchanachan's helpful guidance and patience for me to complete the paper.

References

- McCarthy, E.J. (1964). *Basic Marketing: A Managerial Approach*, Homewood, IJ: Rich and D.Irwin, Inc.
- Keller, K. L. (2001). *Building customer-based brand equity: A blueprint for creating strong brands*. Working Paper Report No. 01- 107. Marketing Science Institute.
- Bernstein, J. (2017). *Standing room only: Marketing insights for engaging performing arts audiences*. Springer.
- Li, M. (2018). *The study of the brand loyalty of Taiwan Hakka traditional theatre–Based on “Romshing Hakka Opera Troupe”*. Taiwan : National Central University.
- Park, C. Whan, Bernard J. Jaworski, and Deborah J. Macinnis (1986). *Strategic Brand Concept-Image Management*. *Journal of Marketing*, 50 (October), 135-145.
- Chen, Y. C., King, B., & Lee, H. W. (2018). *Experiencing the destination brand: Behavioral intentions of arts festival tourists*. *Journal of Destination Marketing & Management*, 10, 61-67.
- Lin. (2019). *Operations management and strategic positioning of the NCPA*. *International Journal of Arts Management.*, 21(3), 73–81. <https://doi.org/info:doi/>

- Plumeyer, A., Kottemann, P., Böger, D., & Decker, R. (2019). Measuring brand image: a systematic review, practical guidance, and future research directions. *Review of Managerial Science*, 13(2), 227-265.
- Stafford, M. R., & Tripp, C. (2001). Age, income, and gender: Demographic determinants of community theater patronage. *Journal of Nonprofit & Public Sector Marketing*, 8(2), 29-43.
- Tepper, S. J., & Ivey, B. (2012). In and Out of the Dark: A Theory about Audience Behavior from Sophocles to Spoken Word. In *Engaging Art*, Routledge. p111-132.
- Kotler, P. (1967). *Marketing Management: Analysis, Planning and Control*. Prentice Hall: Upper Saddle River, NJ.



The Investigation of the Pre-service Social Studies Teachers Perceptions of Self-Efficacy on the Digital Literacy Skills*

Sercan Kocaer¹, Mehmet Aydın²

¹ Ministry of National Education, Ağrı, Turkey. sercankocaer.meb@gmail.com ORCID: 0000-0003-0561-9091

² Ondokuz Mayıs University, Samsun, Turkey. mehmetayd@omu.edu.tr ORCID: 0000-0002-4552-1913

Correspondence: Sercan KOCAER, Ministry of National Education, Ağrı, 04000, Turkey. Tel: 0535 644 25 87 -
E-mail: sercankocaer.meb@gmail.com

Abstract

The rapid changes in information and communication technologies have an impact on all areas of human life. Especially in this process of digital transformation, it is important for people to have the skills of accessing, analyzing and evaluating information. Digital literacy, which we can mention as a essential skill to be able to adapt to digital life, is now required in human life. Undoubtedly, individuals can gain digital literacy skills through education. At this point, the social studies course, which directly contributes to the socialization of individuals and is an effective course in creating the citizen profile of the society, is also affective in offering the digital literacy skills. This study aimed to investigate the digital literacy self-efficacy skills of the pre-service social studies teachers.

Keywords: Digital literacy, Technology, Social Studies, Self-efficacy

1. Introduction

The globalizing world order offers unlimited change and innovation to human life. Technology, which is the most important part of this order, gradually gets more influential in all areas of our lives and creates a new order that can mentioned as the digital world. We are experiencing one of the most dynamic forms of change and transformation in human life. Digital technologies now shape the attitudes, behaviors and values of individuals throughout their lives. Technology and digital tools have many negative effects as well as positive contributions to human life. At this point, it is important for individuals to be able to access data and information in real and virtual environments correctly for the desired purpose and to use the right methods while accessing them. Many leading countries in science and technology in the world give weight to the digital literacy education and skills at an early age in order to avoid the negative effects of technology and the digital tools. Within the scope of the

* This study is derived from a part of the study named "Investigation of social knowledge teachers self-competence perceptions for digital literacy skills" prepared at Ondokuz Mayıs University, Department of Social Studies Education. The study was carried out by Sercan KOCAER. Advisors: Dr. Mehmet AYDIN.

21st century skills, digital literacy is recognized as an important skill that individuals should acquire. Thus, schools play an important role in ensuring a conscious use of technology and the digital tools (Yılmaz, 2019; Aktaş, Tokmak and Kara, 2021).

Equipping individuals with digital literacy knowledge, skills and competencies covers a broad perspective in relation to the personal and social life. Especially the social studies course, which is the pioneer of the citizenship education, is important in preparing individuals for social life and gaining digital competencies. Therefore, the duties and responsibilities of the future social studies teachers grow even more important day by day as they fulfill an important task by being the transmitters of the social studies course. On the other hand, in order to adapt to the changing conditions of the world in the age of information and communication, it is necessary to have many skills such as creative thinking, communicating by using different tools, learning ever-changing technologies, and being analytical in the face of the mass information. Undoubtedly, education is the main factor in the acquisition of these skills. In the education process, especially the social studies course aims to raise efficient citizens according to the requirements of the age. In the age of digital transformation, the social studies teachers should also have some skills as well as digital literacy and the pre-service social studies teachers should receive an education that offers these skills (Karasu Avcı, Faiz and Receptoğlu, 2021; Tokmak, Yılmaz and Şeker, 2022; Öztürk, Yaman and Kara, 2020).

With the rapid changes in the information and communication technologies and the increasing importance of lifelong learning and digital literacy has become one of the issues that have gained momentum as an essential skill. Especially the children and the youngsters, who will be the interactive participants of the information society in the future, need to be trained in digital literacy and gain basic skills. At this point, when they are involved in professional life, the pre-service social studies teachers, who are the pioneers of citizenship education, will assume an important role in gaining digital literacy skills to individuals. In addition to that, the social studies curriculum has been updated and digital literacy skills have been included among the essential skills for individuals. In this context, it is important to test the digital literacy status of the pre-service social studies teachers, who will be the implementers of this curriculum. However, when the related literature is reviewed, it is observed that, although there are studies on the literacy skills of the pre-service teachers (Kocadağ, 2012; Sakallı, 2015; Aslan, 2016; Bakır, 2016; Som-Vural and Kurt, 2018; Yılmaz, 2019), the studies that explore the digital literacy skills of the pre-service social studies teachers are limited in quantity (Ata, 2015; Acun, 2015; Dere and Yavuzay, 2019; Ezer and Aksüt, 2021; Karasu Avcı, Faiz and Receptoğlu, 2021; İlhan, Tokmak and Aktaş, 2021; Öztürk, 2015). Therefore, this study aimed to explore the pre-service social studies teachers' perceptions of self-efficacy on the digital literacy skills. In line with this aim, answers to the following sub-questions were sought:

1. What is the level of the pre-service social studies teachers' perceptions of self-efficacy on the digital literacy skills?
2. Do the pre-service social studies teachers' perceptions of self-efficacy on the digital literacy skills differ in terms of the gender variable?
3. Do the pre-service social studies teachers' perceptions of self-efficacy on the digital literacy skills differ in terms of the age variable?
4. Do the pre-service social studies teachers' perceptions of self-efficacy on the digital literacy skills differ in terms of the variable of their mothers' educational status?
5. Do the pre-service social studies teachers' perceptions of self-efficacy on the digital literacy skills differ in terms of the variable of their fathers' educational status?
6. Do the pre-service social studies teachers' perceptions of self-efficacy on the digital literacy skills differ in terms of whether they use social networks or not?
7. Do the pre-service social studies teachers' perceptions of self-efficacy on the digital literacy skills differ in terms of the variable of having a personal computer?

2. Method

2.1 Research Design

This study was conducted with the quantitative research method. Quantitative research is used in exploring the relationship between variables and in a series of hypothesized related structures (Mandacı Şahin, 2014). This research was conducted using a descriptive survey model. The survey model is known as a research approach that aims to design a past or current situation as it is. Descriptive survey is defined as "a survey model that aims to describe an existing situation as it is" (Karasar 2014). In the survey model, it is ensured that the attitudes, the tendencies and the opinions in the universe are quantitatively determined through the studies conducted on a sample group selected from a universe (Bursal, 2014).

2.2 Participants

The sample group of the study consisted of 197 volunteer pre-service social studies teachers, 145 of whom were female and 52 of whom were male. They were studying at Sinop University and Gazi University faculties of education in the 2019-2020 academic year. The sample of the study was determined by using convenience sampling, which is one of the purposive sampling methods. Purposive sampling method is a model that is included in the qualitative research tradition. In convenience sampling, which is one of the purposive sampling methods, the researcher determines the sample "by choosing a situation that is not distant and easy to access" (Yıldırım and Şimşek, 2011). In convenience sampling, the researcher can use digital media such as internet, e-mail and telephone. During the data collection period, universities were offering distance education due to the Covid-19 pandemic. Therefore, data were collected online, in online environments.

2.3 Data Collection Tools and Data Analysis

The Digital Literacy Self-Efficacy scale of the Pre-service Teachers prepared by Ocak and Karakuş (2018) and the personal information form developed by the researchers were used as data collection tools.

The Digital Literacy Self-Efficacy scale consists of 35 items and four sub-factors. The factors in the scale are, production, the ability to use resources, the ability to use applications and support. There are no negative items in the scale. The scale items are rated on a 5-point Likert scale as "always", "frequently", "occasionally", "rarely", and "never". In the evaluation of the scale items, codes 1, 2, 3, 4, 5 were used as "never" (1), "rarely" (2), "occasionally" (3), "frequently" (4) and "always" (5). According to the reliability analysis of the scale, the Cronbach Alpha values were .90 for the production factor, .88 for the ability to use resources factor, .86 for the ability to use applications factor, .81 for the support factor and .96 in total. According to the results of the reliability analysis conducted in the research, the Cronbach Alpha values were .83 for the production factor, .84 for the ability to use resources factor, .80 for the ability to use applications factor, .84 for the support factor and .86 in total. The Cronbach Alpha data indicate that, the reliability coefficient of the scale is high.

In the study, the personal information form constitutes the part in which various variables are investigated in analyzing the self-efficacy of the pre-service social studies teachers in the digital literacy skills. Information on the gender, age, parental educational status, social network usage and owning a personal computer of the pre-service teachers were collected through the personal information form.

The following ranges were taken as the basis for the calculation of the arithmetic averages of the answers given by the pre-service social studies teachers to the questions in the digital literacy self-efficacy scale: Never ($1.00 < x \leq 1.80$) Rarely ($1.81 < x \leq 2.60$) Occasionally ($2.61 < x \leq 3.40$) Frequently ($3.41 < x \leq 4.20$) Always ($4.21 < x \leq 5.00$). The Independent Samples t-Test was used to reveal the differentiation of the participants' scores from the "digital literacy self-efficacy of the pre-service teachers" scale according to their gender, age, use of social

network and owning a personal computer. The differentiation according to the parental educational status was revealed by using One-Way ANOVA. The statistical analysis of the data was analyzed by using IBM SPSS 24.0 program and the significance level was assumed as [$p < .05$].

3. Results

This section of the study covers the digital literacy self-efficacy levels of the pre-service social studies teachers and the findings obtained through their responses to the personal information form. The parametric test was used in the study since the sample size was over 30. As the data was normally distributed, the parametric tests were performed as t-test and Oneway- Anova (Genç and Soysal).

3.1. The Findings Related to the First Sub-Problem

This subtitle covers the findings related to the first sub-problem of the study, the question of, "*What is the level of the digital literacy self-efficacy of the pre-service social studies teachers?*". The findings related to the first sub-problem of the study are presented in Table 1.

Table 1: The findings related to the question, "*What is the level of the digital literacy self-efficacy of the pre-service social studies teachers?*"

Item No	Item	n	\bar{x}	Level
1	I can prepare assessment studies suitable for the student level in the digital environment.	197	3.29	Occasionally (Medium)
2	I can prepare and offer practices that will help students to reinforce the subject in the digital environment.	197	3.41	Frequently (High)
3	I can prepare digital materials for students with different learning styles.	197	3.32	Occasionally (Medium)
4	I can assess student assignments in digital environment.	197	3.72	Frequently (High)
5	I can use digital resources so that the students can share information faster.	197	3.83	Frequently (High)
6	I can prepare exams by using digital resources (such as kahoot).	197	3.33	Occasionally (Mean)
7	I can prepare videos for educational purposes.	197	3.69	Frequently (High)
8	I can use digital resources to enrich the learning environment.	197	3.93	Frequently (High)
9	I can use digital books during the class (e-book, z-book etc.)	197	3.78	Frequently (High)
10	I can motivate students by uploading an activity I offered in the classroom to sharing sites.	197	3.56	Frequently (High)
11	I can store my lecture digitally so that the students can listen later.	197	3.80	Frequently (High)
12	I can use a smart board.	197	4.34	Always (Very High)
13	I can install educational applications on my mobile phone.	197	4.27	Always (Very High)
14	I can use a tablet.	197	4.39	Always (Very High)
15	I can easily access resources in the digital environment.	197	4.28	Always (Very High)
16	I can set up a group through which I can communicate with the students or their parents (for example, a whatsapp group).	197	4.46	Always (Very High)
17	I can use websites that support education.	197	4.38	Always (Very High)
18	I can use projector in the class.	197	4.31	Always (Very High)
19	I can use digital resources during the class to increase the student motivation.	197	4.25	Always (Very High)
20	I can access various content via cell phones, etc.	197	4.30	Always (Very High)
21	I can find the material I need according to the course content in digital environments	197	4.02	Frequently (High)

22	I can use the compression formats such as Jpeg/Winzip.	197	2.92	Occasionally (Medium)
23	I can convert documents to different formats (for example, from word to pdf)	197	3.47	Frequently (High)
24	I can use Social Bookmarking (The purpose of Social Bookmarking is to store and archive liked content on social media).	197	3.40	Occasionally (Medium)
25	I can upload a video I prepared to the digital environment (TeacherTube, Videoegg, Selfcast)	197	3.40	Occasionally (Medium)
26	I can offer web-based interactive games in the class.	197	3.36	Occasionally (Medium)
27	I can use podcasts during class. (Podcasts usually consist of original audio or video recordings as well as being the recorded broadcasts of a TV or radio program, a lecture, a performance or other event.)	197	3.32	Occasionally (Medium)
28	I can prepare a blog for educational purposes.	197	3.35	Occasionally (Medium)
29	I can use digital maps (Google Maps, Community Walk, ZeeMaps, Wayfaring, MapBuzz).	197	3.85	Frequently (High)
30	I can prepare Poster/Postcard/Collage in digital environment.	197	3.67	Frequently (High)
31	I can offer my students educational games in digital environment.	197	3.81	Frequently (High)
32	I can use digital resources so that the students can keep learning at home.	197	3.86	Frequently (High)
33	I can reach all the students by way of video conference.	197	3.51	Frequently (High)
34	I can help my students to prepare a digital portfolio file so that they can store their work in the digital environment.	197	3.46	Frequently (High)
35	I can inform students about the use of digital resources.	197	3.91	Frequently (High)
Grand Average		197	3.77	Frequently High

As observed from the results of the analysis in Table 1, the item with the lowest mean score ($x = 2.92$) in the digital literacy self-efficacy scale of the pre-service teachers was, "I can use compression formats such as Jpeg/Winzip." (Item 22). The item with the highest mean digital literacy self-efficacy scale score ($x = 4.46$) was, "I can set up a group through which I can communicate with the students or their parents (for example, a whatsapp group)." (Item 16). The digital literacy self-efficacy levels of the pre-service teachers are very high (Always) in 9 items ($4.21 < x \leq 5.00$), high (Frequently) in 17 items ($3.41 < x \leq 4.20$), and medium (Occasionally) in 9 items ($2.61 < x \leq 3.40$). In line with these findings, it is possible to state that, the general digital literacy self-efficacy mean scores of the pre-service social studies teachers are high (Frequently) ($3.41 < x \leq 4.20$), and thus, the digital literacy self-efficacy levels of the pre-service social studies teachers are high.

3.2. The Findings Related to the Second Sub-Problem

This subtitle covers the findings related to the second sub-problem of the study, the question of, "Do the pre-service social studies teachers' perceptions of self-efficacy on the digital literacy skills differ in terms of the gender variable?". The results of the analysis of the data obtained are presented in Table 2.

Table 2: The Independent t-test results of the pre-service social studies teachers' self-efficacy perceptions on the digital literacy skills according to the gender variable

Factors	Gender	n	\bar{x}	Ss	Sd	t	p
Production	Female	145	39.74	8.59	195	.226	.821
	Male	52	40.06	8.49			
The ability to use resource	Female	145	43.14	6.30	195	.505	.614
	Male	52	42.62	6.67			
The ability to use application	Female	145	30.10	7.73	195	1.950	.053
	Male	52	32.52	7.46			
Support	Female	145	18.52	4.60	195	.161	.872
	Male	52	18.63	4.26			
Sum	Female	145	130.12	23.27	195	.609	.543
	Male	52	133.32	24.55			

According to the analysis of Table 2, there is no statistical difference between the digital literacy self-efficacy of the pre-service social studies teachers and the gender variable in terms of the total score in the sub-factors of Production ($t(195)= 226$; $p>.05$), the Ability to Use Resources ($t(195)= 505$; $p>.05$), the Ability to Use Applications ($t(195)= 1.950$; $p>.05$), Support ($t(195)= 161$; $p>.05$) and in the overall scale ($t(195)= 609$; $p>.05$). Thus, it is possible to state that, there is not any negative or positive relationship between the participants' digital literacy self-efficacy and the gender variable. In fact, the abilities to produce, to use resources, to use applications and to provide support do not reveal a significant difference according to gender.

3.3. The Findings Related to the Third Sub-Problem

This subtitle covers the findings related to the third sub-problem of the study, the question of, "Do the pre-service social studies teachers' perceptions of self-efficacy on the digital literacy skills differ in terms of the age variable?". Under this subtitle, whether the pre-service social studies teachers' perceptions of self-efficacy on the digital literacy skills reveal a significant difference in terms of the age variable was investigated. The results of the analysis of the data obtained through the research question are presented in Table 3.

Table 3: The One-way anova results of the pre-service social studies teachers' perceptions of self-efficacy on the digital literacy skills according to the age variable

Factors	Age	n	\bar{X}	Ss	Sd	t	p
Production	20 years old or younger	74	38.78	8.98	195	1.332	.184
	21 years old or older	123	40.46	8.25			
The Ability to use resources	20 years old or younger	74	42.43	7.01	195	.967	.335
	21 years old or older	123	43.34	5.99			
The Ability to use applications	20 years old or younger	74	30.32	7.87	195	.587	.558
	21 years old or older	123	30.99	7.65			
Support	20 years old or younger	74	18.58	4.68	195	.079	.937
	21 years old or older	123	18.53	4.41			
Sum	20 years old or younger	74	130.12	25.19	195	.921	.358
	21 years old or older	123	133.32	22.57			

According to the analysis of Table 3, there is no statistical difference between the digital literacy self-efficacy of the pre-service social studies teachers and the age variable in terms of the sub-factors of Production [$t(195)= 1.332$. $p>.05$], the Ability to Use Resources [$t(195)= 967$. $p>.05$], the Ability to Use Applications [$t(195)= 587$ $p>.05$], Support [$t(195)= 079$. $p>.05$] and in the overall scale [$t(195)= 921$ $p>.05$]. Based on these findings, it is possible to mention that, there is not any negative or positive relationship between the participants' ability to produce, to use resources, to use applications and to provide support and their being 20 years old or younger and 20 years old or older.

3.4. The Findings Related to the Fourth Sub-Problem

This subtitle covers the findings related to the fourth sub-problem of the study, the question of, "Do the pre-service social studies teachers' perceptions of self-efficacy on the digital literacy skills differ in terms of the variable of their mothers' educational status?". The results of the analysis of the data obtained through the research question are presented in Table 4.

Table 4: The One-way anova results of the pre-service social studies teachers' self-efficacy perceptions on the digital literacy skills according to the variable of their mothers' educational status

Factor	Educational Status of their Mothers	n	\bar{X}	Ss	VK	KT	sd	KO	F	p
--------	-------------------------------------	---	-----------	----	----	----	----	----	---	---

Production	1)Not Literate	15	37.00	5.36	Between Groups	667.739	6	111.290		
	2) Primary school	103	39.06	8.84	Within Groups	13646.393	190	71.823	1.549	.164
	3) Secondary School	35	42.09	8.49	Total	14314.132	196			
	4) High school	30	39.20	8.38						
	5)Two-year degree	7	45.00	9.78						
	6)Undergraduate degree	5	42.40	3.36						
	7)Master's degree	2	46.00	12.73						
	8)Total	197	39.83	8.55						
The Ability to Use Resources	1) Not Literate	15	42.27	4.76	Between Groups	248.957	6	41.493		
	2) Primary school	103	42.95	6.07	Within Groups	7751.043	190	40.795	1.017	.415
	3) Secondary School	35	44.14	7.48	Total	8000.000	196			
	4) High school	30	41.77	6.01						
	5)Two-year degree	7	47.00	3.92						
	6)Undergraduate degree	5	41.40	3.13						
	7)Master's degree	2	39.50	14.85						
	8) Total	197	43.00	6.39						
The Ability to Use Applications	1) Not Literate	15	27.80	6.85	Between Groups	730.736	6	121.789		
	2) Primary school	103	29.64	7.90	Within Groups	10947.061	190	57.616	2.114	.054
	3) Secondary School	35	33.77	7.69	Total	11677.797	196			
	4) High school	30	30.93	6.68						
	5)Two-year degree	7	33.43	7.28						
	6)Undergraduate degree	5	34.40	4.88						
	7)Master's degree	2	35.00	14.14						
	8) Total	197	30.74	7.72						
Support	1)Not literate	15	17.27	3.86	Between Groups	225.368	6	37.561		
	2) Primary school	103	18.33	4.66	Within Groups	3747.424	190	19.723	1.904	.082
	3) Secondary School	35	19.86	4.11	Total	3972.792	196			
	4) High school	30	17.50	4.54						
	5)Two-year degree	7	21.71	4.68						
	6)Undergraduate degree	5	18.00	1.41						
	7)Master's degree	2	22.50	3.54						
	8) Total	197	18.55	4.50						
Total	1) Not Literate	15	124.33	16.23	Between Groups	5597.877	6	932.980		
	2) Primary school	103	129.98	23.71	Within Groups	103328.437	190	543.834	1.904	.082
	3) Secondary School	35	139.86	25.05	Total	108926.315	196			
	4) High school	30	129.40	23.06						

5)Two-year degree	7	147.14	23.18
6)Undergraduate degree	5	136.20	8.17
7)Master's degree	2	143.00	45.25
8) Total	197	132.12	23.57

According to the analysis of Table 4, there is not a statistical difference between the digital literacy self-efficacy of the pre-service social studies teachers and their mothers' educational status in the sub-factors of Production [F(1-190)= 1.549. p>.05], the Ability to Use Resources [F(6-190)= 1.017. p>.05], the Ability to Use Application [F(1- 190)= 2.114. p>.05], Support [F(6-190)= 1.904. p>.05] and the overall scale [F(6-190)= 1.716p>.05] in terms of the total score. Therefore, it is possible to conclude that, there is not any significant negative or positive difference between the participants' digital literacy self-efficacy and their mothers' educational status.

3.5. The Findings Related to the Fifth Sub-Problem

This subtitle covers the findings related to the fifth sub-problem of the study, the question of, "Do the pre-service social studies teachers' perceptions of self-efficacy on the digital literacy skills differ in terms of the variable of their fathers' educational status?". The results of the analysis of the data obtained through the research question are presented in Table 5.

Table 5: The One-way anova results of the pre-service social studies teachers' self-efficacy perceptions on the digital literacy skills according to the variable of their fathers' educational status

Factor	Educational Status of their Fathers	n	\bar{x}	Ss	VK	KT	sd	KO	F	p
Production	1)Not Literate	3	36.33	8.96	Between Groups	971.567	6	161.928		
	2)Primary school	70	38.03	8.58	Within Groups	13342.565	190	70.224	2.306	.036*
	3)Secondary School	43	41.23	7.17	Total	14314.132	196			
	4)High school	48	38.69	9.10	Cause of the Difference (Scheffe)					
	5)Two-year degree	10	42.90	9.97	7>2					
	6)Undergraduate degree	17	43.47	6.74						
	7)Master's degree	6	46.17	9.26						
	8)Total	197	39.83	8.55						
The Ability to Use Resources	1)Not Literate	3	45.00	6.93	Between Groups	431.346	6	71.891		
	2)Primary school	70	42.59	5.99	Within Groups	7568.654	190	39.835	1.805	.100
	3)Secondary School	43	43.26	6.39	Total	8000.000	196			
	4)High school	48	41.33	7.37						
	5)Two-year degree	10	46.80	3.08						
	6)Undergraduate degree	17	45.35	4.27						
	7)Master's degree	6	45.33	8.24						
	8)Total	197	43.00	6.389						
The Ability to Use	1)Not Literate	3	29.67	2.31	Between Groups	711.831	6	118.638		
	2)Primary school	70	28.87	8.04	Within Groups	10965.966	190	57.716	2.056	.060
	3)Secondary School	43	32.12	7.82	Total	11677.797	196			

	4)High school	48	30.27	7.46					
	5)Two-year degree	10	32.50	5.99					
	6)Undergraduate degree	17	33.24	6.30					
	7)Master's degree	6	37.00	8.45					
	8)Total	197	30.74	7.72					
	1)Not Literate	3	20.00	4.33	Between Groups	224.769	6	37.462	
	2)Primary school	70	17.99	4.65	Within Groups	3748.023	190	19.726	
	3)Secondary School I	43	19.26	4.25	Total	3972.792	196		1.899 .083
	4)High school	48	17.75	4.39					
	5)Two-year degree	10	20.60	3.69					
	6)Undergraduate degree	17	18.41	4.96					
	7)Master's degree	6	22.67	2.58					
	8)Total	197	18.55	4.50					
Support	1)Not Literate	3	131.00	22.52	Between Groups	7419.124	6	1236.521	2.315 .035*
	2)Primary school	70	127.47	22.99	Within Groups	101507.191	190	534.248	
	3)Secondary School	43	135.86	22.59	Total	108926.315	196		
	4)High school	48	128.04	25.33	Cause of the Difference (Scheffe)				
	5)Two-year degree	10	142.80	20.14	7>4-6				
	6)Undergraduate degree	17	140.47	17.01					
	7)Master's degree	6	151.17	26.84					
Total	8)Total	197	132.12	23.57					

According to the analysis of Table 5, there is a statistical difference between the digital literacy self-efficacy of the pre-service social studies teachers and the variable of their fathers' educational status, in terms of the Production sub-factor [$F(6-190)= 2.306$ $p<.05$] and the total score [$F(6-190)= 2.315$ $p<.05$]. It was also concluded that, there is no statistically significant difference related to the sub-factors of the Ability to Use Resources [$F(6-190)= 1.805$ $p>.05$], the Ability to Use Applications [$F(6-190)= 2.056$ $p>.05$] and Support [$F(6-190)= 1.899$ $p>.05$]. Thus, it was concluded that, the pre-service social studies teachers whose fathers had a master's degree had higher total scores than the ones whose fathers were primary school or high school graduates or had an undergraduate degree. Therefore, it is possible to conclude that, the higher the level of their father's education, the higher the level of their digital literacy is.

3.6. The Findings Related to the Sixth Sub-Problem

This subtitle covers the findings related to the fifth sub-problem of the study, the question of, "Do the pre-service social studies teachers' perceptions of self-efficacy on the digital literacy skills differ in terms of whether they use social networks or not?". The results of the analysis of the data obtained through the research question are presented in Table 6.

Table 6: The Independent t-test results of the pre-service social studies teachers' self-efficacy perceptions on the digital literacy skills according to the variable of whether they use social networks or not

Factors	The Use of Social Networks						
	n	\bar{x}	Ss	sd	t	p	
Production	Yes	191	40.10	8.52	195	2.607	.010*
	No	6	31.00	3.16			
Ability to use resources	Yes	191	43.23	6.28	195	2.840	.005*

	No	6	35.83	6.08			
Ability to use applications	Yes	191	30.97	7.70	195	2.417	.017*
	No	6	23.33	3.88			
Support	Yes	191	18.64	23.34	195	1.599	.112
	No	6	15.67	14.86			
Total	Yes	191	132.94	4.50	195	2.822	.005*
	No	6	105.83	3.72			

*p<.05

According to the analysis of Table 6, it is concluded that, there is a difference between the digital literacy self-efficacy of the pre-service social studies teachers and their use of social networks, in terms of the sub-factors of Production ($t(195)= 2.607$; $p<.05$), the Ability to Use Resources ($t(195)= 2.840$; $p<.05$), the Ability to Use Applications ($t(195)= 2.417$; $p<.05$) and the total score ($t(195)= 2.822$; $p<.05$), in favor of the pre-service social studies teachers who answered yes to the question about their use of social networks. In the sub-factor of Support ($t(195)= 2.417$; $p>.05$), there is no statistically significant difference between the digital literacy self-efficacy of the pre-service social studies teachers and whether they use the social networks. In this context, it is observed that, the pre-service teachers who use social networks tend to consider their digital literacy self-efficacy to be more efficient than the ones who do not use social networks, in terms of being able to produce, use resources and applications.

3.7. The Findings Related to the Seventh Sub-Problem

The last subtitle of the research covers the findings related to the question of, "*Do the pre-service social studies teachers' perceptions of self-efficacy on the digital literacy skills differ in terms of the variable of having a personal computer?*". The results of the analysis of the data obtained through the research question are presented in Table 7.

Table 7: The Independent t-test results of the pre-service social studies teachers' self-efficacy perceptions on the digital literacy skills according to the variable of having a personal computer

Factors	Having a Personal Computer	N	\bar{x}	Ss	sd	t	p
Production	Yes	111	40.97	7.95	195	2.157	.032*
	No	86	38.35	9.09			
Ability to use resources	Yes	111	43.94	5.79	195	2.366	.019*
	No	86	41.79	6.93			
Ability to use applications	Yes	111	31.85	7.66	195	2.309	.022*
	No	86	29.31	7.60			
Support	Yes	111	19.32	4.46	195	2.762	.006*
	No	86	17.56	4.38			
Total	Yes	111	136.07	22.35	195	2.719	.007*
	No	86	127.01	24.26			

According to the analysis of Table 7, it can be concluded that, there is a significant difference between the pre-service social studies teachers' digital literacy self-efficacy and their having a personal computer, in terms of the sub-factors of Production ($t(195)= 2.157$; $p<.05$), the Ability to Use Resources ($t(195)= 2.366$; $p<.05$), the Ability to Use Applications ($t(195)= 2.309$; $p<.05$), Support ($t(195)= 2.762$; $p<.05$) and the total score ($t(195)= 2.719$; $p<.05$). Based on the findings, it is possible to state that, the pre-service social studies teachers who have personal computers have higher levels of digital literacy.

4. Discussion

As a result of the rapid changes in science and technology, the skills that individuals need to acquire have also changed and gain importance (Yontar, 2019; Kara, 2022). Digital technologies have a large share in this process of change (Sezgin and Karabacak, 2019). This change, which is effective in the field of education, has increased

the importance of digital literacy skills in the teaching process. As a matter of fact, the Social Studies course, which is one of the most effective courses in providing digital literacy skills to students, aims to provide digital literacy skills among basic skills. Therefore, this study aimed to conduct research on the digital literacy self-efficacy skills of the pre-service social studies teachers. As a result of the research, it was concluded that, the digital literacy self-efficacy skills of the pre-service social studies teachers were generally at a high level. Additionally, the digital literacy self-efficacy skills of the pre-service social studies teachers were analyzed in terms of gender, age, parental educational status, social network usage and personal computer ownership variables. The findings were compared with the findings of the other studies in the literature and several suggestions were presented.

When the digital literacy self-efficacy of the pre-service social studies teachers was analyzed in terms of gender variable, it was concluded that, there was no statistically significant difference related to the sub-factors of Production, the Ability to Use Resources, the Ability to Use Applications, Support and the overall scale. In the study conducted by Ocak and Karakuş (2019), it was concluded that, while the digital literacy self-efficacy of the pre-service teachers did not differ in terms of gender variable in the overall scale and the sub-factors, it was statistically different only in terms of the sub-factor of the ability to use applications. In the research conducted by Ata (2015) and Özerbaş and Kuralbayeva (2018), it was concluded that, the digital literacy levels of the pre-service teachers in different branches, including the pre-service social studies teachers, differed in favor of the male pre-service teachers compared to the females. According to the findings of the research conducted by Yontar (2019), it was concluded that, the digital literacy levels of the pre-service classroom and social studies teachers differed in favor of the male pre-service teachers when analyzed in terms of gender variable. In the research conducted by Acun (2015) and Polat (2018), it was concluded that, the digital literacy levels of the pre-service social studies teachers do not differ in terms of gender variable. In the study conducted by Yaman (2019), it was found that the digital literacy levels of the pre-service social studies teachers did not differ in terms of gender variable. According to the findings of the study conducted by Özoğlu (2019), the digital literacy levels of pre-service teachers differ in favor of the male pre-service teachers in terms of gender variable. In the findings of the study conducted by Boyacı (2019), the digital literacy levels of the pre-service teachers differ in favor of the female pre-service teachers. According to the findings of the study conducted by Arslan (2019), the digital literacy levels of teachers in the study, which also included social studies teachers, did not differ in terms of gender variable. When compared, it is observed that, the findings of the study do not overlap with the findings of other studies in the literature, which may be due to the different sample groups in the studies. The opportunities offered by the digital world to humanity are developing rapidly and it is possible to use these opportunities in every field and this might be why the digital literacy self-efficacy of the pre-service social studies teachers does not differ according to the gender variable.

When the digital literacy self-efficacy of the pre-service social studies teachers was analyzed in terms of the age variable, it was concluded that, there was no statistically significant difference in the overall scale and the sub-factors. In the study conducted by Yontar (2019), the digital literacy levels of the pre-service classroom and social studies teachers did not reveal a significant difference in terms of the age variable. In the research conducted by Yaman (2019), it was concluded that, the ages of the pre-service social studies teachers did not affect their digital literacy levels. In the research conducted by Boyacı (2019), it was concluded that, the digital literacy levels of the female pre-service teachers between the ages of 21-27 were higher than the digital literacy levels of the ones who were between the ages of 18-20. It was observed that, the findings of the research generally overlap with the other findings in the literature. Therefore, it can be concluded that, the ages of the pre-service social studies teachers do not affect their digital literacy self-efficacy, which may be because of the fact that the ages of the pre-service teachers are close to each other and that they are the part of a generation which is good at using digital tools.

When the digital literacy self-efficacy of the pre-service social studies teachers was analyzed in terms of the variable of their mother's educational status, it was concluded that, statistically, the mother's educational status did not affect the digital literacy self-efficacy. The findings of the research conducted by Ocak and Karakuş (2018), in which the digital literacy skills of the pre-service teachers were investigated, indicated that, the educational status of their mothers did not affect the digital literacy skills of the pre-service teachers. In the

research conducted by Yaman (2019), it was concluded that, the digital literacy levels of the pre-service teachers whose mothers were secondary and high school graduates were higher than those whose mothers were primary school graduates. According to the findings of the study conducted by Polat (2018), the digital literacy levels of the pre-service social studies teachers differed in terms of the educational status of their mothers as the digital literacy levels of the pre-service teachers whose mothers had a high school or a higher degree were higher compared to the ones whose mothers were illiterate and primary school graduates. According to the findings of the research, it is possible to state that, the educational status of their mothers does not affect the digital literacy self-efficacy of the pre-service social studies teachers. Therefore, it can be concluded that, the educational status of their mothers does not affect the digital literacy self-efficacy of the pre-service social studies teachers.

When the digital literacy self-efficacy of the pre-service social studies teachers is analyzed in terms of the variable of the educational status of their fathers, it was observed that, the higher the father's educational status, the higher the level of the pre-service social studies teachers' digital literacy was. In the study conducted by Ocak and Karakuş (2019), when the digital literacy self-efficacy skills of the pre-service teachers were analyzed in terms of different variables, it was concluded that, the educational status of the father did not affect the digital literacy self-efficacy skills. In the study conducted by Yaman (2019), when the digital literacy levels of the pre-service social studies teachers were analyzed in terms of the variable of the educational status of the father, it was concluded that, the pre-service social studies teachers whose fathers had secondary school and undergraduate degrees had higher levels of digital literacy compared to the ones whose fathers were primary school graduates. According to the findings of the research conducted by Polat (2018), when the digital literacy levels of the pre-service social studies teachers were analyzed in terms of the variable of their father's educational status, it was concluded that, those, whose fathers had a high school or higher degree had a higher level of digital literacy compared to the ones, whose fathers were illiterate. It was observed that, the findings of the research overlapped with the other findings in the literature. In every field of our lives, the higher our level of education gets, the more opportunities we have to gain knowledge and experience in various fields, which also might be the reason why the digital literacy self-efficacy of the pre-service social studies teachers differs according to the variable of their fathers' educational status.

When the digital literacy self-efficacy of the pre-service social studies teachers was analyzed in terms of the variable of the use of social networks, it was concluded that, the pre-service teachers who use social networks had higher levels of digital literacy self-efficacy. In the study conducted by Yaman (2019), it was concluded that, the digital literacy levels of the pre-service social studies teachers who use social networks were higher. In this sense, these findings overlap with the findings of the related research. According to the study conducted by Polat (2018), the pre-service social studies teachers' habits of using of social media accounts did not affect their digital literacy levels. In the study conducted by Çakmak and Aslan (2018), it was discovered that, the digital citizenship behaviors of the pre-service teachers who used social networks were at a higher level compared to the ones who did not use social networks. The findings of this study overlap with the findings of the other studies in the literature. Today, using social networking is a part of the digital world and the areas is used keep expanding. The pre-service social studies teachers require to have certain skills to be able to use the social networks, which increases their interactions with digital environments and may positively affect their digital self-efficacy.

When the digital literacy self-efficacy of the pre-service social studies teachers was analyzed in terms of the variable of having a personal computer, it was concluded that, the pre-service social studies teachers who had a personal computer had higher levels of digital literacy self-efficacy. According to the research conducted by Ocak and Karakuş (2019), the digital literacy levels of the pre-service teachers who had personal computers were at a higher level. In the study conducted by Yaman (2019), it was again concluded that, the digital literacy levels of the pre-service social studies teachers who had personal computers were higher. According to the research conducted by Arslan (2019) and Dere and Yavuzay (2019), the digital literacy levels of the teachers who had personal computers was higher. In the research conducted by Çakmak and Aslan (2018), which investigated the digital citizenship behaviors of the pre-service social studies teachers, it was concluded that, the digital citizenship skills of the pre-service social studies teachers who had personal computers were at a higher level. In general, the findings of the research overlap with the findings of the other studies. Owning a personal

computer enables one to use a digital tool adequately and to learn and benefit from the digital interaction environments. Therefore, having a personal computer positively affects the pre-service social studies teachers' skills and competencies in this area. It is possible to mention that, the pre-service social studies teachers who have a personal computer have a high level of digital literacy self-efficacy. Based on these results, the following suggestions are offered:

- In today's world, it is essential to have digital literacy skills for the individuals who frequently use the internet and digital tools. Thus, the pre-service social studies teachers can be encouraged to use the internet and digital tools more frequently and consciously.
- Many universities and institutions are known to provide trainings on digital literacy. However, digital literacy courses have not been included as compulsory courses in the faculties of education yet. It is especially important for the future generations that, the pre-service social studies teachers, who are the pioneers of citizenship education, are equipped with the skills to understand and interpret the digital world. Therefore, it may be suggested that, digital literacy courses should be included as compulsory courses in the education offered for social studies teachers, both theoretically and in practice.
- Messaging takes the first place in individuals' purposes of using the internet. Messaging is generally performed through sharing on the social media. It may be suggested to plan courses, seminars, training platforms and digital literacy platforms on social media for the pre-service social studies teachers, in order to consciously open them to the digital world through the internet.
- It can be suggested to plan a course content for the pre-service social studies teachers to gain and develop digital competence self-efficacies (digital identity creation, effective digital use, digital network and information security, digital communication and behavior management, digital empathy and relationship management, digital footprint management, digital rights and digital literacy).

References

- Acun, İ. (2015). Bilgisayar destekli öğretim uygulamaları [Computer aided teaching applications]. Ed. Cemil Öztürk, *Sosyal bilgiler öğretimi, demokratik vatandaşlık eğitimi içinde* [In *Social studies education, democratic citizenship education*] (s.344-367). Pegem Akademy.
- Aktaş, V., Tokmak, A. ve Kara, İ. (2021). Sosyal bilgiler ders kitaplarının küresel sorunlar açısından incelenmesi: Fransa ve Türkiye örneği. [Examining Social Studies Textbooks in Terms of Global Problems: The Case of France and Turkey] *Journal of Innovative Research in Teacher Education*, 2(3), 266-289. <https://doi.org/10.29329/jirte.2021.408.6>
- Altun, A. (2005). *Gelişen teknolojiler ve yeni okuryazarlıklar* [Gelişen teknolojiler ve yeni okuryazarlıklar]. Ankara: Anı Publishing.
- Altun, A. (2008). Media literacy in Turkey. *Primary Teacher Educator*, 16, 30-34.
- Aslan, S. (2016). *İlköğretim sosyal bilgiler öğretmen adaylarını dijital vatandaşlık davranışlarını bazı değişkenler açısından incelenmesi* (Fırat, Dicle, Siirt, Adıyaman üniversiteleri örneği). (Yayımlanmamış yüksek lisans tezi). [Investigation of digital citizenship behaviors of primary school social studies teacher candidates in terms of some variables (Fırat, Dicle, Siirt, Adıyaman universities example). Unpublished master's thesis]. T.C. Fırat University Institute Of Education Sciences, Elazığ.
- Ata, B. (2015). Sosyal bilgiler öğretim programı [Social studies curriculum]. Ed. Cemil Öztürk, *Sosyal bilgiler öğretimi, demokratik vatandaşlık eğitimi içinde* [In *Social studies education, democratic citizenship education*] (s.33-47). Pegem Akademy..
- Aytaş, G. & Kaplan, K. (2017). New literacy in the context of media literacy. *Journal of Kirsehir Education Faculty*, 18(2), 291-310.
- Bakır, E. (2016). *Sınıf öğretmenleri adaylarının dijital vatandaşlık seviyelerinin dijital vatandaşlık alt boyutlarına göre incelenmesi*. (Yayımlanmamış yüksek lisans tezi). [Examination of digital citizenship levels of primary school teacher candidates according to digital citizenship sub-dimensions. Unpublished master's thesis]. Karadeniz Technical University Institute of Educational Sciences, Trabzon.
- Bursal, U. (2014). Nicel yöntemler [Quantitative methods]. Demir, S.B. (Ed). *Nitel, nicel ve karma yöntem yaklaşımları araştırma deseni* içinde [In *Qualitative, quantitative and mixed method approaches research design*] (s. 155-182). Ankara: Eğiten Kitap Publishing House.

- Çakmak, Z. & Aslan, S. (2018). Examination of social studies teacher candidates' digital citizenship behaviors in terms of some variables. *Adıyaman University Journal of Educational Sciences*, 8(1), 72-99. DOI: 10.17984/adyuebd.296203
- Dere, İ. & Yavuzay, M. (2019). Examination of prospective social studies teachers through digital citizenship indicators, *MANAS Journal of Social Studies*, 8(3), 2400-2414. DOI: 10.33206/mjss.537592
- Ezer, F. & Aksüt, S. (2021). determining the perceptions of social studies teacher candidates regarding the digital citizenship concept via metaphors. *Adıyaman University Journal of Social Sciences Institute*, (38), 104-143. DOI: 10.14520/adyusbd.785021
- Gül, G. (2007). The Role of family participation in the literacy process. *Ankara University Faculty of Educational Sciences Journal of Special Education*, 8(01), 17-32. DOI: 10.1501/Ozlegt_0000000105
- İlhan, G. O. , Tokmak, A. & Aktaş, V. (2021). Sosyal Bilgiler Öğretmen Adaylarının Sanal Müze Deneyimleri [Virtual Museum Experiences of Social Studies TeacherCandidates]. *Journal of International Museum Education*, 3(1), 74-93 . DOI: 10.51637/jimuseumed.958918
- Kara, İ. (2022). *Fransa'daki ortaokullarda vatandaşlık eğitiminin incelenmesi* [The study of the citizenship education in secondary schools in France] Unpublished Doctoral Thesis. Marmara University, Institute of Education, İstanbul
- Karakuş, G. & Ocak, G. (2019). An investigation of digital literacy self-efficacy skills of pre-service teachers in terms of different variables. *Afyon Kocatepe University Journal of Social Sciences*, 21(1), 129-147. DOI: 10.32709/akusosbil.466549
- Karasar, N. (2012). *Scientific research methods*. Ankara: Nobel Publishing.
- Kurudayıoğlu, M. & Tüzel, S. (2010). Types of 21st century literacy, changing text perception and Turkish education. *Turkology Studies*, 28, 0-298.
- Kocadağ, T. (2012). *Öğretmen adaylarının dijital vatandaşlık düzeylerinin belirlenmesi*. (Yayımlanmamış yüksek lisans tezi). [Determining the digital citizenship levels of teacher candidates. Unpublished master's thesis]. Karadeniz Technical University Institute of Educational Sciences, Trabzon.
- Kozan, M. (2018). *Bilgisayar ve öğretim teknolojileri eğitimi bölümü öğretmen adaylarının dijital okuryazarlık düzeyleri ve siber zorbalığa ilişkin duyarlılıklarının incelenmesi*. (Yayımlanmamış yüksek lisans tezi). [Investigation of Digital Literacy Levels and Sensitivity to Cyberbullying of Computer and Instructional Technologies Education Department Teacher Candidates. Unpublished master's thesis]. Fırat University Institute of Educational Sciences, Elâzığ.
- Mandacı Şahin, S. (2014). Kuramların kullanımı [Use of theories]. Demir, S.B. (Ed). *Nitel, nicel ve karma yöntem yaklaşımları araştırma deseni* içinde [In Qualitative, quantitative and mixed method approaches research design] (s.51-76). Ankara: Eğiten Kitap Publishing House.
- Ministry of Education (2022). *Media literacy curriculum*. Ankara: Ministry of Education. [http://mufredat.meb.gov.tr/Dosyalar/2018813172123543-7%C3%96P%202018-83%20Medya%20okur%20yazarl%C4%B1%C4%9F%C4%B1%20\(7%20veya%208.%20s%C4%B1n%C4%B1f\).pdf](http://mufredat.meb.gov.tr/Dosyalar/2018813172123543-7%C3%96P%202018-83%20Medya%20okur%20yazarl%C4%B1%C4%9F%C4%B1%20(7%20veya%208.%20s%C4%B1n%C4%B1f).pdf)
- Ministry of Education (2022). *Social studies curriculum (primary and secondary school 4th, 5th, 6th and 7th grades)*. Ankara: Ministry of Education. <http://mufredat.meb.gov.tr/>
- Ocak, G. & Karakuş, G. (2018). Pre-service teachers' digital literacy self-efficacy scale development. *Kastamonu Journal of Education*, 26(5), 1427-1436.
- Öztürk, C. (2015). Sosyal Bilgiler: Toplumsal yaşama disiplinler arası bir bakış [Social Studies: An interdisciplinary view of social life]. Ed. Cemil Öztürk, *Sosyal bilgiler öğretimi, demokratik vatandaşlık eğitimi* içinde [In Social studies education, democratic citizenship education] (s.1-31). Pegem Akademy.
- Öztürk C., Yaman T. ve Kara İ. (2020). Being a Teacher in the Digital Age: Examining Social Studies Teachers' Experiences. *ITEAC' 2020 Congress Book* 19 - 21 Aralık 2020 (s. 118-126). Online
- Polat, S. (2018). *Examining the digital literacy levels of social studies teacher candidates in terms of different variables*. Ankara: Academic studies.
- Sakallı, H. (2015). *Sınıf öğretmeni adaylarının dijital vatandaşlık düzeyleri ile siber zorbalık eğilimleri arasındaki ilişkinin incelenmesi*. (Yayımlanmamış yüksek lisans tezi). [Examining the relationship between primary school teacher candidates' digital citizenship levels and cyberbullying tendencies. Unpublished master's thesis]. Adnan Menderes University, Institute of Social Sciences, Aydın.
- Som Vural, S. & Kurt, A. (2018). Investigation of digital citizenship indicators through university students' perceptions. *Educational Technology Theory and Practice*, 8(1), 60-80.
- TDK (2022). *Turkish dictionary*. Ankara: TDK.
- Tokmak, A., Yılmaz, A., & Seker, M. (2022). The Effect of Harezmi Education Model on the Computational Thinking Skills of Secondary School Students. *Education Quarterly Reviews*, Vol.5 Special Issue 2: Current Education Research in Turkey, 526-541.
- Yaman, C. (2019). *Sosyal bilgiler öğretmen adaylarının dijital okuryazarlık düzeylerinin incelenmesi (Niğde Ömer Halisdemir Üniversitesi örneği)*. (Yayımlanmamış Yüksek Lisans Tezi). [Investigation of digital

- literacy levels of social studies teacher candidates (Niğde Ömer Halisdemir University example). Unpublished master's thesis]. Niğde Ömer Halisdemir University Institute of Educational Sciences, Niğde.
- Yıldırım, F. & İlhan, İ. Ö. (2010). Validity and reliability study of the Turkish form of the general self-efficacy scale. *Turkish Journal of Psychiatry*, 21(4), 301-308.
- Yılmaz, M. (2019). *Öğretmen adaylarının dijital vatandaşlık düzeylerinin belirlenmesi*. (Yayımlanmamış yüksek lisans tezi). [Determining the digital citizenship levels of teacher candidates. Unpublished master's thesis]. Mersin University Institute of Education Sciences, Mersin.

A Correlational Study of Happiness and Self-Determination among Vietnamese Students Across Educational Levels

Lam Huy Phuong¹, Pratchayapong Yasri²

¹ HACA International School (HACA), Ho Chi Minh City, Vietnam

² Faculty of Science, King Mongkut's University of Technology Thonburi, Bangkok, Thailand

Correspondence: Pratchayapong Yasri, Faculty of Science, King Mongkut's University of Technology Thonburi, Bangkok, Thailand. E-mail: pratchayapong.yasr@kmutt.ac.th

Abstract

Available research separately shows the importance of happiness and self-determination in education. However, the effects of student happiness on learning motivation across educational levels is still lacking compelling verifications. This study employed the subjective happiness scale (SHS) and self-determination research to explore each aspect as well as the relevance between these two variables. The findings give insights about current levels of happiness and studying motivations in different educational groups in Vietnam. Applied in all academic levels, there is a statistical correlation between happiness and self-determination: if the students have high levels of happiness at their schools, they are likely to have a stronger positive learning motivation. Analysis of the research results indicates that kindergarten and elementary students have the highest level of happiness as well as the strongest intrinsic motivation for learning. Also high school students, having the lowest level of happiness, might need more support by alternative methods.

Keywords: Happiness, Self-Determination, Kindergarten, Elementary, Secondary, High School, Undergraduate, Postgraduate

1. Introduction

1.1 The value of self-determination for lifelong learning

The growth tendencies of humans are based on their psychological needs. When feeling strongly inspired, human reach for new experiences, enhance themselves, master their competencies and take responsibility (Deci & Ryan, 2012). The powerful behaviors of self-determined people manifest as purposeful plans to achieve preselected goals. (Locke, Shaw, Saari, & Latham, 1981). Additionally, according to Wehmeyer (1997), people with highly self-determined behaviors tend to set goals and evaluate the consequences of their actions, enabling them to attain their goals.

The cognitive motivations that stimulate these positive human potentials are defined in self-determination theory. The motivations of people's behaviors were identified when they believed in a value and thought they could

perform to accomplish it. This was about achieving results rather than an attachment to past reinforcements (Deci & Ryan, 2012).

Self-determination is a theory of human motivation that has been developed by American psychologists E. Deci and R. Ryan. The theory introduces a way to classify motives into three types:

- **Amotivation:** is a state of non-desire and non-intention of taking action. People of amotivation are not motivated, and since their actions do not come from subjective will, they do not feel competent and therefore might not achieve the expected results.
- **Extrinsic motivation:** is associated with performing actions to achieve an outcome which is indirectly relevant to the actions. An example is a student who goes to school because he wants to avoid punishment from parents. There are four types of extrinsic motivation:
 - External regulation: the lowest degree of autonomy. In this kind of regulation, acts are performed in response to directives stemming from external factors, in order to achieve a reward or avoid a punishment.
 - Introjected regulation: this controlled regulation is people behaving based on some degree of external pressure.
 - Identified regulation: this motivation occurs when the individual appreciates the behavior being performed, finds its importance and chooses that behavior voluntarily.
 - Integrated regulation: the behavior is performed because it is completely consistent and suitable for the individual's own authentic personal goals.
- **Intrinsic motivation:** is present when people choose to behave or perform because of inherent interests. Individuals doubtlessly act with a sense of enjoyment. An example is a student who goes to school because he enjoys learning new things and making new friends.

Intrinsic motivation is the expression of the human tendency toward learning and creativity. It enhances people's capacities to explore and learn (Deci & Ryan, 2000). This kind of motivation, which comes from intrinsic forces including individual preferences, perspectives, principles and goals, will strengthen personal self-esteem to gain and to keep cognitive consistency (Markus, Kitayama & Heiman, 1996; Waschull, & Kernis, 1996).

Deci & Ryan (2000) suggest thinking of students who are motivated to study because of either promised rewards from parents for having good grades or chastisement for not learning well. These students might gain expected grades in an attitude of displeasure and resentment. Cognitively, their perception of their reward for studying is either receiving money or avoiding punishment. As a result, the education these people receive does not include the experience of exercising free choice to learn what they want. Rather, they just try to do well to achieve a standard that is not their own. On the other hand, students who can define their own desires willingly study hard because of their personal inner values. These students experience high autonomous self-regulation. They grow with behaviors that are the reflections of their own interests. They are likely to spend more time studying without force. They have the freedom to choose what they prefer so they normally get good results for their choices.

Furthermore, key research findings from Lin, Wu & Cheng (2015) stated that students who made choices of majors based on individual interests experienced less career uncertainty. Other research from Tien et al. (2005) also confirmed the significant role of self-adjustment in decreasing career uncertainty, as self-adjusted students were able to explore their interests, capabilities, purposes and desires. The National Career Development Association in the United States (NCDA) reported that the foundation of success in a student's future career was growth in self awareness of his or her individual capabilities, interests, values and purposes (Lazarus & Ihuoma, 2011).

Preliminary decisions about career choice are made at the exploration stage of high school. Without motivation to learn and choose suitable courses in high school, students are likely to become misfit graduates. This has been the key factor affecting the unemployment rate (Pascual, 2014). Thus, education has an important role in helping high school students to experience and prepare for their career choices (Lent et al., 1994; Turner and Lapan, 2002; Tang, Pan, Newmeyer, 2008).

1.2 Happiness & the future

In recent years, many countries have discovered a new level of concern for students' happiness, as a result of high levels of mental health problems among students. Educational systems at all levels have had to face major ramifications of the lack of in-school happiness (Guilherme and de Freitas, 2017; Salavera et al. 2017). Happiness is essential for students' motivation to learn in school (Datu et al. 2016; Frey and Stutzer 2010; Moos et al. 2005; Oreopoulos 2007; Soleimani and Tebyanian 2011). Recent research into happiness also supports the notion that individuals who are happier show more initiative to collaborate with peers (Post, 2005; Veenhoven, 2008).

Life span is an important influence on happiness. Hirvonen and Mangelaja (2007) indicated that older people seem to be less happy than younger ones. Other research from Frijters & Beaton (2012) defined the u-shaped correlation of happiness with age among people from 18 to 90 year of age. The research showed a decrease in happiness level after age 18, then a significant increase in happiness at around age 60, after which there was a decline past age 70.

In kindergarten, emotion and, specifically, happiness is a significant factor for development of cognitive and social skills, as well as classroom engagement among children (Garner and Waajid, 2012). Relatively, happy students tend to have more readiness for school development. From the longitudinal research of Ladd et al. (2000), the unhappiness of kindergarten students might result in social disconnection behaviors and lower school performance. Happiness should be built in early childhood because its presence or absence has a strong and foundational effect on the development of social and emotional skills; the lifelong personality of a person will also be established during this childhood period (Mahon et al., 2010; Parker and Asher, 1989). The roots of adult happiness are established during childhood (Seligman & Csikszentmihalyi, 2000; Seligman, 1995). Depression during puberty and afterwards is reduced by 50 percent in persons who have been taught about optimistic thinking skills during their childhood, compared to those who have not received such education. This can be understood to mean that skills which 3-5 year old kindergarten students are taught, with practice, in a happy environment, can affect their lives as 10-19 years old students, as well as later on throughout life (O'Rourke & Cooper, 2010).

The research in elementary education has shown a significant positive correlation between measures of student happiness and academic achievement (Verkuyten & Thijs, 2002). Happy students tend to have a stronger emotional intelligence, enabling them to manage stress and avoid depression. Additionally, they are confident in learning when they are happy. Students can also strengthen their potentiality and improve enthusiasm by studying in a happy school environment (Fateme & Mahmoud, 2011).

Remarkably, academic transitions from primary to secondary school tend to pose potential risks of decreased learning motivation and educational attainment (Eccles, 2004). Acknowledgement of the possibility that sensitive academic transitions can cause a student to disengage, and prevention of such disengagement, is essential to that student's achievement of success in higher education and their future career (Upadyaya and Salmela-Aro, 2013). A study by Kiuru et al. (2020) indicated the improvement of secondary students' happiness in school would lead to higher academic achievement and better interpersonal relationship with peers, teachers and parents. Happy secondary students might evolve toward success through the exercise of their moral standards and personality strengths (Duckworth and Seligman, 2005).

The research of high school students in 32 countries from Kirkcaldy et al. (2004) showed the positive correlations between happiness scores and scholastic achievements in mathematical literacy, reading literacy, scientific literacy and IQ score. Another study also reported that greater learning results and superior life achievement were the outcomes of students who attended schools that prioritized the well-being of learners (Layard and Hagell, 2015). Chan et al. (2005) revealed that happy undergraduate students could be predicted to perform better schoolwork, have valuable social relationships and manage appropriate timelines. Moreover, students with high levels of happiness also have less social anxiety and depression (Öztürk and Mutlu, 2010). Undergraduate students with high levels of happiness tend to excel in social and family relationships with peers and parents. As a result, they also have an optimistic and healthy mind (Deb et al., 2020). Consciousness of the need of undergraduate students to experience happiness in the school environment is crucial to improve their positive thinking and fuel academic

curiosity. Moreover, happy students are likely to be high achievers, giving rise to positive academic and social results (Picton et al., 2018; Kahu & Nelson, 2017).

In fact, reaching for student happiness optimizes students' improvement of both present academic achievement and future work and life.

1.3 Research questions

Studies exploring students across educational levels in relation to happiness and self-determination are still scarce. We will examine data from a study testing the correlation (or lack thereof) between happiness and self-determination in students taken from a broad spectrum of educational levels in Vietnam. This research allows for the direct examination of the following questions in different academic levels:

- What are the levels of happiness perceived by the student participants?
- What are the levels of self-determination by the student participants??
- What (if any) is the correlation that exists between happiness and self-determination?

2. Methodology

2.1 Research design

There were three aspects of this study:

- Firstly, the study was aimed to investigate levels of happiness of Vietnamese students across educational groups.
- Secondly, the study explored levels of self-determination from these students
- Thirdly, the study examined the correlation between these two variables.

To evaluate, twenty-two items were adapted from the subjective happiness scale (Chinini, 2014) and the self-determination scale (Deci & Ryan, 2000) for research in this study: four items for happiness, eighteen items for self-determination. All answers were collected under a 7-point Likert scale anchored (Joshi et al., 2015) by 1 (strongly disagree) to 7 (strongly agree), combined with a hedonic face scale illustration (Chen et al., 1996) to support the understanding of participants under 18 years old.

The meanings of the specific questionnaire items were explained to the students, and it was emphasized to them that there were no right or wrong answers to any item, and their own perceptions should be reflected in chosen answers. All participants were also offered the option to withdraw from the study at any time without any negative consequence. Additionally, the questionnaire was given to school representatives for approval before implementation. No students refused to participate. The time to complete the survey was about 15 minutes on average. No personal data was collected and thus all participants were kept anonymous.

2.2 Sampling procedure

All participants were volunteers for this research and fully had the right to withdraw their participation at any time. The data collection was implemented under considerable care and guidance of teachers for students under 18 years old. The teachers did not have any motive to influence the students' answers. For confidentiality, all participant's identity and private information including their responses will not be disclosed.

Participants of the studies were 352 students, in the age range of 5 - 48 years old (with the mean of 16, standard deviation of 8.3). They were from Kindergarten, Elementary, Secondary, High school, Undergraduate and Postgraduate without specification of genders.

Participants of the studies were from 4 cities of Vietnam, including 1 big city (Ho Chi Minh) and 3 provinces (Binh Phuoc, Dong Thap, An Giang). All data collection was taken during one month in 2022.

Table 1: Numbers of students and schools across educational levels in this research

<i>Grade</i>	Schools	Students
1 Kindergarten	3	60
2 Elementary	2	60
3 Secondary	2	60
4 High School	2	60
5 Undergraduate	6	60
6 Postgraduate	5	52
Grand Total	15	352

2.3 Measures

2.3.1 The Subjective Happiness Scale (SHS)

The approach was evolved by Lyubomirsky and Lepper (1999) by researching 2,500 participants across 14 studies. This is used to measure global happiness by a questionnaire of 4-items. These items will ask respondents to:

- Indicate their happiness using elective ratings
- Characterize their ratings relative to peers
- Measure their happiness as comparing to very happy persons
- Compare their happiness to not very happy persons

2.3.2 Self-determination

An 18-item questionnaire was adapted from previous scales of self-determination Deci & Ryan (2000) to assess students' motivation in learning.

Example questionnaire items are: I go to school but it is a waste of my time (amotivation - non regulation), I go to school because I want to get good grades (external regulation), I go to school because I want the teacher to think I'm a good student (introjected regulation), I go to school because I think it is important to understand lessons (identified regulation), I go to school because I want to make new friends (integrated regulation), I go to school because I enjoy learning new things (intrinsic regulation).

2.3.3. Scope & Limitation of the Study

- Scope: the study focuses on examining levels of happiness and self-determination as well as their statistical correlation across educational levels from kindergarten, elementary, secondary, undergraduate and postgraduate in Vietnam.
- Limitation: although the research is based on global verification of validity among applied methods, the participants of this research are from Vietnam so applicable results for other countries across the world may need further research.

3. Results

3.1 Self-determination

The self-determination factors in different educational levels are firstly demonstrated to see the dominant elements affecting students' motivation learnings.

Table 2 & Table 3 show the means and p-value of the means from the self-determination factors in different educational levels. Kindergarten, elementary and high school data show one of the key self-determination factors

to be intrinsic motivation, along with identified regulation and integrated regulation. The mean for intrinsic regulation in kindergarten students is $\bar{x} = 6.4$, elementary is $\bar{x} = 6.5$ and high school is $\bar{x} = 5.4$. Statistically in Table 4, the high school score for intrinsic motivation is significantly lower than both kindergarten and elementary ($p < 0.05$). Even in higher levels of education, students at graduate and postgraduate levels cannot achieve the intrinsic motivation score that the children have at kindergarten and elementary. The mean of intrinsic motivation from undergraduate students is $\bar{x} = 5.4$ and postgraduate students is $\bar{x} = 5.6$, these means are significantly lower than kindergarten and elementary ($p < 0.05$).

When scores from secondary and undergraduate students were examined, it was found that secondary and undergraduate students are predominantly led by identified regulation. The identified regulation mean for secondary is $\bar{x} = 6.2$ and for undergraduate is $\bar{x} = 5.7$. Postgraduate students are directed by both identified regulation ($\bar{x} = 5.8$) & intrinsic motivation ($\bar{x} = 5.6$).

Table 2: The means of the self-determination factors in different educational levels

Mean	Amotivation	External Regulation	Introjected Regulation	Identified Regulation	Integrated Regulation	Intrinsic Motivation
Kindergarten	2.2	4.2	4.3	6.2	6.2	6.4
Elementary	1.9	3.8	3.4	6.5	6.3	6.5
Secondary	2.2	4.0	3.2	6.2	5.7	5.8
High School	2.9	3.6	3.4	5.4	5.3	5.4
Undergraduate	3.0	3.3	3.2	5.7	5.2	5.4
Postgraduate	2.6	2.6	2.8	5.8	5.1	5.6

Table 3: P-value of the means from the self-determination factors in different educational levels

	P-value	Amotivation	External Regulation	Introjected Regulation	Identified Regulation	Integrated Regulation	Intrinsic Motivation
Kindergarten	Amotivation	1.0					
	External Regulation	0.0	1.0				
	Introjected Regulation	0.0	0.7	1.0			
	Identified Regulation	0.0	0.0	0.0	1.0		
	Integrated Regulation	0.0	0.0	0.0	0.5	1.0	
	Intrinsic Regulation	0.0	0.0	0.0	0.1	0.1	1.0
Elementary	Amotivation	1.0					
	External Regulation	0.0	1.0				
	Introjected Regulation	0.0	0.2	1.0			
	Identified Regulation	0.0	0.0	0.0	1.0		
	Integrated Regulation	0.0	0.0	0.0	0.1	1.0	
	Intrinsic Regulation	0.0	0.0	0.0	1.0	0.1	1.0
Secondary	Amotivation	1.0					
	External Regulation	0.0	1.0				
	Introjected Regulation	0.0	0.0	1.0			
	Identified Regulation	0.0	0.0	0.0	1.0		
	Integrated Regulation	0.0	0.0	0.0	0.0	1.0	

	<i>P-value</i>	Amotivation	External Regulation	Introjected Regulation	Identified Regulation	Integrated Regulation	Intrinsic Motivation
<i>High School</i>	Intrinsic Regulation	0.0	0.0	0.0	0.1	0.6	1.0
	Amotivation	1.0					
	External Regulation	0.0	1.0				
	Introjected Regulation	0.0	0.6	1.0			
	Identified Regulation	0.0	0.0	0.0	1.0		
	Integrated Regulation	0.0	0.0	0.0	0.5	1.0	
	Intrinsic Regulation	0.0	0.0	0.0	0.8	0.6	1.0
<i>Undergraduate</i>	Amotivation	1.0					
	External Regulation	0.2	1.0				
	Introjected Regulation	0.4	0.8	1.0			
	Identified Regulation	0.0	0.0	0.0	1.0		
	Integrated Regulation	0.0	0.0	0.0	0.0	1.0	
	Intrinsic Regulation	0.0	0.0	0.0	0.3	0.3	1.0
	<i>Postgraduate</i>	Amotivation	1.0				
External Regulation		0.9	1.0				
Introjected Regulation		0.3	0.4	1.0			
Identified Regulation		0.0	0.0	0.0	1.0		
Integrated Regulation		0.0	0.0	0.0	0.0	1.0	
Intrinsic Regulation		0.0	0.0	0.0	0.3	0.0	1.0

Table 4: P-value of intrinsic regulation across educational levels

<i>P-value</i> (<i>Intrinsic Motivation</i>)	<i>Kindergarten</i>	<i>Elementary</i>	<i>Secondary</i>	<i>High School</i>	<i>Undergraduate</i>	<i>Postgraduate</i>
Kindergarten	1.0					
Elementary	0.4	1.0				
Secondary	0.0	0.0	1.0			
High School	0.0	0.0	0.1	1.0		
Undergraduate	0.0	0.0	0.1	0.9	1.0	
Postgraduate	0.0	0.0	0.4	0.3	0.4	1.0

n=352

Students with higher levels in education are less likely to be motivated by external regulation. Results from Table 1 and Table 5 indicate that the value of external regulation in kindergarten ($\bar{x} = 4.2$, $p < 0.05$) is significantly higher than elementary ($\bar{x} = 3.8$), secondary ($\bar{x} = 4.0$) and high school ($\bar{x} = 3.6$). After that, the scores statistically significantly decreased at undergraduate ($\bar{x} = 3.3$, $p < 0.05$) and then postgraduate ($\bar{x} = 2.6$, $p < 0.05$) levels.

Table 5: P-value of external regulation across educational levels

P-value (External Regulation)	Kindergarten	Elementary	Secondary	High School	Undergraduate	Postgraduate
Kindergarten	1.0					
Elementary	0.0	1.0				
Secondary	0.2	0.4	1.0			
High School	0.0	0.5	0.2	1.0		
Undergraduate	0.0	0.0	0.0	0.2	1.0	
Postgraduate	0.0	0.0	0.0	0.0	0.0	1.0

n=352

3.2 Happiness

When total mean scores from happiness were examined, it can be seen in table 6 & table 7 that kindergarten has the highest level of happiness ($\bar{x} = 6.1$, $SD = 0.7$, $p < 0.05$), the second top runner of happiness level is elementary ($\bar{x} = 5.4$, $SD = 1.1$, $p < 0.05$), lowest level of happiness is high school ($\bar{x} = 4.3$, $SD = 1.2$, $p < 0.05$). Secondary ($\bar{x} = 5.2$, $SD = 1.2$), undergraduate ($\bar{x} = 4.8$, $SD = 1.2$) and postgraduate ($\bar{x} = 4.9$, $SD = 1.0$) students tend to have higher levels of happiness than high school students. However, their happiness scores are statistically lower than the children in this study in elementary school or kindergarten ($p < 0.05$).

Table 6: Descriptive statistics of happiness across educational levels

Happiness Groups	Mean	SD	Kurtosis	Skewness
Kindergarten	6.1	0.7	-0.1	-0.7
Elementary	5.4	1.1	0.7	-0.9
Secondary	5.2	1.2	-0.4	-0.5
High School	4.3	1.2	0.2	-0.3
Undergraduate	4.8	1.2	1.0	-0.6
Postgraduate	4.9	1.0	-0.1	-0.4

n= 352, $p < 0.05$, $F=19$, F critical = 2.2

Table 7: P-value of happiness across educational levels

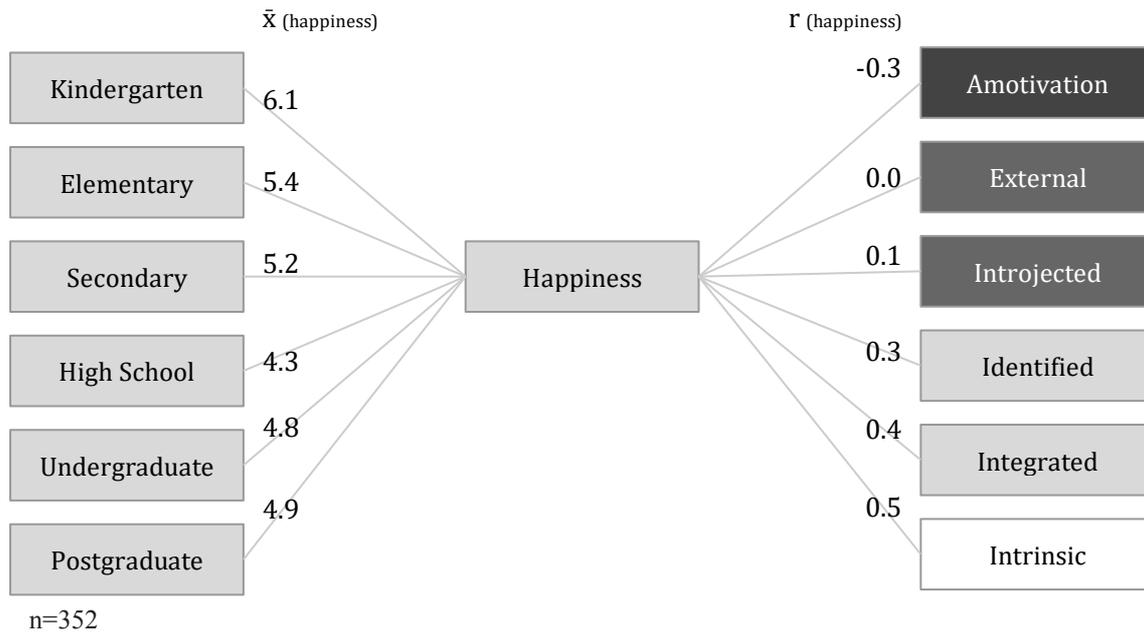
P-value (Happiness)	Kindergarten	Elementary	Secondary	High School	Undergraduate	Postgraduate
Kindergarten	1.0					
Elementary	0.0	1.0				
Secondary	0.0	0.4	1.0			
High School	0.0	0.0	0.0	1.0		
Undergraduate	0.0	0.0	0.1	0.0	1.0	
Postgraduate	0.0	0.0	0.1	0.0	0.7	1.0

n=352

3.3 Correlation

Findings from Chart 1 below show that when individual happiness is increased, there is a growth in psychological motivation toward actions, and this effect manifests across educational levels. The sign of the correlation value is positive between happiness and self-determination. In addition, happiness level of students is inversely correlated with amotivation. So in summary, the greater the happiness of a student, the higher level of self-determination that student can gain, reaching more toward the ideal of intrinsic motivation, and the lower the degree of amotivation that student need to manage.

Chart 1: Correlation values between happiness and self-determination factors in different levels of education



4. Discussion and conclusion

The findings from this study show a close relationship between two factors: happiness and self-determination. This opens opportunities for educators to further research and find solutions to improve the happiness level of learners, which positively affect inner learning motivation, especially during the sensitive period in high school. The degree to which students possess more happiness or less is crucial in learning given the solid evidence of positive correlation with the desirable outcome of intrinsic motivation. Importantly, students in high school should have the choice to learn things they are interested in, and a strong understanding that learning leads to a bright future. However, we can see that current high school students explored in this research got low scores for both happiness and intrinsic motivation compared to students in junior years. Therefore, this is a risk for themselves and also a potential social burden in the future. This issue has been raised in the literature by a number of scholars as shown in Psacoe et al. (2019) whose review indicates that students in secondary school environments confront a variety of persistent pressures connected to academic requirements which can potentially lead to lower academic performance, diminished motivation, and the possibility that they will drop out of school altogether. This scenario should be addressed since it might have long-term consequences, such as a lower likelihood of long-term employment for these individuals. This problem collectively costs governments billions of dollars yearly. The decrease in happiness and intrinsic motivation after elementary years highlights the need to refine our understanding of teachers' educational perspectives and the barriers teachers face with regard to enhancing students' interests in learning. Although various causes may be attributed to such decreased happiness, it is well within the responsibility of educators and teachers to promote positive classroom environments where students can feel comfortable expressing their ideas, taking chances, posing questions and tackling learning problems.

Analyzing factors to enhance self-determination in schools, Karvonen et al. (2004) and Eisenman et al. (2001)

reported perceptions and interventions of teachers and parents were significant for promoting self-determination in students, together with effective support from counselors and administrators. According to self-determination theory, we all have three basic psychological needs: autonomy, competence, and relatedness (Niemic & Ryan, 2009). Our motivation is more independent when our social settings, especially schools, are more supportive of these psychological needs. In the educational context, if these needs are not addressed, students require more outside motivation to regulate them, potentially making them even less happy to engage with school tasks. Many studies have revealed that when students are more autonomously driven, they are more likely to attain their goals over time.

Researchers have explored the degree to which this kind of knowledge about students' self-determination has actually been applied in pedagogical contexts. Wehmeyer, et al. (2000) indicated that 60% of teachers from the sample of 1,219 teachers studied, understood the importance of self-determination. These teachers highly rated the value of self-determination in supporting students' success in school and in their future career. However, 31% of the teachers reported that students did not have individualized educational goals based on self-determination and 33% of the teachers shared that there was no involvement of students in educational planning. Other researchers also share similar points, indicating that there is a gap between knowledge about self-determination and actual application of pathways to students' self-determination by teachers and school systems (Grigal et al., 2003; Thoma, et al., 2002). Further research is necessary to understand the teachers' perspectives so that we may fully understand and develop collaborative solutions.

References

- Chan, G., Miller, P. W., & Tcha, M. (2005). Happiness in university education. *International review of economics education*, 4(1), 20-45. [https://doi.org/10.1016/S1477-3880\(15\)30139-0](https://doi.org/10.1016/S1477-3880(15)30139-0)
- Chinni, M. (2014). Subjective Happiness Scale. In: Michalos, A.C. (eds) Encyclopedia of Quality of Life and Well-Being Research. Springer, Dordrecht. https://doi.org/10.1007/978-94-007-0753-5_2898
- Chen, A. W., Resurreccion, A. V. A., & Paguio, L. P. (1996). Age appropriate hedonic scales to measure food preferences of young children. *Journal of Sensory Studies*, 11(2), 141-163. <https://doi.org/10.1111/j.1745-459X.1996.tb00038.x>
- Deci, E. L., & Ryan, R. M. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, 55(1), 68-78. <https://doi.org/10.1037/0003-066X.55.1.68>
- Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, 11(4), 227-268. https://doi.org/10.1207/S15327965PLI1104_01
- Deci, E. L., & Ryan, R. M. (2012). Self-determination theory. In P. A. M. Van Lange, A. W. Kruglanski, & E. T. Higgins (Eds.), *Handbook of theories of social psychology*, 416-436. Sage Publications Ltd. <https://doi.org/10.4135/9781446249215.n21>
- Datu, J., King, R., & Valdez, J. (2016). The academic rewards of socially-oriented happiness: Interdependent happiness promotes academic engagement. *Journal of School Psychology*, 61, 19-31. <http://doi.org/10.1016/j.jsp.2016.12.004>
- Duckworth, A. L. and Seligman, M. E. P. (2005). Self-Discipline Outdoes IQ in Predicting Academic Performance in Adolescents. *Psychological Science*, 16(12), 939-44. <http://doi.org/10.1111/j.1467-9280.2005.01641.x>
- Deb, S., Thomas, S., Bose, A., & Aswathi, T. (2020). Happiness, meaning, and satisfaction in life as perceived by Indian university students and their association with spirituality. *Journal of religion and health*, 59, 2469-2485.
- Eccles, J. S. (2013). *Schools, academic motivation, and stage- environment fit*. Handbook of adolescent psychology. Hoboken, NJ: Wiley. <http://doi.org/10.1002/9780471726746.ch5>
- Eisenman, L. T., & Chamberlin, M. (2001). Implementing self-determination activities: Lessons from schools. *Remedial and Special Education*, 22, 138-147.
- Frey, B. S., & Stutzer, A. (2010). Happiness and economics: How the economy and institutions affect human wellbeing. NJ: Princeton University Press. <http://doi.org/10.1515/9781400829262>
- Frijters, P., & Beaton, T. (2012). The mystery of the U-shaped relationship between happiness and age. *Journal of Economic Behavior & Organization*, 82(2-3), 525-542. <https://doi.org/10.1016/j.jebo.2012.03.008>
- Fatemeh, T., Mahmoud, S. (2011). Happiness for our kids in schools: A conceptual model. *Procedia - Social and Behavioral Sciences*, 29, 1462-1471, <https://doi.org/10.1016/j.sbspro.2011.11.386>
- Guilherme, A., & de Freitas, A. (2017). Happiness education: A pedagogical-political commitment. *Policy Futures in Education*, 15(1), 6-19. <https://doi.org/10.1177/1478210316637489>

- Garner, P. W., & Waajid, B. (2012). Emotion knowledge and self-regulation as predictors of preschoolers' cognitive ability, classroom behavior, and social competence. *Journal of Psychoeducational Assessment, 30*, 330-343. <http://doi.org/10.1177/0734282912449441>
- Grigal, M., Neubert, D. A., Moon, M. S., & Graham, S. (2003). Self-determination for students with disabilities: Views of parents and teachers. *Exceptional Children, 70*, 97-112. <https://doi.org/10.1177/001440290307000106>
- Hirvonen, T. & Mangelaja, E. (2007). What makes university students happy?. *International Review of Economics Education, 6*(2), 27-41. [https://doi.org/10.1016/S1477-3880\(15\)30105-5](https://doi.org/10.1016/S1477-3880(15)30105-5)
- Joshi, A., Kale, S., Chandel, S., & Pal, D. K. (2015). Likert scale: Explored and explained. *British journal of applied science & technology, 7*(4), 396.
- Kiuru, N., Wang, M.-T., Salmela-Aro, K., Kannas, L., Ahonen, T., & Hirvonen, R. (2020). Associations between adolescents' interpersonal relationships, school well-being, and academic achievement during educational transitions. *Journal of Youth and Adolescence, 49*, 1057-1072. <https://doi.org/10.1007/s10964-019-01184-y>
- Kirkcaldy, B., Furnham, A., and Siefen, G. (2004). The relationship between health efficacy, educational attainment, and well-being among 30 nations. *Eur. Psychol, 9*, 107-119. <https://doi.org/10.1027/1016-9040.9.2.107>
- Karvonen, M., Test, D. W., Wood, W. M., Browder, D., & Algozzine, B. (2004). Putting self-determination into practice. *Exceptional Children, 71*, 23-41.
- Kahu, E. R., & Nelson, K. (2017). Student engagement in the educational interface: Understanding the mechanisms of student success. *Higher Education Research & Development, 37*, 58-71. <https://doi.org/10.1080/07294360.2017.1344197>
- Locke, E. A., Shaw, K. N., Saari, L. M., & Latham, G. P. (1981). Goal setting and task performance: 1969-1980. *Psychological Bulletin, 90*(1), 125-152. <https://doi.org/10.1037/0033-2909.90.1.125>
- Lin, S.-H., Wu, C.-H., & Chen, L. H. (2015). Unpacking the role of self-esteem in career uncertainty: A self-determination perspective. *The Journal of Positive Psychology, 10*(3), 231-239. <https://doi.org/10.1080/17439760.2014.950178>
- Lazarus, K. U., & Ihuoma, C. (2011). The role of guidance counselors in the career development of adolescents and young adults with special needs. *British Journal of Arts and Social Sciences, 2*(1).
- Ladd, G., Buhs, E., & Seid, M. (2000). Children's initial sentiments about kindergarten: Is school liking an antecedent of early classroom participation and achievement? *Merrill-Palmer Quarterly, 46*, 255-279.
- Lent, R. W., Brown, S. D., & Hackett, G. (1994). Toward a unifying social cognitive theory of career and academic interest, choice, and performance. *Journal of Vocational Behavior, 45*, 79-122.
- Layard, R. and Hagell, A. (2015). *Healthy Young Mind: Transforming the Mental Health of Children*. J. F. Helliwell, R. Layard and J. Sachs (eds.) World Happiness Report 2015. New York, Columbia University.
- Markus, H. R., Kitayama, S., & Heiman, R. J. (1996). Culture and "basic" psychological principles. In E. T. Higgins & A. W. Kruglanski (Eds.), *Social psychology: Handbook of basic principles* (pp. 857-913). The Guilford Press.
- Mahon, N. E., Yarcheski, A., & Yarcheski, T. J. (2010). Happiness as related to gender and health in early adolescents. *Clinical Nursing Research, 14*(2), 175-190. <https://doi.org/10.1177/1054773804271936>
- Moos, L., Krejsler, J., Kofod, K., & Jensen, B. (2005). Successful school principal-ship in Danish schools. *Journal of Educational Administration, 43*(6), 563-571. <http://dx.doi.org/10.1108/09578230510625665>
- Niemiec, C. P., & Ryan, R. M. (2009). Autonomy, competence, and relatedness in the classroom: Applying self-determination theory to educational practice. *Theory and research in Education, 7*(2), 133-144. <https://doi.org/10.1177/1477878509104318>
- O'Rourke, J., & Cooper, M. (2010). Lucky to be happy: A study of happiness in Australian primary students. *Australian Journal of Educational & Developmental Psychology, 10*, 94-107.
- Oreopoulos, P. (2007). Do dropouts drop out too soon? Wealth, health and happiness from compulsory schooling. *Journal of Public Economics, 91*, 2213-2229. <http://dx.doi.org/10.1016/j.jpubeco.2007.02.002>
- Öztürk, A., & Mutlu, T. (2010). The relationship between attachment style, subjective well-being, happiness and social anxiety among university students'. *Procedia-Social and Behavioral Sciences, 9*, 1772-1776. <https://doi.org/10.1016/j.sbspro.2010.12.398>
- Pascual, N. T. (2014). Factors affecting high school students' career preference: A basis for a career planning program. *International Journal of Sciences: Basic and Applied Research, 16*(1), 1-14.
- Pascoe, M. C., Hetrick, S. E., & Parker, A. G. (2020). The impact of stress on students in secondary school and higher education. *International Journal of Adolescence and Youth, 25*(1), 104-112. <https://doi.org/10.1080/02673843.2019.1596823>
- Parker, J. G. & Asher, S. R. (1989). Significance of peer relationship problems in childhood. *Kluwer Academic/Plenum Publishers, 5*-23. https://doi.org/10.1007/978-94-009-2442-0_1
- Post, S.G. (2005). Altruism, Happiness, and health: It's good to be good. *International Journal of Behavioral Medicine, 12*(2), 66-77. http://doi.org/10.1207/s15327558ijbm1202_4

- Picton, C., Kahu, E. R., & Nelson, K. (2018). 'Hardworking, determined and happy': first-year students' understanding and experience of success. *Higher education research & development*, 37(6), 1260-1273. <https://doi.org/10.1080/07294360.2018.1478803>
- Seligman, M. (1995). *Optimistic Child*. Houghton-Mifflin: U.S.A.
- Seligman, M. & Csikszentmihalyi, M. (2000). Positive psychology: An introduction. *American Psychologist*, 55(1), 5-14. <https://doi.org/10.1037/0003-066X.55.1.5>
- Soleimani, N., & Tebyanian, E. (2011). A study of the relationship between principals' creativity and degree of environmental happiness in Semnan high schools. *Procedia Social and Behavioral Sciences*, 29, 1869–1876. <http://dx.doi.org/10.1016/j.sbspro.2011.11.436>
- Salavera, C., Usán, P., Pérez, S., Chato, A., & Vera, R. (2017). Differences in happiness and coping with stress in secondary education students. *Procedia Social and Behavioral Sciences*, 237, 1310–1315. <https://doi.org/10.1016/j.sbspro.2017.02.215>
- Upadyaya, K., & Salmela-Aro, K. (2013). Development of school engagement in association with academic success and well-being in varying social contexts: a review of empirical research. *European Psychologist*, 18, 136–147. <https://doi.org/10.1027/1016-9040/a000143>
- Tien, H.-L. S., Lin, C.-H., & Chen, S.-C. (2005). A grounded analysis of career uncertainty perceived by college students in Taiwan. *Career Development Quarterly*, 54, 162–174.
- Tang, M., Pan, W., & Newmeyer, M. D. (2008). Factors influencing high school students' career aspirations. *Professional School Counseling*, 11(5), 285–295. <https://doi.org/10.5330/PSC.n.2010-11.285>
- Turner, S., & Lapan, R. T. (2002). Career self-efficacy and perceptions of parent support in adolescent career development. *Career Development Quarterly*, 51, 44–55.
- Thoma, C. A., Baker, S. R., & Saddler, S. J. (2002). Self-determination in teacher education: A model to facilitate transition planning for students with disabilities. *Remedial and Special Education*, 23, 82–89.
- Veenhoven, R. (2008). Healthy happiness: effects of happiness on physical health and the consequences for preventive health care. *Journal of Happiness Studies*, 9(3), 449–469. <http://dx.doi.org/10.1007/s10902-006-9042-1>
- Verkuyten, M., and Thijs, J. (2002). School satisfaction of elementary school children: the role of performance, peer relations, ethnicity, and gender. *Soc. Indic. Res.*, 59, 203–228. <https://doi.org/10.1023/A:1016279602893>
- Waschull, S. B., & Kernis, M. H. (1996). Level and Stability of Self-Esteem as Predictors of Children's Intrinsic Motivation and Reasons for Anger. *Personality and Social Psychology Bulletin*, 22(1), 4–13. <https://doi.org/10.1177/0146167296221001>
- Wehmeyer, M. (1997). Self-Determination as an Educational Outcome: A Definitional Framework and Implications for Intervention. *Journal of Developmental and Physical Disabilities*, 9, 175–209. <https://doi.org/10.1023/A:1024981820074>
- Wehmeyer, M. L., Agran, M., & Hughes, C. (2000). A national survey of teachers' promotion of self-determination and student directed learning. *Journal of Special Education*, 34, 58–68.



The Effect of Motivation to Participate in Sports on Happiness Level in University Students

Tuncay Öktem¹, Yunus Emre Çingöz²

¹ Faculty of Sport Sciences, Bayburt University, Bayburt, Türkiye. ORCID: 0000-0003-2770-1774
Correspondence: tuncayktm@gmail.com

² Faculty of Sport Sciences, Bayburt University, Bayburt, Türkiye. ORCID: 0000-0002-5702-3997
Correspondence: yunusemrecingoz@bayburt.edu.tr

Abstract

In this study, it was aimed to investigate the effect of individuals' motivation to participate in sports on their happiness level. This study is a descriptive survey study on the impact of Bayburt University students' attitudes about sports on their levels of happiness. This study is a descriptive survey study on the impact of Bayburt University sports sciences faculty students' participation motivation to sports on their levels of happiness. The population of this study, which examined the effect of motivation to participate in sports on happiness level, consisted of students studying at Bayburt University. The sample consisted of a total of 357 people, 129 of whom were female and 228 of whom were male, studying in different departments of the sports sciences faculty of the same university. "Personal Information Form", "Participation Motivation Questionnaire" and "Oxford Happiness Questionnaire-Short Form" were used as data collection tools. SPSS 25 package program was used for statistical analysis. Normality test, spearman correlation and simple linear regression analysis were used in the analysis of the data. When the effect of the participants' motivation to participate in sports on their happiness levels is investigated, it is seen that motivation to participate in sports has a significant effect on the happiness levels of university students. In conclusion, considering the findings obtained from the research, it is seen that there was a relationship between motivation to participate in sports and happiness in the study, and that motivation to participate in sports had an effect on the happiness levels of individuals.

Keywords: Happiness, Participation Motivation, Sports

1. Introduction

With the pandemic that has emerged in recent years and with the increase in mental health problems such as anxiety and depression that have emerged with intense and stressful work life, participation in physical activity and sports activities as a potential protector for mental health has become extremely meaningful. Consequently, participation in sports activities is positively associated with decrease in anxiety, depression, risk of mood and related happiness level (Pluhar et al., 2019). Sports participation levels improve the motivation of individuals and examine them as a point of practical experience with today's realities such as overcoming doubts and fears, relieving stress during training and competition, and they are of great importance in reducing certain threats to a person's mental and psychological health in the relevant modern learning environment.

In modern societies, participation in sports and physical activity has become a growing trend. Participation in sportive activities makes significant contributions not only to the individual's abilities and skills, but also to the social environment, the relationship between the athlete and the coach, and communication with the environment (Blynova et al., 2020). Sports activities help to figure out many psychological problems. Stress relief during training and competition plays an important role against certain threats to a person's mental and psychological health in the modern learning environment, which is concerned with examining issues on the psychological impact of sport as today's facts and practical experience point (Vardanyan, 2014; Blynova et al., 2020). Studies investigating the relationship between sports and exercise with depression focus on how sports and exercise function as antidepressants and how regular physical activity might decrease depressive symptoms in the individual and thus prevent depression (Babiss and Gangwisch, 2009). Individual physical activity or participation in exercise is an effective tool to encourage positive social and psychological outcomes (Berg et al., 2015). Exercise and health are two important factors of happiness in human beings. This idea suggests that happiness may be promoted in individuals by promoting health (Cohen and Lim, 2020).

Even though happiness is easy to define ostensibly and conceptually due to its frequent use in daily life, it is actually a broad concept that is very comprehensive to explain. Although many other concepts such as joy, peace, and excitement seem to reflect happiness, these words are not adequate to describe happiness. The reason for this is that there are various conditions underlying people's happiness (Demirel, 2019). The concept of happiness is defined as the state of elation in reaching all desired situations completely and continuously (<http://www.tdk.gov.tr>). It can be said that exercise and participation in sports activities play an important role among the important factors that lead to happiness.

Through sports activities, relaxation occurs in the body muscles and individuals begin to relax emotionally. Doing sports positively affects numerous hormones in our body. In particular, it decelerates the release of stress hormones in the body. As a result of this, depression symptoms are diminished and the person feels glad, peaceful, and happy (Gümüşdağ et al., 2022). Huang and Humphreys (2011) suggest that if doing sports improves mental health and decreases the effects of depression and anxiety, it might also affect happiness. Dolan et al. (2008), on the other hand, indicate that doing sports reveals higher levels of happiness. To summarize, it can be said that participation in sports and physical activity are specifically linked to the concept of happiness (Balish et al., 2016). Regarding this information, in this study carried out in the field of sports sciences, it was aimed to investigate the effect of individuals' motivation to participate in sports on their happiness level.

2. Materials and Methods

2.1 Research Model

This study is a descriptive survey study on the impact of Bayburt University sports sciences faculty students' participation motivation to sports on their levels of happiness. The descriptive survey model is defined as the screening arrangements made on the sample consisting of the population in order to make a general judgment about the existing population in a universe containing more or less elements (Karasar, 2012).

2.2 Research Group

The population of this study, which examined the effect of motivation to participate in sports on happiness level, consisted of students studying at Bayburt University. The sample consisted of a total of 357 people, 129 of whom were female and 228 of whom were male, studying in different departments of the sports sciences faculty of the same university.

2.3 Data Collection Tools

2.3.1 Personal Information Form

The questions in this section consist of questions about demographic variables such as gender, age, department of education, sports branch of interest.

2.3.2 Participation Motivation Questionnaire

In this research, in order to obtain the study data, Participation Motivation Questionnaire (Oyar et al., 2001) developed by Gill, Gross, and Huddleston (1983) was used to determine the reasons for young individuals to participate in sports (Gill et al., 1983), adapted by Oyar, Aşçı, Çelebi, and Mulazımoğlu (2001). The "Participation Motivation Questionnaire", developed by Gill, Gross and Huddleston in 1983 consists of 30 items and 8 sub-dimensions (Skill Development, Team Membership/Spirit, Entertainment, Friendship, Success/Status, Energy Expenditure, Physical Compliance, and Other Reasons). The reasons for students' participation in sports were evaluated on a 3-point scale as "Very Important (1)", "Somewhat Important (2)", and "Not Important at All (3)" (Gill, Gross, Huddleston, 1983). As the items in the "Participation Motivation Scale" are evaluated between 1 (Very Important) and 3 (Not Important at All), the low values obtained reveal that that item is more important. Reliability coefficient obtained from the total scale was found as $\alpha = .86$ (Oyar et al., 2001). The Cronbach Alpha value obtained for the scale in this study was found as .886.

2.3.3 Oxford Happiness Scale Short Form

The scale was developed by Hills and Argyle (2002). The scale consists of 8 items, and a correlation of .93 ($p < 0.001$) was found between the 29-item original form and the short form. The Turkish adaptation study of OHS-S was conducted by Dogan and Cotok (2011). Accordingly, as a result of the exploratory factor analysis, a single factor structure with 7 items, eigen-value of 2.782 and explaining 39.74% of the total variance was obtained. The single-factor structure of OHS-S was examined by confirmatory factor analysis and the goodness of fit indexes were found ($\chi^2/df=2.77$, AGFI=0.93, GFI=0.97, CFI=0.95, NFI=0.92, IFI=0.95, RMSEA=0.074). Internal consistency coefficient for the reliability of OHS-S was .74, test-retest reliability coefficient was found as .85 (Doğan and Cötok, 2011). The Cronbach's Alpha value obtained for the scale in this study was found as .680.

2.4 Analysis of the Data

The data were collected by creating an online questionnaire. SPSS 25 package program was used for statistical analysis. Prior to proceeding to statistical analysis, assumptions such as normality, homogeneity, stationarity, linearity, if any, related to these analyses should be checked and statistical information should be given about which assumptions are provided. In light of this information, the researcher should justify which analysis techniques he/she prefers and which he/she does not prefer (Tozoglu and Dursun, 2020).

2.5 Ethical Aspect of Research

Ethical approval for the study was taken from Ataturk University Faculty of Sport Sciences Ethics committee with the decision numbered E-70400699- 050.02.04-2200339367 - 2022/10, and required institutional permissions were obtained. In the Personal Information Form, it was stated that the objective of the research, the information to be obtained from the research would be kept confidential and the research was based on volunteerism.

3. Results

Table 1: Frequency and Percentages of Demographic Variables

Variable	Groups	f	%
Gender	Female	129	36.1
	Male	228	63.9
Department	Coaching Education	114	31,9
	Physical Education and Sports	50	14,0
	Sports management	134	37,5
	Recreation	59	16,5
Sports Branches	Football	102	28,6
	Basketball	17	4,8
	Volleyball	44	12,3
	Futsal	13	3,6
	Swimming	23	6,4
	Athletics	21	5,9
	Taekwondo	8	2,2
	Boxing	10	2,8
	Bocce	9	2,5
	Tennis	18	5,0
	Archery	10	2,8
	Handball	12	3,4
	Dart	9	2,5
	Fitness	25	7,0
	Other Sports Branches	36	10,1

When Table 1 is examined, 228 (63.9%) of the participants were male and 129 (36.1%) were female. According to the variable of the department, 134 of the participants (37.5%) were sports management students, 114 (31.9%) were coaching education students, 59 (16.5%) were recreation students, and 50 (14%) were physical education and sports students. Considering the variable of the sports branch, it was determined that 102 (28.6%) of the participants were interested in football, 17 (4.8%) basketball, 44 (12.3%) volleyball, 13 (3.6%) futsal, 23 (6.4%) swimming, 21 (5.9%) athletics, 8 (2.2%) taekwondo, 10 (2.8%) boxing, 9 (2.5%) bocce, 18 (5%) tennis, 10 (2.8%) archery, 12 (3.4%) handball, 9 (2.5%) darts, 25 (7%) fitness and 36 (10.1%) other sports branches. It was determined that the mean age of the participants was 20.99 ± 2.47 .

Table 2: Normality Test for Scale Total Scores

Scales	s	df	p
Happiness	,986	357	,002
Participation Motivation	,830	357	,000

When Table 2 is examined, it is seen that the scale total scores are $p < 0.05$. According to the outcomes of the analysis, it is seen that the scale total scores do not show normal distribution at the level of significance.

Table 3: Spearman Correlation Analysis Results for Participation Motivation Questionnaire and Oxford Happiness Scale

	Happiness	
Participation Motivation	r	.142**
	p	.007
	n	357

* $p < 0.05$, ** $p < 0.01$

When the data in Table 3 are examined, it is seen that there is a low level of positive ($r=142$) and statistically significant relationship between the two scales, according to the results of the Spearman correlation analysis performed to determine the relationship between the two scales.

Table 4: Simple Linear Regression Analysis Results on the Effects of the Mean Score of the Motivation to Participate Questionnaire on the Mean Score of Happiness Scale

Descriptive Variable	B	Std. Error	Beta	t	p	r
Constant	2.174	.423	-	5.139	.000	-
Participation Motivation	.441	.152	.152	2.897	.004	.152

Described Variable: Happiness

$R=0,152$; $R^2=0,023$; $F_{(1,355)}=8,394$; $p=0,000$; Durbin-Watson (D.W.) Statistic= $1,959$

According to Table 4, as a result of the simple linear regression analysis conducted to reveal how the "Participation Motivation Mean Score" predicted "Happiness", which is thought to have an effect on the participants' "Happiness Mean Score", it was found that there was a significant relationship ($R=0.152$; $R^2=0.023$) between them ($F_{(1,355)}=8.394$; $p<0.05$). "Motivation to Participate Questionnaire" mean score explains approximately 2.3% of the variation in "Happiness Scale" mean score.

4. Discussion and Conclusion

Considering the results of the Spearman correlation analysis (Table 3), which was performed to specify the relationship between the motivation to participate in sports and the happiness levels of the participants, a low level, positive, and statistically significant relationship was found between the motivation to participate in sports and their happiness levels. One of the most important factors that encourage and sustain physical activity is their motivation (Chowdhury, 2012). Motivation is the action of an individual under the influence of an intrinsic or extrinsic stimulus that establishes the direction, power, and priority of the action (Inceoğlu, 2010). It is known that intrinsic (such as skill development and mastery) and extrinsic factors (better health, good-looking etc.) are effective in the motivation of individuals to participate in sports (Moradi et al., 2020). Gill et al. (1983), who tried to determine the motivations of active participation in sports, emphasized that motivations such as skill development, team membership, entertainment, success, mobility, and friendship are effective in the participation of young people in sports; McDonald et al. (2002), on the other hand, based on Maslow's (1943) hierarchy of human needs, emphasized that motivations such as success, competition, social interaction, physical fitness, skill development, commitment, aesthetics, aggression, and value development were effective on participation in sports (Polat et al., 2018). Some studies have suggested that the most important reasons for motivation to participate in sports are skill development, learning new skills, recreation, and physical fitness (Moradi et al., 2020). Huang and Humphreys (2012) state that participation in sports may have positive consequences for life. It can be said that it may have an effect that could promote physical and mental health and increase happiness (An et al., 2020). Huang and Humphreys (2011) state that if participation in sports enhances mental health and reduces the effects of depression and anxiety, it might also affect happiness. It is stated that participation in sports plays a remarkable role in reaching happiness (Diener & Seligman, 2004), which is one of the most basic goals of human life. The concept of happiness is described as the state of being proud of reaching all desired situations completely and continuously. (<http://www.tdk.gov.tr>). It emerges as a general evaluation of the experiences of the individual in his/her own life (Diener et al., 2009). In addition, in a study conducted by Öktem (2022) on university students, it was concluded that there was a positive relationship between attitudes towards sports and happiness. In line with this information, it can be said that the increase in the motivation of individuals to participate in sports affects their happiness levels positively and promotes their happiness levels.

When the effect of the participants' motivation to participate in sports on their happiness levels is investigated (Table 4), it is seen that motivation to participate in sports has a significant effect on the happiness levels of university students. Accordingly, motivation to participate in sports is observed as an important factor in explaining the variance on the happiness levels of university students. Thus, it can be said that as the motivation level of the participants to participate in sports increases, there will be an increase in their happiness levels.

In conclusion, considering the findings obtained from the research, it is seen that there was a relationship between motivation to participate in sports and happiness in the study, and that motivation to participate in sports had an effect on the happiness levels of individuals. In this context, it can be said that happiness might be listed among the factors that motivate individuals to participate in sports. In this research, participation motivation questionnaire and happiness scale were utilized. It is thought that future studies will contribute to the expansion of the literature by using different scales with the participation motivation questionnaire.

References

- An, H. Y., Chen, W., Wang, C. W., Yang, H. F., Huang, W. T., Fan, S. Y. (2020). The relationships between physical activity and life satisfaction and happiness among young, middle-aged, and older adults. *International journal of environmental research and public health*, 17(13), 4817. DOI: <https://doi.org/10.3390/ijerph17134817>
- Babiss, L. A., Gangwisch, J. E. (2009). Sports Participation as a Protective Factor Against Depression and Suicidal Ideation in Adolescents as Mediated by Self-Esteem and Social Support. *Journal of Developmental & Behavioral Pediatrics*. 30(5), 376-384. DOI: 10.1097/DBP.0b013e3181b33659
- Balish, S., Conahcer, D., Dithurbide, L. (2016). Sport and recreation are associated with happiness across countries. *Research Quarterly for Exercise and Sport*, 87(4), 382-388. DOI: <https://doi.org/10.1080/02701367.2016.1229863>
- Berg, B. K., Warner, S., Das, B. M. (2015). What about sport? A public health perspective on leisure-time physical activity. *Sport Management Review*, 18, 20-31. DOI: <https://doi.org/10.1016/j.smr.2014.09.005>.
- Blynova, O. Y., Kruglov, K., Semenov, O., Los, O., Popovych, I. S. (2020). Psychological safety of the learning environment in sports school as a factor of achievement motivation development in young athletes. *Journal of Physical Education and Sport*, 20(1), 14-23. DOI: 10.7752/jpes.2020.01002
- Cheon, H. Lim, S. (2020). Pursuing sustainable happiness through participation in exercise for South Korean students: Structural relationships among exercise, mental health factors, school satisfaction, and happiness. *Sustainability*, 12, 3797. DOI: <https://doi.org/10.3390/su12093797>
- Chowdhury, D., R. (2012). *Examining reasons for participation in sport and exercise using the physical activity and leisure motivation scale (PALMS)*. Doctoral dissertation, Victoria University. https://vuir.vu.edu.au/19943/1/Debadep_RoyChowdhury.pdf
- Demirel, M. (2019). Leisure Involvement and Happiness Levels of Individuals Having Fitness Center Membership. *Journal of Education and Learning*, 8(6), 140-149. DOI:10.5539/jel.v8n6p140
- Diener, E., & Seligman, M. E. (2004). Beyond money: Toward an economy of well-being. *Psychological Science in the Public Interest*, 5(1), 1-31. DOI: <https://doi.org/10.1111/j.0963-7214.2004.00501001.x>
- Diener E, Kesebir P., Tov W. (2009). Happiness. In M. R. Leary and R. H. Hoyle, (Eds.), *Handbook of individual differences in social behavior*. The Guilford Press.
- Doğan F, Çötök N. A. (2011). Oxford mutluluk ölçeği kısa formunun türkçe uyarlaması: geçerlik ve güvenilirlik çalışması [Adaptation of the short form of the oxford happiness questionnaire into Turkish: a validity and reliability study]. *Türk Psikolojik Danışma ve Rehberlik Dergisi*; 4(36), 165-172. <https://tr-scales.arabpsychology.com/wp-content/uploads/pdf/oxford-mutluluk-olcegi-kisa-formu-toad.pdf>
- Dolan, P., Peasgood, T., White, M. (2008). Do we really know what makes us happy a review of the economic literature on the factors associated with subjective well-being? *Journal of Economic Psychology*, 29(1), 94-122. DOI: <https://doi.org/10.1016/j.joep.2007.09.001>
- Gill D. L., Gross J. B., Huddleston S. (1983). Participation Motivation in Youth Sport. *International Journal of Sport Psychology*, 14, 1-14. <https://psycnet.apa.org/record/1984-09240-001>
- Gümüüşdağ, H., Bastık, C., Kartal, A. (2022). Aktif Spor Yapan ve Yapmayan Tıp Fakültesi Öğrencilerinin Stres ve Mutluluk Düzeylerinin Belirlenmesi [Determination of Stress and Happiness Levels of Medical Faculty Students Who Do and Not Do Active Sports]. 4. *Uluslararası Tıp Bilimleri ve Multidisipliner Yaklaşımlar Kongresi*, s:123. https://www.researchgate.net/profile/Mehmet-Cakmak-12/publication/359617736_4_TIP_BILIMLERI_KONGRESI_KONGRE_KITABI_syf_768-769/links/624564598068956f3c5b6e65/4-TIP-BILIMLERI-KONGRESI-KONGRE-KITABI-syf-768-769.pdf#page=123
- <http://www.tdk.gov.tr>, Definition of happiness (Access Date: 18.10.2022)
- Huang, H., Humphreys, B. R. (2011). *Sports participation and happiness: Evidence from US micro data*. In P. Rodriguez, S. Kesenne, & B. R. Humphreys (Eds.), *The economics of sport, health and happiness: The promotion of well-being through sporting activities*. Northampton, MA: Edward Elgar. DOI: <https://doi.org/10.1080/13573322.2012.652380>

- Huang, H., Humphreys, B. R. (2012). Sports participation and happiness: evidence from US microdata. *Journal of Economic Psychology*, 33(4), 776–793. DOI: <https://doi.org/10.1016/j.joep.2012.02.007>
- İnceoğlu, M. (2010). *Tutum, algı ve iletişim* [Attitude, perception and communication]. İstanbul: Beykent Üniversitesi Yayınları.
- Karasar, N. (2012). *Bilimsel araştırma yöntemi* (23. Baskı) [Scientific research method (23rd Edition)]. Nobel Yayın Dağıtım.
- Maslow, A. H. (1943). A theory of human motivation. *Psychological Review*, 50(4), 370-396. <https://psycnet.apa.org/record/2006-10220-004>
- McDonald, M. A., Milne, G. R., Hong, J. (2002). Motivational factors for evaluating sport spectator and participant markets. *Sport Marketing Quarterly*, 11(2), 100-113. <https://eds.s.ebscohost.com/eds/pdfviewer/pdfviewer?vid=0&sid=c9e2d1ec-a14d-4115-9b09-4a28563313ec%40redis>
- Moradi, J., Bahrami, A., Dana, A. (2020). Motivation for participation in sports based on athletes in team and individual sports. *Physical Culture and Sport. Studies and Research*, 85(1), 14-21. DOI: <https://doi.org/10.2478/pcssr-2020-0002>
- Oyar, Z. B., Aşçı H. F., Çelebi M., Mülazımoğlu Ö. (2001). Spora katılım güdüsü ölçeğinin geçerlik ve güvenilirlik çalışması [Validity and reliability of participation motivation questionnaire]. *Hacettepe Spor Bilimleri Dergisi*, 12: 2, 21- 23. <https://dergipark.org.tr/tr/download/article-file/151419>
- Öktem, T. (2022). The Effect of University Students' attitudes Towards Sports on Their Happiness Levels. *International Journal of Eurasian Education and Culture*, 7(19), 2389-2398. DOI: <http://dx.doi.org/10.35826/ijoecc.622>
- Pluhar, E., McCracken, C., Griffith, K. L., Christino, M. A., Sugimoto, D., Meehan III, W. P. (2019). Team sport athletes may be less likely to suffer anxiety or depression than individual sport athletes. *Journal of sports science & medicine*, 18(3), 490. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6683619/>
- Polat, E., Hazar, S., Eker, Y. (2018). Spor lisesi öğrencileri ve spor merkezi üyelerinin spora katılım motivasyonlarının bazı değişkenler açısından karşılaştırılması [Comparing sport participation motivation of sport high school students and sport center members in terms of some variables]. *Journal of Human Sciences*, 15(4), 2579-2591. <https://www.j-humansciences.com/ojs/index.php/IJHS/article/view/5617>
- Tozoğlu, E. Dursun, M. (2020). *Spor bilimlerinde bilimsel araştırma süreci* [Scientific research process in sports sciences]. Editör; Gökmen, Ö. Spor & Bilim, Efe Akademi Yayınevi. İstanbul.
- Vardanyan, Y. V. (2014). *The subject of psychological safety in education and sports: domestic and foreign experience of experimental research*. Saransk: MGPI.



An Investigation of the Piano Lessons Repertoire Applied in the Music Education Departments Based on the Views of Teaching Instructors

Hakan Koparanoğlu¹, Şirin Akbulut Demirci²

¹ Department of Music Education, Bursa Uludag University, Bursa, Türkiye
ORCID ID: <https://orcid.org/0000-0001-9358-1024>

² Department of Music Education, Bursa Uludag University, Bursa, Türkiye
ORCID ID: <https://orcid.org/0000-0001-8904-4920>

Correspondence: Hakan Koparanoğlu, Department of Music Education, Bursa Uludag University, Nilüfer, Bursa, 16059, Türkiye. E-mail: hakankoparanoglu@outlook.com, koparanogluhakan@gmail.com

Abstract

In this study, it was aimed to investigate the piano lessons repertoire applied in the Music Education Departments based on the views of the teaching instructors. For this particular purpose, the qualitative method was utilized in the study and a case study in accordance with this method was used. The study group of the study consisted of 10 instructors who were assigned by the easily accessible sampling method and who conducted piano lessons from five different Music Education Departments. The data of the study were collected by using semi-structured interview technique, which is one of the interview technique types. As the data collection tool, a "piano lesson instructor interview form" developed by the researcher was utilized. The qualitative data obtained as a result of the interviews were analyzed using the content analysis technique in accordance with the descriptive analysis stages. In the light of the findings analyzed under eight themes in the study, it was concluded that the instructors considered various criteria for the students, repertoire and course while generating the repertoire they used in the piano lessons applied in the Music Education Departments; that they definitely considered the course achievements, chose the works that met the achievements as much as possible, and planned the course according to these achievements; that they included the works from each period and also the Turkish works in the repertoire they used in order for students to recognize each period, to have the necessary information about these periods, to apply the rendering styles of each period and to gain technical and musical achievements by recognizing the whole piano literature; that they included various etudes and exercise from different composers; that they failed to prefer the works of different genres such as atonal, impressionist and popular music from the contemporary period for various reasons; and that they encountered various problems while creating a repertoire and furthermore, the piano literature which had a wide range, should not be restricted to a common repertoire to be used in the Music Education Departments.

Keywords: Music, Music Education, Piano, Piano Education, Repertory

1. Introduction

It is commonly known that art and art education, which is one of the most essential needs of human life, possesses many sub-dimensions. One of the main branches and most significant sub-dimensions of art and art education, which is divided into various sub-dimensions, is music and music education (Tokatlı and Mustul, 2021; Ünal, 2019). The art branch of music, as in every branch of art, is an infinite source of aesthetic pleasure, emotion and perception (Hasanova, 2021). It is thought that the most effective way to transfer the art of music through education and training is undoubtedly music education.

Music education is basically the process of gaining musical behaviors, developing musical behavior and creating a musical behavior change through musical experiences (Çuhadar, 2016; Uçan, 1997; 2005; Yılmaz et al., 2021). Music is a field of education as well (Büyükcengiz, 2019). Education for music, the concepts and practices of education in music, which play an important role in the implementation of education in an eligible and effective way, basically stem from the fact that music is an important field of education in the implementation of every sub-dimension of education (Büyükcengiz, 2019). Music and music education are believed to be one of the most significant elements that play a role in the regular, effective and productive functioning of human life. It is commonly known that people are trained through music for the effectiveness of these functions; however, this way of education is insufficient in progress of time. Therefore, the main musical abilities and skills, which were considered to be accumulated in the personality of a magician thousands of years ago, became separate musical professions and specializations as they approached the present day by separating from each other in the course of time (Büyükcengiz, 2019; Uçan, 2005). In this sense, according to Uçan, who argues that music education should be considered as a whole, music education is designed and carried out according to three main purposes and three main audiences (Büyükcengiz, 2019). Within the scope of music education, a person receives education whichever of these 3 main titles that person is oriented to and whichever one is appropriate for him/her (Büyükcengiz, 2019). Based on this notion, music education is examined under 3 headings.:

- 1) General music education,
- 2) Enthusiastic music education (amateur),
- 3) Occupational music education (professional) (Uçan, 2005).

Music, for a healthy life for all individuals regardless, is one of the most important elements of the general culture, which is essential to gain a minimum-common general music culture (Algı, 2017; Tarman, 2006; Ünal, 2019). General music education, which is one of the basic components of "general education", is the music education that is compulsory or expected to be compulsory for all age groups and at all levels in terms of elements such as occupation, profession, school, and does not discriminate between the school, department, branch, subsection and program (Büyükcengiz, 2019; Say, 2011; Uçan, 2005; Ünal, 2019). Another type of music education is enthusiastic music education, which is called amateur.

Amateur (enthusiastic) music education, which is not compulsory for everyone, is aimed at individuals who are prone to the field of music and enthusiastic. In this respect, enthusiastic music education can be defined as the type of music education in which individuals, apart from general music education, achieve musical pleasure and satisfaction as an amateur in the field of music in line with their interests (Baylan, 2021; Seyhan, 2019; Uçan, 1997). Amateur (enthusiastic) music education serves as a bridge supporting the general music education and preparing it for professional music education (Tokatlı and Mustul, 2021). Occupational music education is aimed at individuals who are interested in the whole or one branch of the music field and who wish to choose any field of music as a profession. Individuals are required to have musical talent at a level to specialize and realize the profession in the field of music that they will choose in line with their desires. Occupational music education is a type of music education offered to the individuals who possess this talent and wish to continue their professional music education (Kudret and Temiz, 2017; Seyhan, 2019; Tüzlin, 2019; Uçan, 1994; 2005). These areas are listed as instrument training and voice training, etc. (Kudret & Temiz, 2017). Even though occupational music education starts at an early age, it becomes evident in secondary education and takes a professional form in higher education (Karataş & Şengül, 2018; Uçan, 2005).

In general, the institutions that provide professional music education in our country are the following:

- Music Departments of the Anatolian Fine Arts High Schools
- Music Education Departments of Education Faculties
- Music Departments of the Fine Arts University
- Music Departments of the Fine Arts Faculties
- Music and Performing Arts Faculties
- Conservatories

The Music Education Departments, which are professional music education institutions that train music teachers, have undergraduate programs that include various courses within the scope of field knowledge, professional knowledge and general culture determined by the Institution of Higher Education in order for the music teacher candidates to have professional qualifications, essential competence and the achievements necessary for the teaching profession (Demirtaş, 2021).

This program includes voice training, musical hearing training, instrument training, etc. (Aktürk and Yıldız; 2021; Bilen, 1995, cited in Aktürk and Yıldız; 2021). Instrument education is believed to have an important place in the Music Education Departments, since it is an education that includes cognitive, affective and psychomotor behaviors (Demirtaş, 2021; Tufan & Güdek, 2008). An important branch of the instrument education in the undergraduate program of the Music Education Departments is the piano education. Piano education is the most important aspect of instrument education due to its sound and harmony possibilities.

In addition to playing an instrument, piano education plays a significant role for the music teacher candidates, in applying the models and theories used in music education, in gaining a lot of musical knowledge and in having an accompaniment instrument and a wide repertoire that they can use in their professional lives (Çimen & Ercan, 1996, cited in Özer, 2021; Kaleli and Barışeri, 2018; Özer, 2021; Pirlibeylioğlu and Akın Şişman, 2017). Therefore, it is possible to say that piano lessons have an important place in the education of music teacher candidates (Pirlibeylioğlu & Akın Şişman, 2017). The music teacher candidates studying in the Music Education Departments are provided with the piano lessons to recognize the piano literature and to acquire the playing technique that will be essential in their professional lives by sampling the works with certain criteria (Aydnır Uygun, 2012; Pirlibeylioğlu & Akın Şişman, 2017).

In this respect, many different studies have been carried out within the scope of piano lessons applied in the Music Education Departments. These studies illustrate the etudes, exercises and works that belong to different genres and periods that are artistic and educational for the content and purpose of the course (Özer, 2021; Yılmaz, 2004, cited in Özer, 2021). In this sense, it is aimed that students reach a level where they can sing etudes, sonatas, concertos and works that can be used in the school music education courses at a certain level (Akbulut, 2013; Özer, 2021). These works that students use, practice and then perform constitute their repertoire (Kudret & Temiz, 2017). According to Say, the term repertoire, which literally means "Repertoire: Dağar", originates from the Latin word "Reperire". It is known that this term denotes "to have ready to use" in Turkish (Kudret & Temiz, 2017). Repertoire is one of the most important tools in the acquisition and development of desired behaviors and skills in the piano education process and in reaching the intended goals (Ertem, 2011).

The repertoire used in piano education plays an important role in developing the basic behaviors and skills in students, acquiring the behaviors in higher order and learning the techniques (Özer, 2021). From this point of view, it is possible to say that the repertoire created by the instructor should be comprehensive in order for the student to recognize and perform the works that belong to different genres and periods of the piano literature and to improve themselves technically and musically (Özer, 2021). Therefore, designating the piano education applied in the Music Education Departments with common goals and objectives and creating a competent repertoire is of great importance in terms of the quality of piano education (Özer, 2021). It is believed that the repertoire used in piano education has a very significant place for the individuals who have graduated from the Music Education Departments have gained basic technical and musical skills, have knowledge about the relevant music periods and a certain repertoire, are at a level to perform the national works and accompany the school songs and become qualified music teachers in their professional lives (Akbulut, 2013; Özer, 2021; Pirlibeylioğlu and Akın Şişman, 2017; Higher Education Institution [YÖK], 2007).

When the relevant literature is reviewed, no study on this subject or a similar one has been encountered. As far as the related studies are concerned; in his study, Tufan (2000) examined the repertoire used by the educators in the piano lessons of Music Departments at the Anatolian Fine Arts High Schools and Music Education Departments of Education Faculties; within the scope of his study, he revealed that Czerny, Duvernoy, Bertini, Heller, Hanon, The Little Pischna etc. were the sources used and the distribution of the works to the periods were Baroque, Classical, Romantic and Contemporary Periods.

In his study, Ertem (2011) identified the principles regarding the selection of piano repertoire by examining the relevant sources and emphasized the place and importance of choosing the appropriate repertoire in piano education in line with these principles.

Sönmezöz (2014), in his study, revealed a distribution system for achieving the goals to be gained more easily and quickly, suggesting various works for the technical problems of the students, enlightening the piano educators in terms of their content, and a more comprehensive piano education.

In this context, this study is believed to be important since it will help to identify the content of the repertoire used in the piano lessons applied in the Music Education Departments, make contributions to the etudes, exercises and works in the repertoire to the students' achievements, and reveal the reasons for the preference and use of the works, the importance of the repertoire used in piano education, its contribution to the relevant literature and act as references to the future studies.

From this point of view, in this study, it is aimed to investigate the piano lessons repertoire applied in the Music Education Departments in line with the views of the instructors. For this purpose, the problem statement of the study was established as “What are the views of the instructors about the piano lesson repertoire applied in the Music Education Departments?” and accordingly, answers to the following questions were sought:

1. What are the views of the instructors regarding how to create the repertoire used in piano lessons in the Music Education Departments?
2. What are the views of the instructors regarding the content of the repertoire used in piano lessons in Music Education Departments?
3. What are the views of the instructors regarding the problems encountered in the creation of the repertoire in piano lessons applied in the Music Education Departments?
4. What are the views of the instructors regarding the creation of a common repertoire and sources to be used in the Music Education Departments?

2. Method

This section contains information on the methods and techniques used in the study under the main headings of “Research Model”, “Study Group”, “Data Collection Tools” and “Data Collection and Analysis”.

2.1 Research Model

This is a descriptive study since it is aimed to examine the repertoire used in the piano lessons in line with the views of the teaching instructors. Therefore, the qualitative method was used in the study and a case study was implemented in conformity with this method. A case study is a qualitative approach in which the researcher adopts a holistic approach for the real and limited system, collects detailed and in-depth information about the case through multiple information sources and reveals the case themes with the collected information (Creswell, 2016; Yıldırım & Şimşek, 2021).

2.2 Study Group

The study group consisted of instructors who conducted piano lessons at the Music Education Departments of Bursa Uludag University, Dokuz Eylul University, Gazi University, Marmara University and Pamukkale University. Easily accessible case sampling was used in the selection of the instructors to be interviewed.

Convenience sampling is generally used in cases where the researcher cannot use other sampling methods, in order to provide speed and practicality to the study (Yıldırım & Şimşek, 2021). A total of 10 instructors from 5 universities were interviewed in this study. The distribution of the teaching staff in the study group by the universities they worked for is presented in the table below:

Table 1: Distribution of the Teaching Instructors Participating in the Study by University

University Name	Number of Instructors
Bursa Uludag University	2
Dokuz Eylul University	2
Gazi University	2
Marmara University	2
Pamukkale University	2
Total	10

2.3 Data Collection Tools

The data in this study were collected using the semi-structured interview technique, one of the interview technique types. The semi-structured interview form is utilized in order to receive similar information from different people on the same subject (Patton, 1987, cited in Yıldırım & Şimşek, 2021). During the interviews, the researcher had the freedom to ask additional questions and make changes during the question asking sessions in order to get more detailed information apart from the pre-prepared questions (Yıldırım & Şimşek, 2021). As a data collection tool, the "piano lessons instructor interview form" developed by the researcher was used. While preparing the interview form, the relevant literature was reviewed and 10 open-ended questions were generated together with the information obtained. 3 field experts were consulted for their professional opinion for the interview form prepared by the researcher and the content validity was ensured by making the necessary arrangements in line with the expert opinions.

2.3.1 Data Collection and Analysis

Throughout the data collection process, detailed information about the purpose of the study was shared with the participant instructors. The interviews with the instructors were conducted online by the researcher. The interviews were video and audio-recorded after the permissions of the instructors were requested and then they were transcribed into a text.

The qualitative data obtained as a result of the interviews were analyzed using the content analysis technique in accordance with the stages of descriptive analysis (Yıldırım & Şimşek, 2013). Content analysis is an analysis technique in which data showing similar characteristics are combined within the framework of certain themes and presented to the reader in an understandable way (Yıldırım & Şimşek, 2011). Descriptive content analysis, on the other hand, is the systematic handling of the data obtained from the study results and the evaluation with a descriptive approach (Çalık & Sözbilir, 2014).

The findings obtained according to the themes identified within the scope of the given answers in the interview were presented with quotations and accordingly, the comments on the research problem were included as well. While making quotations, the names of the instructors were shortened and coded as instructor 1 (INST1) and instructor 2 (INST2). The distribution of interviews with the instructors is illustrated in the table below.

Table 2: Distribution of Instructors' Interviews

Interview			
Instructor	Form of Interview	Duration of Interview	Date of Interview
INST1	Online	48 min.	March 2022
INST2	Online	28 min.	April 2022

INST3	Online	18 min.	April 2022
INST4	Online	56 min.	April 2022
INST5	Online	24 min.	April 2022
INST6	Online	22 min.	April 2022
INST7	Online	20 min.	April 2022
INST8	Online	40 min.	April 2022
INST9	Online	24 min.	April 2022
INST10	Online	20 min.	April 2022

3. Findings and Interpretation

In this section, the findings obtained from the answers given to the research questions by the instructors in the study group are available. The findings obtained from the research questions were presented and interpreted by creating a table.

In Table 3, the categories and codes related to the theme of the "Circumstances Considered While Creating the Repertoire" obtained from the views of the instructors about the issues they considered while creating the repertoire they used in piano lessons are illustrated.

Table 3: Views of the Instructors Regarding the Circumstances Considered While Creating the Repertoire

THEME	CATERORY	CODE	INSTRUCTORS	f
Circumstances Considered While Creating the Repertoire	Circumstances Considered for the Course	Course Duration	INST2, INST6, INST9	3
		Teaching Method and Technique	INST1, INST9	2
		YÖK Course Content	INST5, INST6, INST7, INST8, INST9, INST10	6
	Circumstances Considered for the Course Achievements	Music Teacher Qualifications	INST6, INST7	2
		Playing the Piano Well	INST6, INST7	2
		Gaining Musicality	INST3	1
		Accompaniment Skill	INST3, INST6	2
		Technical Creation	INST3, INST4, INST6, INST7, INST8, INST10	6
	Circumstances Considered for the Students	Basic Skill	INST4	1
		Level	INST1, INST2, INST3, INST4, INST5, INST6, INST7, INST8, INST9, INST10	10
Individual Characteristics		INST2, INST3, INST4, INST6, INST7, INST9	6	
Educational Background		INST1, INST2, INST3, INST4, INST7, INST8, INST9, INST10	8	
With respect to Insufficiency and Problems		INST2, INST4, INST7, INST8	4	
With respect to Progress		INST3	1	
Favorite Works		INST4, INST7	2	
Circumstances Considered for the Repertoire	Fit for Basic Goals and Behaviors	INST1, INST6	2	
	Fit for the Curriculum	INST2, INST3, INST5, INST8, INST9	5	
	Constructive	INST4, INST5, INST6, INST9, INST10	5	
	Can be used in Professional Life	INST1	1	

Circumstances	Diversity	INST4, INST7	2
Considered	Etudes and Works from All	INST3, INST4, INST5, INST6,	6
for the	Periods	INST7, INST10	
Repertoire	Introducing the Periods	INST1, INST4, INST5	3
Content	Different Genres	INST4, INST7	2
	Melodic Works	INST7	1
	Romantic Period Works	INST7	1

When Table 3 is examined, 5 categories and 25 codes related to the theme of the "Circumstances Considered While Creating the Repertoire " were obtained. It was found that in relation to the category of "Circumstances Considered for the Course", the instructors reported their views on the course duration (3), teaching method and technique (2) and YÖK (Higher Education Institution) course content (6); in relation to the category of "Circumstances Considered for the Course Achievements", they reported their views on music teacher qualifications (2), playing the piano well (2), gaining musicality (1), accompaniment skill (2), technical creation (6) and basic skill (1); regarding the category of "Circumstances Considered for the Students", they reported their views on the level (10), individual characteristics (6), educational background (8), with respect to insufficiency and problems (4), with respect to progress (3) and favorite works (2); regarding the category of "Circumstances Considered for the Repertoire ", they reported their views on the fit for basic goals and behaviors (2), fit for the curriculum (5), constructive (5) and can be used in professional life (1); regarding the category of "Circumstances Considered for the Repertoire Content", they reported their views on the diversity (2), etudes and works from each period (6), introducing the periods (3), different genres (2), melodic works (1) and romantic works (1). It is clear that the instructors considered many criteria while creating the repertoire and chose the works within the scope of these criteria. As far as the findings obtained from the instructors' views are concerned, it was seen that the instructors considered the students-oriented circumstances the most while creating the repertoire and subsequently the repertoire and the course-oriented circumstances.

Some views of the instructors on this theme are presented below.

"In the past, the piano lessons were offered for 3 years, then they were reduced to 1 year, now we increase the compulsory piano lessons to 2 years now; of course, in this period, we determine the literature in order to bring the target behaviors and teacher competencies to a level where they can play the piano, accompany with the piano, and use the piano well when they become teachers. (INST6)"

"I choose a repertoire from the steps that are suitable for the level of etude that the student has played, that is, the basic goals and behaviors that the student has acquired with the etudes. Here, too, apart from the fact that the selected repertoire is appropriate for the level, other circumstances do not matter when a very large teaching method and technique is used correctly (INST1)"

"A repertoire is very individual, so I approach a student like a tailor and look at what I need to add to him/her (INST4)"

Table 4 illustrates the categories and codes related to the theme of "Circumstances Considered for the Course Achievements" obtained from the views of the instructors.

Table 4: The views of the instructors related to the theme of Circumstances Considered for the Course Achievements while Creating the Repertoire

THEME	CATERORY	CODE	INSTRUCTORS	f	
Circumstances Considered in Reference to the Achievements while Creating the Repertoire	Achievements Considered	Achievements Related to the Objectives, Behaviors and Skills	INST3, INST5, INST6, INST8	4	
		Pedagogical Achievements	INST3, INST6	2	
		Achievements Related to the Teaching Profession	INST3, INST6	2	
		Technical Achievements	INST3, INST4, INST7, INST8, INST9	5	
		Musical Achievements	INST3, INST4, INST5, INST7, INST8, INST10	6	
		Circumstances Considered While Creating the Achievements	Fit for Purpose	INST2, INST7, INST8, INST9	4
		Fit for the Students	INST2, INST8, INST9, INST10	4	
	Circumstances Considered in Reference to the Course Content		Introducing the Period, Form, Form and Genre	INST1, INST4, INST5, INST7, INST8, INST9, INST10	7
			Interpreting the Periods with their Characteristics	INST1, INST4, INST7	3
			Recognizing the Differences Between Periods	INST1	1
			Being Parallel with the Achievements of the Music History Course	INST4	1
			Planning the Lesson Based on the Achievements	INST1, INST2, INST5, INST6, INST7, INST8, INST9	7

When Table 4 is examined, 3 categories and 12 codes related to the theme of "Circumstances Considered for the Course Achievements while Creating the Repertoire" were obtained. It was found that in relation to the category of "Achievements Considered", the instructors reported their views on the achievements related to goals, behaviors and skills (4), pedagogical achievements (2), achievements related to the teaching profession (2), technical achievements (5) and musical achievements (6); in relation to the category of "Circumstances Considered While Creating the Achievements", they reported their views related to codes of fit for purpose (4) and fit for the students (4); in relation to the category of "Circumstances Considered in Reference to the Course Content", they reported their views on the codes of introducing the period, form, form and genre (7), interpreting the periods with their characteristics (3), recognizing the differences between the periods (1), being parallel with the achievements of the music history course (1) and planning the lesson based on the achievements (7). It is clear that the instructors considered the course achievements while creating the repertoire. Eventually, it was found that they considered the fact that the achievements were fit for the students and the purpose and that they planned the lesson according to these achievements, which included various skills.

Some views of the instructors on this theme are presented below.

“We aim for certain achievements anyway, so we organize our lessons and choose the repertoire accordingly (INST2)”.

“First of all, we determine the natural goal and behavior, again according to the students again; the curriculum, the repertoire, everything else, the technical development of the student is determined within the first week, and then the achievements are placed accordingly (INST8)”.

“We definitely consider the course achievements; I mean, we determine the repertoire according to what is written in the course achievements, we determine the curriculum, or rather, the repertoire accordingly (INST6)”

Table 5 illustrates the categories and codes related to the theme of "Inclusion of the works requested by the students while creating the repertoire", which were obtained from the views of the instructors regarding the circumstances of including the works requested by the students while creating the repertoire they used in piano lessons.

Table 5: The Views of the Instructors on the Circumstances of Including the Works Requested by the Students While Creating the Repertoire

THEME	CATERORY	CODE	INSTRUCTORS	f		
Circumstances Considered for the Inclusion of the Works Requested by the Students While Creating the Repertoire	Reasons for the Inclusion of the Works Requested by the Students	Appreciation of the Works	INST2, INST3, INST4, INST5, INST6, INST7	6		
		Contribution to Students' Development	INST3, INST4, INST5, INST6, INST7	5		
		Performance Success	INST4, INST7	2		
		Motivation to practice	INST5, INST6, INST7	3		
		Practicing Willingly	INST5, INST7, INST8	3		
		Impact over the Students' Motivation	INST2, INST3, INST4, INST6, INST7	5		
		Endearing the Course	INST2, INST4, INST7, INST8	4		
		Endearing Music	INST2, INST6, INST8	3		
		Endearing the Piano	INST6, INST7, INST8	3		
		Getting the Students into the Relevant Literature	INST6	1		
		Learning Style	INST1	1		
		Circumstances Considered for the Inclusion of the Works Requested by the Students	Level Compatibility with the Curriculum	Level Compatibility	INST1, INST2, INST3, INST5, INST6, INST8, INST9, INST10,	8
				Compatibility with the Curriculum	INST3, INST6, INST7, INST8, INST9	5

When Table 5 is examined, 2 categories and 13 codes in relation to theme of the "Circumstances Considered Regarding the Inclusion of the Works Requested by the Students While Creating a Repertoire " were obtained. The instructors reported their views on Appreciation of the Works (6), Contribution to Students' Development (5), performance success (2), Motivation to practice (3), Practicing Willingly (3), Impact over the Students' Motivation (5), Endearing the Course (4), Endearing Music (3), Endearing the Piano (3), Getting the Students into the Relevant Literature (1) and learning style (1); Regarding the category of "Circumstances Considered While Including the Works Requested by the Students", it was found that they reported their views on Level Compatibility (8) and compliance with the curriculum (5). It is clear that all the instructors actually included the works requested by their students while creating their repertoire. Finally, it was found that the reasons for including the works requested by the students were the development of many positive behaviors towards the students and the teaching of more efficient courses.

Some views of the instructors on this theme are presented below.

"Student requests are always very valuable for me. It is simply because I know that if they play willingly, it will motivate them to work harder and practice more (INST5)".

"Of course, I would like to be able to meet their demands as long as their technical and musical levels are compatible because playing a piece they like is much more valuable in terms of motivation for their development (INST3)".

"I mean, of course, I include them. It is because the students play their favorite much better, they play it more willingly and they come to love the piano very much, so they eventually master it (INST7)".

Table 6 illustrates the categories and codes related to the theme of "The Distribution of the Works in the Repertoire Used in Piano Lessons by Periods", obtained from the views of the instructors on the distribution of the works in the repertoire used in the piano lessons.

Table 6: Views of the Instructors Regarding the Distribution of the Works Used in the Repertoire by Periods

THEME	CATERORY	CODE	INSTRUCTORS	f
Distribution of the Works Used in the Repertoire by Periods	Periods of the Works in the Repertory	Baroque Period	INST1, INST2, INST3, INST4, INST5, INST6, INST7, INST8, INST9, INST10	10
		Classical Period	INST1, INST2, INST3, INST4, INST5, INST6, INST7, INST8, INST9, INST10	10
		Romantic Period	INST1, INST2, INST3, INST4, INST5, INST6, INST7, INST8, INST9, INST10	10
		Contemporary Period	INST2, INST3, INST4, INST5, INST6, INST7, INST8, INST9, INST10	9
Inclusion of the Turkish Works	Inclusion	INST1, INST2 INST3, INST4, INST5, INST6, INST7, INST8, INST9, INST10	10	
Distribution Reasons by Periods	Recognizing the Periods and Genres	Recognizing the Characteristics of the Periods	INST1, INST4, INST5	3
		Recognizing Differences Between the Periods	INST3, INST4, INST6, INST7	4
		Recognizing Differences Between the Periods	INST6	1

Performing Works from Every Period	INST7	1
Recognizing All Genres of Music	INST4, INST6	2
Recognizing the Entire Piano Literature	INST2, INST6	2
Recognizing the Turkish Compatibility with the Curriculum	INST1, INST4, INST6 INST2, INST5	3 2
Compatibility with the Curriculum	INST2, INST3, INST4, INST6, INST8, INST10	6
Versatile Development	INST2	1
Professional Contribution	INST4, INST8	2
Contribution to the Basic Skills	INST2, INST4, INST7	3
Technical Contribution	INST2, INST3, INST7	3
Musical Contribution	INST2	1

When Table 6 is examined, 3 categories and 19 codes in relation to theme of the “Distribution of the Works Used in the Repertoire by Periods” were obtained. It was found that in relation to the category of “Periods of the Works in the Repertory”, the instructors reported their views on the baroque period (10), the classical period (10), the romantic period (10) and the contemporary period (9); Regarding the category of “Inclusion of Turkish Works”, inclusion (10); Regarding the category of “Reasons for Distribution by Periods”, recognizing the periods and genres (3), recognizing the characteristics of the periods (4), recognizing the differences between the periods (1), performing works from each period (1), recognizing all genres of music (2), recognizing the entire piano literature (2), recognizing the Turkish works (3), Compatibility with the Curriculum (2), diversity (6), versatile development (1), professional contribution (2), contribution to basic skills (3), technical contribution (3) and musical contribution (1). It is clear that the instructors included works from every period and Turkish works in the repertoire they used. Ultimately, it was found that there were many important points that the student should recognize, acquire and benefit from as the reason why they included those works from every period in the repertoire.

Some views of the instructors on this theme are presented below.

“I include the Baroque period, classical period, romantic period, contemporary period and the Turkish composers. It is because the students need to play the works from each period and acquire the techniques, knowledge and skills of the periods (INST7)”.

“We definitely include the works that belong to every period in the decisions we make in our groups (INST9)”.

“I also include the Turkish composers, but the works of Turkish composers are either very easy or very difficult. Frankly, I have a hard time choosing the works of Turkish composers for the repertoire (INST10)”.

Table 7 illustrates the categories and codes related to the theme of “the Etudes and Exercises Used in the Repertoire and their Contributions” obtained from the views of the instructors on the etudes and exercises in the repertoire they used in piano lessons and their contributions.

Table 7: Views of the Instructors Regarding the etudes and exercises in the repertoire used in the piano lessons and their contributions

THEME	CATERORY	CODE	INSTRUCTORS	f		
Etudes and Exercises Used in the Repertory and their Contributions	The Etudes Used	Carl Czerny Etudes	INST1, INST2, INST3, INST4, INST5, INST6, INST7, INST8, INST9, INST10	10		
		Friedrich Burgmüller Etudes	INST2, INST3, INST4, INST7, INST8, INST10	6		
		Henry Lemoine Etudes	INST2, INST4, INST8, INST9, INST10	5		
		Jean-Baptiste Duvernoy Etudes	INST2, INST3, INST4, INST5, INST7, INST8, INST10	7		
		Henri Bertini Etudes	INST2, INST7, INST8	3		
		Moritz Moszkowski Etudes	INST2, INST3, INST4, INST6, INST7, INST9, INST10	7		
		Frédéric Chopin Etudes	INST2, INST3, INST4, INST5, INST6, INST7, INST8, INST9, INST10	9		
		Johann Baptist Cramer Etudes	INST2, INST5, INST6, INST7, INST8, INST9	6		
		Muzio Clementi Etudes	INST4	1		
		Sergey Rahmaninov Etudes	INST4	1		
		Franz Liszt Etudes	INST4, INST6, INST8	3		
		Ludvig Schytte Etudes	INST4	1		
		Stephen Heller Etudes	INST5, INST7, INST8, INST9, INST10	5		
		Carl Albert Löschhorn Etudes	INST6	1		
		Philip Glass Etudes	INST2	1		
		Aleksandr Skryabin Etudes	INST4	1		
		Anton Schmoll Etudes	INST7	1		
		Robert Van Beringen Etudes	INST7	1		
		The Exercises Used		Charles-Louis Hanon Exercises	INST1, INST2, INST3, INST4, INST6, INST7, INST8, INST9, INST10	9
				Aloys Schmitt Exercises	INST1, INST9, INST10	3
Josef Pischna Exercises	INST10			1		
The Methods Used		Ferdinand Beyer Piano Method	INST6	1		
		Beniamino Cesi Piano Method	INST9	1		
Other Etudes and Books Used		Four-Hand Etudes	INST2	1		
		Jazz Etudes	INST6	1		
		Syncopated Rhythm Etudes	INST6, INST10	2		
		Multi-Rhythm Etudes	INST6	1		
		ABRSM Scale and Arpeggio Books	INST2	1		
		Köhler Piano Books	INST10	1		
Contributions of the Repertoire Used		Theoretical Contribution	INST1, INST7	2		
		Different Contributions of Each Etude	INST1, INST4	2		
		Acquiring Technical Goals and Behaviors	INST1	1		
		Contribution to the Performance	INST1	1		

Easy Access to the Goals with Repetitive Patterns	INST2	1
Contribution to the Basic Achievements	INST2	1
The Contribution of the Practices Performed with the Accompaniment of Teachers	INST2	1
Contribution to Progress	INST2	1
Left Hand Development	INST4	1
Even Development of the Fingers	INST4	1
Finger Technique	INST5	1
Acceleration of the Fingers	INST7	1
Warming up the fingers	INST7	1
Playing Skill	INST7	1
Listening Skill	INST7	1
Disciplined Playing	INST7	1
Teaching the Colorings	INST7	1
Teaching the Technical Subjects	INST7	1
Tonal Knowledge and Mastery of Tones	INST8	1
Playing Smoothly	INST8	1
Right-Hand Left-Hand Coordination	INST8	1
Fulfilling the Technical Deficiencies	INST8	1
Contribution to the Musical Competence	INST9	1
Finger Shifts	INST9	1

When Table 7 is examined, 5 categories and 53 codes in relation to theme of the "Etudes and Exercises Used in the Repertoire and their Contributions " were obtained. It was found that in relation to the category of the "Etudes Used", the instructors reported their views on the Carl Czerny etudes (10), Friedrich Burgmüller etudes (6), Henry Lemoine etudes (5), Jean-Baptiste Duvernoy etudes (7), Henri Bertini etudes (3), Moritz Moszkowski etudes (7), Frédéric Chopin etudes (9), Johann Baptist Cramer etudes (6), Muzio Clementi etudes (1), Sergey Rahmaninov etudes (1), Franz Liszt etudes (3), Ludvig Schytte etudes (1), Stephen Heller etudes (5), Carl Albert Löschnhorn etudes (1), Philip Glass etudes (1), Alexander Skryabin etudes (1), Anton Schmolle etudes (1) and Robert Van Beringen etudes; Regarding the "Exercises Used" category, Charles-Louis Hanon exercises (9), Aloys Schmitt exercises (3) and Josef Pischna exercises (1); Regarding the "Methods Used" category, Ferdinand Beyer piano method (1) and Cesi piano method (1); Regarding the "Other Etudes and Books Used" category, four-hand etudes (1), jazz etudes (1), rhythm etudes (2), multi-rhythm etudes (1), ABRSM scale and arpeggio books (1) and Köhler piano books (1); Regarding the "Contributions of the Repertoire Used" category, technical contribution (2), different contributions of each etude (2), acquiring the technical goals and behaviors (1), contribution to the performance (1), easy access to the goals with repetitive patterns (1), contribution to basic achievements (1), the contribution of the practices performed with the accompaniment of teachers (1), contribution to progress (1), left hand development (1), even development of the fingers (1), finger technique (1), acceleration of the fingers (1), warming up the fingers (1), playing skill (1), listening skill (1), disciplined playing (1), teaching colorings (1), teaching technical subjects (1), tonal knowledge and mastery of tones (1), smooth playing (1) , right-hand-left-hand coordination (1), fulfilling the technical deficiencies (1), contributing to the musical competence (1) and finger shifts (1). It is clear that the instructors included many different types of etude and exercise books in their repertoire. As the reasons for their use, eventually, it was found that these etudes and exercises contributed to the students' achievement of technical goals and behaviors and improved their performances.

Some views of the instructors on this theme are presented below.

“We use Czerny in our exercises, as the joint decision of our instructors in the department (INST1)”.

“I include the etudes of Czerny, Cramer, Chopin to help the students to improve their technique. As I said earlier, there were jazz etudes, I offer those etudes to the students that we practiced before. If their competence level is good enough, I include the etudes of syncopated rhythm. In other words, the etude and exercise literature is very comprehensive, I try give color to it as much as possible for the students. There is the Löschorhorn etude, for instance, they like the Löschorhorn etudes very much (INST6)”.

“I mean, each and every different etude develops the students' techniques, improves their playing skills, teaches them to listen attentively, not to accelerate, and to play in a more disciplined way. In other words, there are a lot of issues in the etudes (INST7)”.

Table 8 presents the categories and codes related to the theme of "the Works not Preferred While Creating the Repertoire and their Reasons", which were obtained from the views of the instructors about the works they did not choose while creating the repertoire they used in piano lessons and the reasons why they were not used.

Table 8: Views of the Instructors Regarding the Works not Be Preferred While Creating the Repertoire and their Reasons

THEME	CATERORY	CODE	INSTRUCTORS	f	
The Works that are not Preferred While Creating the Repertoire Used in the Piano Lessons and their Reasons	The Works that are not Preferred	Atonal Works	INST1, INST5, INST9	3	
		Jazz Works	INST1, INST7, INST9	3	
		12-Tone Works	INST1, INST4, INST9, INST10	4	
		Popular Music Works	INST2, INST3	2	
		Impressionist Works	INST3, INST4	2	
		Works in Serial Technique	INST4	1	
	Reasons for not Preferring the Works	The Turkish Works	INST10	1	
		Insufficient Student Level	Insufficient Student Level	INST1, INST3, INST4, INST5, INST6, INST7, INST10	7
			Insufficient Time	INST2	1
		Insufficient Piano Lesson within the Academic Year	Insufficient Piano Lesson within the Academic Year	INST2, INST3	2
			Not Included in the repertoire	INST5	1
		Difficult to Memorize	INST10	1	

When Table 8 is examined, 2 categories and 12 codes were obtained regarding the theme of the "Works not Preferred While Creating the Repertoire and their Reasons". It was found that in relation to the category of the "Works not Preferred", the instructors reported their views on the atonal works (3), jazz works (3), 12-tone works (4), popular music works (2), impressionist works (2), serial art works (1) and Turkish works (1); Regarding the category of "Reasons for Not Preferring the Works", it was found that the instructors reported their views on Insufficient Student Level (7), insufficient course duration (1), insufficient piano lesson within the academic year (2), Non-inclusion in the repertoire (1), and difficulty to memorize (1). Ultimately, it was found that the instructors wanted to include the contemporary period works in the curriculum while creating the repertoire, but they did not include them due to various reasons such as insufficient student competence level and course duration.

Some views of the instructors on this theme are presented below.

“We cannot choose the works of atonal, jazz or western contemporary periods because, as I said earlier, we have to develop a systematic way, taking into account some realities (INST1)”.

“Sometimes the students bring me such very popular music that I tell that they can practice it on their own. It is simply because I tell them that they can still practice them as a deciphering effort since they do not have much difficulty in terms of content, but I don't particularly get the students to practice them, there is no enough time anyway (INST2)”.

“These atonal music in the contemporary period, I don't prefer them very much (INST9)”.

Table 9 illustrates the categories and codes related to the theme of the "Problems Encountered in Creating the Repertoire Used in Piano Lessons" obtained from the views of the instructors regarding the problems they encountered while creating the repertoire they used in the piano lessons.

Table 9: Views of the Instructors Regarding the Problems Encountered While Creating the Repertoire

THEME	CATEGORY	CODE	INSTRUCTORS	f	
The Problems Encountered While Creating the Repertoire	Student-Related Problems	Cultural differences	INST1	1	
		Not Recognizing the Western Classical Music	INST1	1	
		Reluctance to play the Baroque Period	INST1	1	
		Student Reluctance	INST1, INST2	2	
		Reluctance to Play Music whose Melodic Structures Do Not Sound tuneful	INST1	1	
		Technical Insufficiency	INST1, INST8	2	
		Theoretical Incompetence	INST1	1	
		Lack of Piano Education Foundation	INST1, INST2, INST3, INST7, INST8	5	
		Having Learnt the Wrong Technique	INST3	1	
		Insufficient Background Education	INST3	1	
		Prejudice Against the Piano	INST3	1	
		Insufficient Past Repertoire	INST4	1	
		Lack of Essential Knowledge About Music Literature	INST4	1	
		Lack of Essential Basic Music Knowledge	INST7	1	
		Type of High School the Student Graduated from	INST8	1	
		Academic Staff-Related Problems	Disagreement between Academic Staff	INST8, INST9	2
			Lack of Educational Unity	INST8, INST9	2
		Literature-Related Problems	Difficulty in Accessing the Notes	INST6, INST7	2
			Difficulty in Accessing the Original Notes	INST7	1
Unavailability of Finger Numbers in the Musical Notes	INST7		1		
Difficulty in Choosing the Turkish Works	INST10		1		

System-Related Problems	Insufficient Course Duration	INST2, INST3, INST4, INST5, INST7, INST8	6
	Insufficient Piano Lessons within their Academic Year	INST1, INST2, INST3, INST5, INST7, INST8, INST9, INST10	8
	Fewer Fine Arts High School Graduates Due to ÖSYM Minimum Passing Score	INST1	1
	Other Course Loads of the Students	INST5	1
	Allowing more than one Student in one Course Hour	INST9	1

When Table 9 is examined, 4 categories and 26 codes were obtained regarding the theme of the "Problems Encountered While Creating the Repertoires". It was found that in relation to the category of the "Student-related Problems", the instructors reported their views on cultural difference (1), not recognizing the western classical music (1), reluctance to play the baroque period (1), students' reluctance (2), reluctance to play music whose melodic structures (1), technical insufficiency (2), theoretical incompetence (1), lack of piano education foundation (5), having learnt the wrong technique (1), insufficient background education (1), prejudice against the piano (1), insufficient past repertoire (1), lack of essential knowledge about music literature (1), lack of essential basic music knowledge (1) and type of high school the student graduated from (1); Regarding the category of "Academic Staff-Related Problems", the instructors reported their views on the disagreement between the academic staff (2) and lack of educational unity (2); Regarding the category of "Lack of Educational Unity", they reported their views on the difficulty in accessing the notes (2), difficulty in accessing the original notes (1), unavailability of finger numbers in the musical notes (1) and difficulty in choosing the Turkish works (1); Regarding the "System-Related Problems" category, it was found that the instructors reported their views on the instructors reported their views on (6), insufficient piano lessons within their academic year (8), fewer fine arts high school graduates due to ÖSYM (Measuring, Selection and Placement Center) minimum passing score (1), other course loads of the students (1) and allowing more than one student in one course hour (1). Eventually, it was revealed that the instructors encountered various problems such as lack of the essential student competence, lack of educational unity and insufficient course duration by any measure while creating the repertoire.

Some views of the instructors on this theme are presented below.

"It is difficult to access the notes of the repertoires, I mean, the original notes (INST7)".

"The course has been reduced in terms of semester duration and also in terms of course hour (INST3)".

"The level of the students, the type of high school they graduated from, their development and lack of technique; all of these impact the students, you know (INST8)".

Table 10 presents the categories and codes related to the theme of the " Circumstance Regarding the Creation of a Common Repertoire in the Music Education Departments" obtained from the views of the instructors on the creation of a common repertoire in Music Education Departments.

Table 10: Views of the Instructors on the Creation of a Common Repertoire in Music Education Departments

THEME	CATERORY	CODE	INSTRUCTORS	f
Creation of a Common Repertoire in the Music Education Departments	Creation Status	Should be Created	INST2, INST6	2
	Reasons for Creation	Should be able to Play the Piano Effectively in their Professional Lives	INST2	1
	Creation Status	Should not be Created	INST1, INST3, INST4, INST7, INST8, INST9, INST10	7

Reasons for non-Creation	Presence of Students at Different Readiness Levels at Each University	INST1, INST3, INST7, INST10	4
	Facilities of the University	INST1, INST8	2
	Insufficient Number of Academic Staff of the University	INST1	1
	Facilities of the Music Department	INST1, INST8	2
	Physical and Technical Facilities	INST1, INST8	2
	Repertoire Should be Created based on the Student Characteristics	INST3, INST7,	2
	Repertoire Should not be Delimited	INST3, INST4, INST7, INST9	4
	Not Applicable	INST3	1
	Student Should Not Be Restricted	INST3, INST4, INST7	3
	There is no Need for a Common Repertoire for Instrument Training	INST8	1

When Table 10 is examined, 4 categories and 13 codes were obtained regarding the theme of "Creation of a Common Repertoire in the Music Education Departments". It was found that in relation to the category of the "Creation Status", the instructors reported their views on the choice of 'should be formed' (2); Regarding the "Reasons for Creation" category, they reported their views on 'should be able to play the piano effectively in their professional lives' (1); Regarding the category of "Non-Creation", they reported their views on the choice of 'should not be created' (7); Regarding the "Reasons for non-Creation" category, each university had students at different levels of readiness (4), facilities of the university (2), insufficient number of academic staff of the university (1), facilities of the music department (2), physical and technical facilities (2), repertoire should be created based on the student characteristics (2), the repertoire should not be limited (4), not applicable (1), student should not be restricted (3), and there is no need for a common repertoire for instrument training (1). Finally, it was revealed that that most of the instructors thought that a common repertoire should not be established in the Music Education Departments due to reasons such as the different competence level of each student, the different facilities of the universities and not restricting the diversity.

Some views of the instructors on this theme are presented below.

"The universities' facilities, namely, how many pianos there are, how many piano teachers they have, and the extent of their technical facilities. These are all significant factors, so I don't think it's really possible to create a common repertoire anyway, and I don't think it's necessary at all either (INST1)".

"There is actually no need for a common repertoire, especially for instrument training (INST8)".

"At least, I wish that a standard repertoire could be created so that they can attain the level of playing the national anthem, it is because when they go to school, every teacher has to be able to play an anthem accompaniment or accompaniment of the national anthem, I think they should at least attain this level (INST2)".

4. Conclusion, Discussion and Recommendations

In this section, the results obtained from the study are presented and discussed, and recommendations are offered based on these results.

As far as the findings obtained from this study are concerned, it was found that the instructors considered various criteria for the students, repertoire and course while creating the repertoire they used in the piano lessons applied in the Music Education Departments. Within the scope of these criteria, it was concluded that the instructors decided on the works in the content of the repertoire, and when choosing these works, they created the repertoire by paying attention to the fact that they were within the framework of the identified curriculum, that they were

varied and included works from all periods, that they reflected important technical and musical achievements, that they were appropriate for the competence level of the students, that they were suitable for their needs, and that they were the works that the student appreciated.

This particular result is clearly consistent with the results of the study conducted by Ertem (2011) that 'one of the most effective ways acquiring behaviors and skills is the appropriate repertoire chosen by the instructor, that the repertoire should be created painstakingly in accordance with the competence level of the students, and that a repertoire should be created by ordering the techniques and behaviors to be taught'. In the study, it was revealed that the instructors took into account the course achievements while creating the repertoire and chose the works that conformed with the achievements as far as possible. It was concluded that the instructors included the technical, musical and pedagogical acquisitions related to the target behaviors and skills, took heed to the purpose and student-orientees while creating these acquisitions, and planned the courses based on these pre-determined acquisitions. This result is similar to the result of Yücetoker and Şentürk's (2016) study in which they revealed that the instructors stated the reasons for getting students to play baroque works as affective, cognitive, technical achievements and students' musicality development.

In the study, it was established that the instructors included the works requested by their students while creating the repertoire. It was found that while including the works requested by the students, they took note of the students' competence level and curriculum, and if appropriate, they met the requests of the students. It was also concluded that the reasons for including the works requested by the students were that they contributed comprehensively to the student's competence, development and motivation. The result seems to be consistent with the results of the study conducted by Güleç (2009) in which he revealed that 'the importance of motivation in instrument education is considerable and instrument trainers are an example to the students and a significant factor in motivating the students. In the study, it was established that the lecturers included works from every period and the Turkish works in the repertoire they used. The reason for the distribution of the works in the repertoire was that the students should be familiar with each period, have the necessary knowledge about the periods, adopt the playing styles of each period by performing the works of the period and eventually acquire the technical and musical achievements by recognizing the whole piano literature. This result is similar to the finding obtained from the study conducted by Özer (2021) in which it was found that it would be beneficial for the students to perform the polyphonic works that belonged to different periods. Furthermore, the result of Yılmaz's (2004) study supports the results of this study as well in which it was concluded that having examples from every period, country and composer in the piano repertoire would contribute positively to the musical progress of the students.

In the study, it was found that the instructors included various etudes and exercises from different composers. It was concluded that these etudes and exercises contributed to the technical achievements of the students, contributed to the practicing discipline and were effective in acquiring the high order behaviors. This result seems to be compatible with the results of the study conducted by Kurtuldu (2010) in which it was found that 'the effect of exercising in piano education is perceptible and it affects the technical development and quality of playing the piece in the piano education process'. Furthermore, an application for the development of technical skills in piano education, obtained from the study of Gasimova (2011) was the etudes. These etudes contributed to the development of piano technique, as well as help to acquire the ability to play with a variety and regular sound sequence, which supported the results of the study. In the study, it was found that there were numerous works that the lecturers could not choose in different genres such as atonal and impressionist popular music works from the contemporary period while creating the repertoire. It was concluded that they could not choose these works due to the insufficient competence level of the students, the high level complexity of the works and the insufficient duration of the course time. This result seems to be compatible with the results of the study conducted by Koç (2020) in which it was found that students have some readiness in the use of twentieth century works in piano education and the fact that the student did not have enough knowledge on the harmonic structure of the works, musical phrasing and form knowledge created difficulties in performing the works of twentieth century music.

In the study, it was found that the instructors encountered various problems while creating the repertoire. It was concluded that due to reasons such as the student's lack of sufficient knowledge about the music literature, technical and musical incompetence; due to the differences of opinion in the group decisions and the lack of

educational unity; due to the literature-related problems literature such as course duration and the difficulty in experienced in accessing the notes, and finally dues to the education system-related problems such as fewer fine arts high school graduates due to ÖSYM minimum passing score and other course loads of the students, numerous problems emerged. This result is similar to the result of the study conducted by Yücetoker (2019), in which he concluded that the content of the piano education and the behaviors that should be taught to the students in only two semesters of the 2018 music teaching undergraduate program were almost impossible for a one-year-long education period.

In the study, the instructors stated that the piano literature, which had a comprehensive range, should not be limited under a common repertoire. Furthermore, it was established that the instructors also stated that a common repertoire could not be used in the Music Education Departments for numerous reasons. It was concluded that the use of a common repertoire was not applicable due to reasons such as the fact that each student had different readiness levels in many ways, the unequal physical and technical facilities in the Music Education Departments of the universities, and the unequal number of academic staff. This result seems to be consistent with the result of Akbulut Demirci's (2012) study in which it was revealed that that there was no standard scale education in the Music Education Departments.

The results of the study demonstrated that there were many points to be considered while creating the piano repertoire in the Music Education Departments. In addition to this criterion, it was believed that while creating the repertoire, it was crucial that it was aimed at the students of the music teaching department, that it was within the framework of the curriculum and that the works that had a contribution were preferred. Therefore, it was believed that it would be beneficial to consider the course achievements at every stage of creating the repertoire, and to offer all the achievements according to the level of the student as far as possible. Moreover, it is suggested that the repertoire created in this framework should be improved by meeting the demands of students with certain criteria in order to get the students to love music and draw their attention.

One of the basic elements in creating the repertoire is that students should play the works from each period and be equipped with the playing skills of that period. In order to popularize the Turkish works more and to emphasize the importance of this literature, more Turkish works should be included and works from different composers should be performed. Similarly, besides performing different kinds of works, they should also diversify the etudes in which they have acquired their techniques and perform different etudes at the same level. Therefore, it is recommended to choose works from each period based on the level of the students, without exception in terms of recognizing the period.

The results of the study demonstrated that the instructors encountered numerous problems while creating the repertoire. It is commonly known that the problems were generally caused by the lack of student readiness. Therefore, the existing current system should be updated so that the students with sufficient readiness level are admitted to the Music Education Departments. Moreover, it was found that the differences of views among the instructors inhibited the procurement of educational equality among the students. Based on this particular state of affairs, it is recommended that the instructors come to agreement, identify the passing grade criteria with common decisions and ensure educational equality. In order to ensure educational equality, course which is considered to be important in the Music Education Departments, deciding on a minimum level of common criteria rather than a common repertoire is believed to be crucially significant for the graduate students to have sufficient instrument-playing skills. Therefore, it is recommended to find a middle ground with certain targets without limiting the content of the repertoire.

References

- Akbulut Demirci, Ş. (2012). Importance of scales in piano education in Turkey. *Procedia-Social and Behavioral Sciences*, (46), 2148-2155.
- Akbulut, E. (2013). The level of realization of the music education course objectives in the preschool program of the faculty of education. *Pamukkale University Journal of Social Sciences Institute*, (14), 9-16. <https://dergipark.org.tr/tr/pub/pausbed/issue/34728/383949>
- Aktürk, Z., & Yıldız, G. (2021). The Views of lecturers on the use of mandoline in individual instrument training courses in the music education departments. *Journal of Mehmet Akif Ersoy University Faculty of Education*, (60), 245-272. <https://doi.org/10.21764/maeuefd.983862>
- Alçı, S. (2017). Bağlama teaching methods in the institutions providing volunteer music education (Case of Konya Province). *Journal of Fine Arts*, 12(2), 64,82. <http://dx.doi.org/10.12739>
- Aydiner Uygun, M. (2012). Investigation of music teacher candidates' levels of learning approaches in the piano lessons by some variables. *Journal of Fine Arts*, 7(4), 375-404. <https://dergipark.org.tr/en/pub/nwsafine/issue/19894/213055>
- Baylan, B. (2021). *A multi-faceted investigation of the institutions that provide private music education affiliated to the Ministry of National Education in Istanbul* (Publication Number: 28840622) [Master Thesis, Necmettin Erbakan University]. ProQuest Dissertations Publishing.
- Bilen, S. (1995). *The effects of cooperative learning on music teaching and motivational processes*. [Unpublished PhD Thesis]. Dokuz Eylül University, İzmir.
- Büyükcengiz, H. (2019). *Investigation of the attitudes of the music education department students in the fine arts education department at the faculty education towards the choir education lesson*. [Master Thesis, Necmettin Erbakan University]. Higher Education Institution.
- Creswell, John W. (2016). *Qualitative research methods, Qualitative research and research design according to five approaches* (Third edition). (Eds. M. Bütün and S. B. Demir). Siyasal Bookstore.
- Çalık, M., & Sözbilir M. (2014). Parameters of content analysis. *Journal of Education and Science*, 39(174), 33-38. <https://doi.org/10.15390/EB.2014.3412>
- Çimen, G. & Ercan, N. (1996). *Piano album* (second edition). Arkadaş Publishing House.
- Çuhadar, C. H. (2016). Music and music education. *Cukurova University Journal of Social Sciences Institute*, 25(1), 217-230. <https://dergipark.org.tr/tr/pub/cusosbil/issue/32036/350104>
- Demirtaş, S. (2021). Investigation of the differences in the attitude levels of music teaching undergraduate program students towards the piano instrument (Pamukkale University Example). *Journal of the Fine Arts Institute*, 27(46), 184-190. <https://doi.org/10.32547/ataunigsed.880860>
- Ertem, Ş. (2011). Repertoire selection principles for intermediate piano education. *Kastamonu Journal of Education*, 19(2), 645-652. <https://dergipark.org.tr/tr/pub/kefdergi/issue/49052/625778>
- Gasmova, T. (2011). Piano learning and teaching techniques. *Journal of the Fine Arts Institute*, 0(25), 99-106. <https://dergipark.org.tr/tr/pub/ataunigsed/issue/2580/33204>
- Güleç, K. S. (2009). *The Importance of Motivation in Music Education in terms of Personal Functions of Music*. In the proceedings of the International Congress of Asian and North African Studies (pp.365-375). Atatürk Culture, Language and History High Institution, Ankara.
- Hasanova, N. K. (2021). Possibilities of music education and upbringing in the formation of personal maturity. *International Scientific Journal*, 100(8), 420-422. <https://doi.org/10.15863/TAS>
- Higher Education Institution. (2007). *Teacher training undergraduate programs of the Faculties of Education*. <http://www.yok.gov.tr/documents/10279/30217/EĞİTİM+FAKÜLTESİ%20ÖĞRETMEN+YETİŞTİRME+LİSANS+PROGRAMLARI.pdf/054dfc9e-a753-42e6-a8ad-674180d6e382>
- Kaleli, Y. S., & Barışeri, N. (2018). Examination of the technical behaviors acquired by the music teacher candidates during the piano education process. *Journal of Sakarya University Faculty of Education*, (35), 23-48. <https://dergipark.org.tr/tr/pub/sakaefd/issue/38142/303536>
- Karataş, K. O., & Şengül, C. (2018). Examination of piano lesson contents in institutions providing vocational music education in Turkey. *Journal of Atatürk University Institute of Social Sciences*, 22(1), 365-373. <https://dergipark.org.tr/tr/pub/ataunisosbil/issue/36497/414274>
- Koç, S. (2020). *Evaluation of the application of twentieth century music works in the piano education within the framework of the views of the instructors*. [Master Thesis, Dokuz Eylül University]. Higher Education Institution.
- Kudret, H., & Temiz, E. (2017). Examination of the repertoire used in individual voice training lessons. *Journal of Fine Arts*, 12(4), 299-310. <http://dx.doi.org/10.12739>
- Kurtuldu, K. (2010). The effect of exercising in piano education on the students' success. *Journal of Ahi Evran University Kirsehir Education Faculty*, 11(1), 245-256. <https://dergipark.org.tr/tr/pub/kefad/issue/59507/855667>

- Özer, N. (2021). *Identification of the effect of the polyphonic works of Russian composers on the achievement of goals in piano education*. [PhD Thesis, Bursa Uludag University]. Higher Education Institution Thesis Center.
- Patton, M. Q. (1987). *How to use qualitative methods in evaluation*. Sage Publications.
- Pirlibeylioğlu, B., & Akın Şişman, Ö. (2017). The views of piano lecturers about the piano performance of music teacher candidates. *Journal of Qualitative Research in Education*, 5(2), 28-45. <https://dergipark.org.tr/tr/pub/enad/issue/36954/354878>
- Say, A. (2011). *Music Teaching*. Music Encyclopedia Publications.
- Seyhan, Z. (2019). *Investigating the methods and techniques used by flute educators in volunteer music education* (Publication Number: 28678418) [Master Thesis, Necmettin Erbakan University]. ProQuest Dissertations Publishing.
- Sönmezöz, F. (2014). Identifying the attitudes of music teacher candidates towards the piano lesson. *Turkish Studies-International Periodical For The Languages Literature and History of Turkish*, 9(2), 1377-1388. <https://doi.org/10.7827/TurkishStudies.6459>
- Tarman, S. (2006). *Fundamentals of music education*. Music Education Publications.
- Tokatlı, B., & Mustul, Ö. (2021). Problems faced by the teachers conducting violin lessons in volunteer music education institutions. *OPUS International Journal of Society Studies*, 18(43), 6595-6634. <https://doi.org/10.26466/opus.910883>
- Tufan, E., & Güdek, B. (2008). Developing an attitude scale towards the music teaching profession. *Turkish Journal of Educational Sciences*, 6(1), 25-40. <https://dergipark.org.tr/en/pub/tebd/issue/26113/275114>
- Tufan, S. (2000). Selection and display of repertoire in piano education. *Journal of Uludag University Faculty of Education*, 13(1), 181-184. <http://hdl.handle.net/11452/17166>
- Tüzlin, N. V. (2019). *Examination of volunteer music education in terms of special talent exams of education faculties*. [Master Thesis, Pamukkale University]. Dspace@PAÜ.
- Uçan, A. (1994). *Music education: Basic concepts-principles-approaches and the situation in Turkey in the first sixty years of the Republic*. Music Encyclopedia Publications.
- Uçan, A. (1997). *Music education basic concepts-principles-approaches*. Music Encyclopedia Publications.
- Uçan, A. (2005). *Music education basic concepts-principles-approaches and the situation in Turkey*. Music Encyclopedia Publications.
- Ünal, B. (2019). *Examining the self-efficacy of the students who receive professional music education for the piano lesson in terms of different variables*. [Master Thesis, Nigde Omer Halisdemir University]. Dspace@OHU Institutional Academic Archive.
- Yıldırım, A., & Şimşek, H., (2011). *Qualitative research methods in the social sciences* (Eighth edition). Seckin Publishing.
- Yıldırım, A., & Şimşek, H., (2013). *Qualitative research methods in the social sciences* (Ninth edition). Seckin Publishing.
- Yıldırım, A., & Şimşek, H. (2021). *Qualitative research methods in the social sciences* (Twelfth edition). Seckin Publishing.
- Yılmaz, H., Sakarya, G., Gayretli, Ş., & Zahal, O. (2021). Covid-19 and online music education: A qualitative study on the views of pre-school teacher candidates. *Journal of Qualitative Research in Education*, (28), 283-299. <https://doi.org/10.14689/enad.28.12>
- Yılmaz, N. (2004). Piano education in the institutions that train music teachers in Turkey. (Oral Presentation), *International Conference on Art Education in the 21st Century*, Bulgaria: Plovdiv)
- Yücetoker, İ. (2019). *Evaluation of the piano education course according to the new teacher training undergraduate program*. In the UBAK International Academy of Sciences Congress proceedings book (pp.1085-1095).
- Yücetoker, İ., & Şentürk, N. (2016). Evaluation of the views of the piano instructors on the works of the baroque period. *Journal of Ekev Academy*, 0(68), 163-180.

Exploring the Recontextualisation of Biotechnological Knowledge in the Plant Biotechnology Course: A Bernsteinian Analysis

Mafunase Mwale¹

¹ Mukuba University

Abstract

The purpose of this study was to explore the recontextualisation of knowledge in a Plant biotechnology course. The goal of the analysis was to understand the structure of the pedagogic discourse which the biology education students were to experience during their training. The aim of any training is to prepare the students for their future profession. In this case the training is aimed at preparing the students for teaching biology in secondary schools in Zambia. Studies have indicated that, to effectively prepare the students to teach biology in secondary schools, the students need to experience a pedagogic practice characterized with both weak and strong framing and a weak classification between the discourses. The analysis will also inform the practitioners of the knowledge to be taught and how the knowledge is to be taught. The research question which guided the study was: How is knowledge recontextualised in a plant biotechnology course? Bernstein's classification, framing, recognition and realization rules were used to analyze and interpret the findings in relation to the training of the teachers. Indicators were developed to guide the analysis. An inductive approach was used to analyse the document. Atlas ti 8 was used to analyse the document. The findings indicated that the document is strongly framed in the selection and evaluation criteria, weakly classified in the relations between discourses. There was no indication of sequencing, pacing and the hierarchical rules in the document. The findings indicate a weak recognition and realisation of the text.

Keywords: Recontextualisation, Classification, Framing, Recognition, Realization, Pedagogic Discourse, Biology Education Students

1. Background to the study

The article is focused on exploring the recontextualisation of knowledge in a plant biotechnology course (BT 440 course) as one of the courses taken in the biology education programme. The plant biotechnology course is prepared for the students enrolled in the Department of Biological Sciences, yet it is also included in the biology education programme. Bernstein's sociological theory of pedagogic discourse was used to analyze the BT 440 document to understand the instructional discourse (selection, sequencing, pacing, evaluation criteria and the relations between the discourses) and the regulative discourse (hierarchical rules) embed in the pedagogic discourse. Classification and framing concepts were used to analyse the document, while recognition and

realization rules of Bernstein were used to interpret the findings in relation to the training of the biology education students.

The desire of schools is to provide equal access to school knowledge, science inclusive to all the learners. Science education is well known to have a positive impact on the development of the individual, nations and the world at large (Young, 2007). It is the desire of every nation to provide quality and relevant science education to all its learners in schools at all levels of the education. Despite this desire of nations to provide equal access to science education to all the learners in schools, not all the learners have access to school knowledge being provided.

The differential access to school knowledge by the learners has been attributed to a number of reasons. Some scholars have attributed this situation to a lack of laboratories in schools, insufficient teaching and learning resources in schools, large number of pupils in one class, lack of knowledgeable and skilled teachers in teaching sciences (Reeves, 2006). The differential access to school knowledge has been a concern for nations, Zambia inclusive. Scholars such as Ensor (2004) and Morais (2002) have attributed the differential access to school knowledge to the characteristics of the pedagogic discourse being transmitted. They have also indicated that, successful teacher training is a necessary condition for teachers to successfully teach in schools. Prospective teachers need to experience a pedagogic discourse which enables all the learners to have access to the school knowledge during their training. Therefore, a need that educators be knowledgeable of the characteristics of the pedagogic practice which support the acquisition of school knowledge by all the learners. Educators also need to be aware of the characteristics of the pedagogic discourse which they are teaching.

In this article I have focused on analysing the BT 440 course as one of the courses taught to the prospective biology education students to understand the pedagogic discourse intended for the prospective biology teachers. Bernstein's classification and framing concepts were used to analyze the BT 440 course.

2. Problem statement

This study was focused on the Plant biotechnology course taken by the biology teacher education students enrolled in the Department of Mathematics and Science Education. The biology education students take some of the courses developed in the Department of Biological Sciences. One of the courses is plant biotechnology (BT 440). The plant biotechnology course developed in the Department of Biological Sciences context has to be recontextualised for relevance to biology teacher education students who are being prepared to teach the 5090 biology syllabus developed by the Curriculum Development Centre (CDC).

The plant biotechnology course is designed for the students enrolled in the Department of Biological Sciences to meet the objectives of the programmes in the Department of Biological Sciences. The plant biotechnology course is not designed for the students enrolled in the Department of Mathematics and Science Education. The lecturers in the Department of Mathematics and Science Education are not involved in designing the plant biotechnology course. The lecturers in the Department of Biological Sciences are not involved when developing a programme for the biology education students. Yet the plant biotechnology course designed for the students in the Department of Biological Sciences is included in the programme for the biology education students who are enrolled in the Department of Mathematics and Science Education. In this situation it is likely that the plant biotechnology course may not help to meet the objectives, which is to teach the 5090 biology syllabus to all the learners regardless of their social background.

3. Purpose of the study

The purpose of the present study was to explore the recontextualisation of biotechnological knowledge in a plant biotechnology course using the classification and the framing concepts of Bernstein. The aim of the analysis is to understand the characteristics of the plant biotechnology course being taught to the biology education students who are training to teach biology in secondary schools in Zambia. This analysis will inform the content to be transmitted (instructional discourse) and how the content is to be transmitted (regulative discourse).

4. Research question

The research question which guided the study was:
How is knowledge recontextualised in a plant biotechnology course?

5. Literature review

The concepts in this study are pedagogic device, pedagogic discourse, recontextualisation, classification and framing, vertical and horizontal knowledge structure of Bernstein.

The pedagogic device is a theory by which knowledge is produced and converted for pedagogic communication. It has three fields which are the production field, recontextualisation field and the reproduction field. Knowledge production takes place in the production field. The produced knowledge is then selected, delocated, that is taking a discourse from its original site and moving it to a new different site (a pedagogic site) in which a gap is created and this leads to the transformation of knowledge. The knowledge is transformed through the recontextualisation process.

The Pedagogic discourse embeds two discourses which are the: Instruction Discourse (ID) and the Regulative Discourse (RD). Bernstein's work enables one to track the knowledge from the disciplinary field to the curriculum and the pedagogic practices.

At the Copperbelt University, the biotechnology knowledge which gets recontextualised into the biology curriculum is produced in the production field. The curriculum developers who are the lecturers in the Department of Biological Sciences select and relocate the biotechnology knowledge into a new context which is the plant biotechnology course in this case. The development of the plant biotechnology course takes place in the Pedagogic Recontextualisation Field (PRF).

The developed course is implemented both in the Department of the Biological Sciences and in the Department of the Mathematics and Science Education. The curriculum implementation takes place in the reproduction field. At the Copperbelt University, the pedagogic recontextualisation takes place in the Department of Biological Sciences and in the Department of Mathematics and Science Education. In the Department of Biological Sciences, the BT 440 was developed and taught, and in the Department of Mathematics and Science Education the BT 440 course was taught to prepare the biology education students to teach the 5090 biology syllabus.

The 5090 biology syllabus is an official text produced by the Curriculum Development Centre (CDC). A number of agents were involved in the production of the 5090 biology syllabus. The productions of the 5090 biology syllabus involve the recontextualising processes. The production of the 5090 biology syllabus takes place in the Official Recontextualisation Field (ORF). Figure 1 shows the conceptual framework which guided the study.

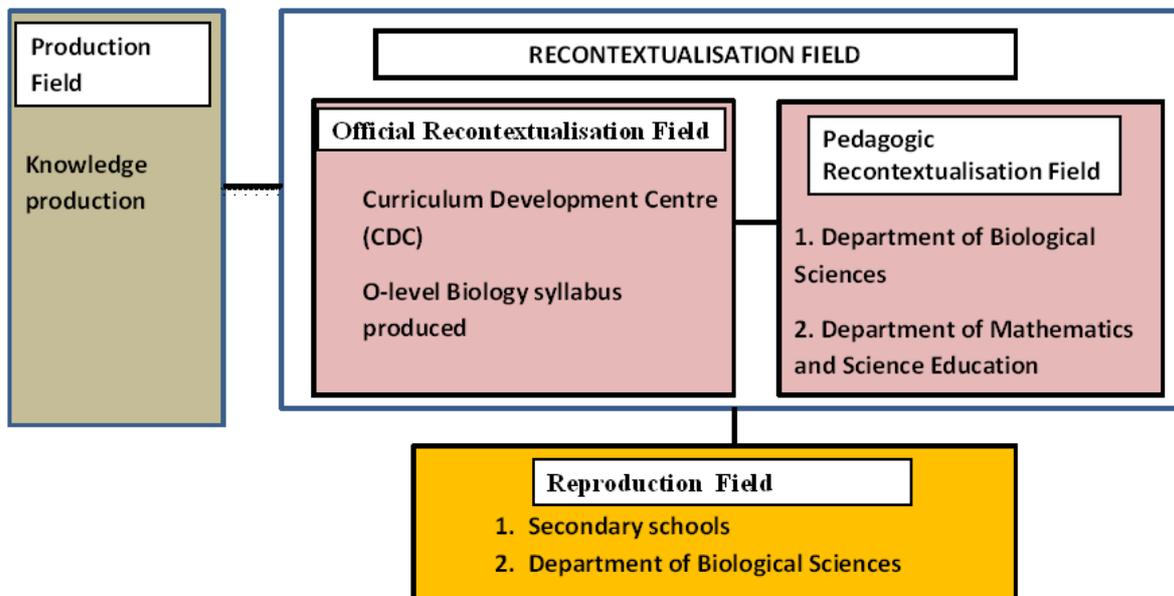


Figure 1: Conceptual Framework for the study

As shown in Figure 1, in this study, I mainly, drew on the pedagogic recontextualisation field which is concerned with the plant biotechnology course produced in the Department of Biological Sciences.

Recontextualisation is a process which involves the selection, sequencing, pacing and evaluation of the knowledge/discourse to produce a new discourse now called a pedagogic discourse. The production and the implementation of the pedagogic discourse involve a number of agents and agencies working at the different levels of the education system. Bernstein has called these levels as the fields of the pedagogic device which are: production field, recontextualisation field and the reproduction field. In each of the fields, there are agents working in the production, recontextualisation and reproduction of the knowledge. When Knowledge is produced in the production field, the knowledge produced is recontextualised in the recontextualisation field to become school knowledge. The three fields of the pedagogic device are hierarchically related in that recontextualisation can only take place if there has been knowledge production, and reproduction can only take place if there has been the production.

Each of the field has a number of agents working to produce the desired knowledge. Agents working in the production field are the intellectuals in universities and in research centres. It is from the field of the production that knowledge is selected to be recontextualised in the recontextualisation field (Hoadley, 2006; Luckett, 2009). In the context of this research this would mean that the production fields include the departments in the university in which knowledge is produced such as the Department of Biological Sciences (DoBS), Department of Chemistry (DoC) and the Department of Physics (DoP) and the other departments from which knowledge is selected to make a biotechnology course such as the plant biotechnology at Copperbelt University and the University of Zambia. Knowledge is also produced at the research centres such as the National Institute of Scientific Research (NISIR) and mount makulu research centre as some of the sites from which biotechnological knowledge is produced in Zambia. The knowledge produced in the production field is self-explanatory and gets transformed as it gets recontextualised. The agents involved in the production of knowledge do not have time or resources to convert or translate the new knowledge into a form accessible to the non-specialists. Hence the translation of the produced knowledge into a form accessible by non-specialists is done in the recontextualisation field of the pedagogic device. It is in the recontextualisation field that this study is positioned.

The recontextualisation field is mainly concerned with the production of the pedagogic discourse. It is the recontextualisation field which link the field of research (production field) to the field of practice (reproduction field). Hence an understanding of the recontextualisation will inform how the field of research relates with the field of practice (Luckett, 2009). The agents in the recontextualisation field are able to pedagogies the knowledge

produced in the production field (Singh, 2002). Recontextualisation rules play a major role in having the specialist knowledge accessible to the learners.

The selection of the knowledge from the production field is guided by the rules of recontextualisation. It is through the recontextualisation rules that a discourse is moved from its production context/site to another context. When the discourse has been moved from the original context to new different sites where it gets recontextualised it will no longer resemble the original discourse because it has been converted or pedagogised into a pedagogic discourse/pedagogic communication (Diehl, Lindgren, & Leffler, 2015; Wheelahan, 2005; Wheeler, 2009). This clearly tells that as knowledge is recontextualised, it is transformed and no longer looks like the original knowledge.

Recontextualisation (the making of school knowledge, for example, the curriculum knowledge) is a key element of Bernstein's theory of pedagogic device (Weelie & Boersma, 2017; Hewllet, 2013; Wierdsma, 2012). Recontextualisation produces power relations in the process of selecting, de-locating and re-locating a discourse. It is through recontextualisation that a discourse or part of a discourse is selected, de-located and re-located in a new different context with other discourses. Therefore, recontextualisation refers to how knowledge produced at one site is recontextualised by curriculum designers at an educational institution such as Copperbelt University and reproduced by teachers/ trainers when they interact with learners. During this process of recontextualisation, knowledge is transformed (Bertram, 2008; Bibila, 2016; Reeves, 2006). Recontextualisation is more concerned with the transformation of knowledge when it is moved from one context to a new different context.

The way knowledge has been recontextualised, determine the recognition and realisation rules of the school knowledge/formal knowledge as a vertical discourse (Singh, 2002; Singh, Thomas, & Harris, 2013). It is important that educators understand how the curriculum knowledge is sequenced and organized which could be achieved by analyzing the pedagogic discourse. Analysis of the curriculum, in this case a course will inform the pedagogic practices and the content to be transmitted and acquired. The focus of this study is to understand the pedagogic practices and the content of the biotechnology course.

A number of scholars such as Morais, Neves and Afonso, (2005), Ensor, (2004), Morais, (2002); Jónsdóttir and Macdonald (2008) and Bertram, (2012), have used Bernstein's classification and framing concepts to characterise the pedagogic discourse and to show the variations in the pedagogic discourses.

Morais and Mirrinda (1996) wanted to understand the framing of the evaluation criteria as a condition for success in science classes. Studies have indicated that one of the ways in which students could be helped to succeed in learning the sciences is to explicate the evaluation criteria. The evaluation criteria is one of the characteristics of the instructional discourse (ID) embedded in the regulative discourse (RD) which always dominates over the instructional discourse. In most cases, the regulative discourse is not explicated. The regulative discourse is always transmitted through the instructional discourse. The data in this study was collected through the questionnaire, interviews and marked answer scripts of the learners.

The findings indicated a weak framing in the evaluation criteria (instructional discourse) and a strong framing in the hierarchical rules (regulative discourse). This finding does not support the acquisition of the text in the teaching and learning. For successful teaching and learning the evaluation criteria need to be explicated. The evaluation criteria were also focused on in a study carried out by Morais, Neves and Afonso (2005).

In their study, Morais, et al., (2005), they were focused on understanding teacher training processes and teacher's competencies in primary schools. The study was aimed at understanding how teachers were trained to effectively teach sciences in primary schools. The training was focused on explicating the evaluation criteria in the training of the teachers. The study used an action research methodology. The data was collected using the interview method, and observation method. The findings indicated that the teachers were effectively prepared to teach sciences in primary schools as they gained both the realisation and the recognition rules. Therefore explicating the evaluation criteria is a necessary condition in both teacher training programmes and in the teaching and learning context. Therefore, it is important that educators are aware of the characteristics of the pedagogic discourse being

implemented and be aware of the characteristics of the pedagogic practices which support the learning of all the learners. An example is the study carried out by Morais, (2002).

In the case of Moaris (2002), he wanted to understand the characteristics of pedagogic practices which support the acquisition of scientific knowledge by all the learners. Document analysis and observation method were used to collect the data. The findings indicated that for successful learning, the pedagogic discourse must be characterised by a weak framing in the pacing and hierarchical rules and the framing has to be strong in the selection, sequencing and in the evaluation criteria of the knowledge. The classification between discourses (inter-disciplinary, intra-disciplinary and inter-discursive relations) and between spaces has to be weak. Morais (2002) also notes that, though a weak pacing is a necessary condition for successful learning, governments have not easily accepted this due to a high cost which would be experienced if the teaching and learning time is increased. He therefore advised that, if the cost of the education is to be reduced, there is a need to weaken the classification between discourses and between spaces as these are some of the ways of explicating the evaluation criteria. He further notes that, the evaluation criteria can also be explicated through correcting the answers of the learners.

A similar study was carried out by Jónsdóttir and Macdonald (2008) to understand the instructional discourse and the regulative discourse in the teaching and learning of innovative education in Iceland. The study was carried out at Ingunnarskali school in Iceland. The study involved four teachers who were teaching innovative education at the time of the study. The data was collected using field observation and interviews. The findings indicated that the framing and the classification were a mixed of weak and strong framing (F+-) and weak and strong classification (C+-) in the teaching and learning of innovative education. Such a study helped to understand the characteristics of the pedagogic discourse being implemented.

Classification and framing have also been used by Ensor (2004) to characterize the pedagogic discourse being transmitted in a mathematics teacher training programme to effectively prepare the students for their profession as teachers. The data was collected through the interview method, document analysis and observation method. The analysis of the mathematics course revealed that the hierarchical rules, pacing, and sequencing were weakly framed and that the framing was strong in the evaluation criteria and in the selection of knowledge.

Ensor (2004) concluded that when the framing is weak in the selection and in the evaluation criteria, the realization and recognition of the text are going to be weak. For the recognition and realization to be strong, the framing of the evaluation criteria, selection and sequencing needs to be strong.

Therefore, this study aims to understand the strength of the realisation and the recognition rules indicated in the plant biotechnology course.

6. Methodology

A qualitative approach was used in this study. Document analysis was used as a method to collect the data. Ethical clearance was not necessary since the study did not involve human beings. Permission to analyze the document was got through the head of the Department of Biological Sciences. This course was analyzed because it is one of the courses taken by the biology education students in the Department of Biological Sciences. Indicators were first developed to guide the analysis. See Appendix 1. The document was inductively coded using Atlas ti 8.

The BT 440 document was analysed to characterise the pedagogic practices indicated in the document. As earlier indicated, the pedagogic practice embeds the instructional and the regulative discourse. Classification and framing concepts of Basil Bernstein have been used to characterise the pedagogic practices indicated in the BT 440 course. The instructional discourse was analysed in terms of the control relations between agents which are the discursive rules (selection, sequencing, pacing and evaluation criteria) and in terms of the relation between discourses (inter-disciplinary, intra-disciplinary and inter-discourse). Framing was analysed in terms of the extent to which the transmitter, in this case the lecturer and the learner had the control in the teaching and learning process in the document. The analysis was focused on understanding the degree of control given to the lecturer and the learner in terms of what should be learnt, how it should be learnt, how long it should be learnt and how it should be

assessed. The relations between discourses were analysed in terms of the strength of insulation between the discourses. Classification was used to analyse the relations between the discourses. Classification analysis helped to determine the integration of knowledge between discourses. That is between the topics, between disciplines and between everyday knowledge and school knowledge.

A sentence was analysed for the extent to which the teacher or the learner had the control in the teaching and learning process.

The codes, categories and the theme which emerged from the analysis of the BT 440 are shown in Table 1. The categories which emerged from the analysis of the codes are: BT 440 content, evaluation criteria, pacing of knowledge, reading materials and relations between discourses.

7. Findings

Table 1 has presented the findings of the analysis of the plant biotechnology course

Table 1: Codes, Categories and theme on the analysis of the Plant biotechnology course

CODES	CATEGORIES	THEME
○ Analysis of plastid genomes		INSTRUCTIONAL DISCOURSE
○ Biodiversity and conservation.		
○ Bioinformatics		
○ Bioinformatics:		
○ Biosafety		
○ Cloning		
○ Crop improvement		
○ DNA extraction methods;		
○ Final examination 60%		
○ Gene silencing and micro RNAs;		
○ Generation of mutants;		
○ Intellectual property rights;		
○ Legal aspects of GMOs;		
○ Molecular biology software		
○ monitoring systems for GMOs;		
○ Mutant screening;		
○ Patenting of biological material		
○ Physiology and pathology		
○ Plant culture		
○ Plant data bases		
○ Plant molecular biology:		
○ Plant viral vectors.		
○ Production of therapeutics in plants; reporter genes; g		
○ Proteins systems		
○ Public perception of plant biotechnology,		
○ Reporter genes		
○ RNA extraction methods;		

○ Swiss-prot; clustal Programs.		
○ Test 20%	EVALUATION CRITERIA	
○ Assignments 5%		
○ Lab course 15%		
○ Lab work time	PACING	
○ Lecture time		
○ Journals	READING MATERIAL	
○ Text books		
○ Characteristics of plant biotechnology	RELATIONS BETWEEN DISCOURSES	
○ Interactions between disciplines		

7.1. Evaluation criteria

In terms of the evaluation criteria, the BT 440 course is explicit in the assessments to be done as indicated in the course. The continuous assessments weigh 40% to the final examination grade. Continuous assessment was based on Lab course 15%, Tests 20% and Assignments 5%, the sessional examination weighted 60%. In addition the BT 440 course has indicated the course objectives to be achieved in the teaching and learning. An explicit indication of the assessments to be done and the course objectives to be achieved indicate a strong framing (F+) in the evaluation criteria.

7.2. Reading materials

The reading materials are the materials to be used by the lecturers and the learners in the teaching and learning of the course.

Analysis of the BT 440 documents revealed that, journals and text books were used as the sources of information in the teaching and learning process. The analysis revealed that text books and journals were indicated as some of the materials to be used in the teaching and learning of the course. The specific text books indicated in the BT 440 course are:

- Slater, A., Scott, N.W., & Fowler, M.R. (2008). *Plant Biotechnology: the genetic manipulation of plants*. Oxford University Press
- Halford, N.G. (2006). *Plant Biotechnology: current and future applications of genetically modified crop* Wiley.

The journals indicated in the BT 440 course are:

- Plant Biotechnology Journal: aims at publishing original research and reviews in the fields of applied plant science with an emphasis on molecular plant sciences and their application through plant biotechnology, published by Wiley- Blackwell.
- Plant Biotechnology Reports: Peer-reviewed journal covering aspects of plant biochemistry, biotechnology and plant science; published by Springer.

7.3. Pacing of knowledge

Analysis of the BT 440 course document revealed that, the course has indicated the number of lectures to be done in a week as the course indicate that, "Time allocation: 4 hours of lectures per week; 1-week lab course at the end of each term." There was no indication of how long should be taken to teach a topic and how long should be taken to teach all the topics in the course. Therefore, framing of the pacing is not indicated (F0).

7.4. Relations between discourses

The relations between discourses or the integration of knowledge in the BT 440 course was analysed using the classification concept of Bernstein. An external language of description was developed to help to read the data. Indicators were developed to guide the coding of the document.

Analysis of the relations in the discourses found that, discourses are related in terms of the Inter-disciplinary relation (relations between the disciplines), Intra-disciplinary relation (relation between the topics) and Inter-discursive relation (the relationship between school knowledge and everyday knowledge). Hence classification was weak (C-) in inter-disciplinary relations, intra-disciplinary relations and in the inter-discursive relations.

In terms of knowledge selection and sequencing of the knowledge, the course clearly indicated the knowledge to be taught, but does not indicate the order in which the topics are to be taught. This is an indication of strong framing (F+) in terms of knowledge selection.

7.5. Instructional discourse as the main theme

The instructional discourse emerged as the main theme in the analysis of the BT 440 document. The categories which are included in the theme are: BT 440, evaluation criteria, pacing of knowledge and relations between discourses. There was no indication of the regulative discourse in the analysis of the BT 440 course.

7.6. Summary on the analysis of BT 440 course

In summary, the findings on the analysis of the BT 440 course document has shown that, framing was strong (F+) in the selection of knowledge and in the evaluation criteria of the knowledge. There was no indication of the sequence, pacing and the hierarchical rules in the document and no sentence or statement was coded for the hierarchical rules. The classification was weak (C-) in the inter-disciplinary relation, intra-discipline relation, inter-discursive relation. The document also indicated that journals and text books were the sources of knowledge which were indicated as sources of knowledge in the teaching and learning of the course.

8. Discussion

The findings were discussed in relation to teacher training. For the prospective biology student teachers to be effectively prepared to teach secondary school biology in Zambia, a number of studies (Ensor, 2015; Larsen, 2013; Bertram, 2008; Hoadley, 2005b; Morais et al., 1992; Morais et al., 2005) have indicated that, they must experience a pedagogic practice with a weak framing in the pacing and hierarchical rules. The weak framing in the pacing and in the hierarchical rules should be accompanied by a strong framing in the selection, sequencing and evaluation criteria of the knowledge and that the classification between the discourses (inter-disciplinary, intra-disciplinary and inter-discursive) must be weak.

The analysis of the BT 440 course indicated a strong framing in the and in the evaluation criteria. Though there was no explicit indication of the sequencing, pacing, and the hierarchical rules in the document, it is most likely that the sequencing and pacing is likely to be done by the lecturers who are knowledgeable of the content to be taught and therefore have an understanding of what was to be taught and how it is to be taught. Bernstein himself indicated that the regulative discourse dominates over the hierarchical rules, therefore the hierarchical rules though not explicitly indicated in the document, they are strongly framed since they dominate over the instructional discourse.

The focus on the instructional discourse in the BT 440 indicates that the course is more focused on teaching the content to the prospective biology teachers. The goal of teaching biotechnology to the prospective teachers was to provide students with the relevant knowledge required by the prospective biology teachers. If the students are to be prepared for their teaching profession, they need to acquire a vertical discourse which is context independent (Millar, 2014; Player-Koro, 2011).

The classification is weak in the inter-disciplinary relationships, intra-disciplinary relationship is strong, indicating that there is a strong relationship between the topics, hence the topics are weakly classified (C-), inter-discursive relationship is weak, indicating that, there is a relationship. A classification is one way in which the pacing is weakened, hence a condition for successful learning of all the learners. There is also a need for explicating the evaluation criteria for successful learning (Ensor, 2004).

From the discussion, a strong framing in the hierarchical rule and in the pacing is likely going to lead to the students to acquire a weak recognition and realization rules in the teaching and learning. This will lead to students not being effectively prepared to teach biology to all the learners in secondary schools. Therefore, a need that the BT 440 course is revised so that it will be framed and classified in line with the conditions which enable a successful training of the biology education students.

8.1. Summary and conclusion

The analysis revealed that, framing was strong (F+) in the selection, sequencing, hierarchical rule and in the evaluation criteria. The framing was weak (F-) in the pacing of the knowledge. In the relations between the discourses, the classifications were weak (C-) in the inter-disciplinary, intra-disciplinary and in the inter-discursive relations. The review of the related literature showed that, if teachers are to be prepared to teach all the learners regardless of the children coming from the different social class families, there is a need for a pedagogic practice which is strongly framed in the selection, sequencing and evaluation criteria and that the framing should be weak in the pacing and in the hierarchical rule and that there is need for a weak classification (C-) between the discourses

Hence the practices indicated in the BT 440 has shown that while the selection, sequencing, evaluation criteria have the required framing to learn the content and be able to teach all the learners, a weak framing in the hierarchical rule and pacing is required if the teachers are to be successfully trained to teach biology to all the learners in secondary schools in Zambia. This is not the case in the BT 440 course. Studies have further indicated that, a weak framing (F-) in the hierarchical rule could be attained by using the teaching and learning approaches in which the learners are active.

Hence for the prospective teachers to be successfully trained to teach biology to all the learners in secondary schools, the framing should be strong in the selection, sequencing, and evaluation criteria and should be weak in the hierarchical rule and in the pacing.

Acknowledgments

I would like to acknowledge the ministry of Higher Education in Zambia for funding this study. The funds enabled me to carry out this study.

References

- Bertram, C. A. (2008b). Curriculum recontextualisation: a case study of the South African high school History curriculum. *Faculty of Education, PhD Thesis*, 414 pages. Retrieved from sed.ukzn.ac.za/Libraries/Carol_Bertram/CarolBertramPhD.sflb.ashx
- Bibila, S. (2016). *Qualifications, knowledge and curriculum divisions: an analysis of the Welsh Baccalaureate Advanced Diploma*. Cardiff University. Retrieved from <http://orca.cf.ac.uk/id/eprint/101016>
- Diehl, M., Lindgren, J., & Leffler, E. (2015). The Impact of Classification and Framing in Entrepreneurial Education : Field Observations in Two Lower Secondary Schools. *Universal Journal of Education Research*, 3(8), 489–501. <https://doi.org/10.13189/ujer.2015.030803>
- Ensor, P. (2004). Modalities of teacher education discourse and the education of effective practitioners. *Pedagogy, Culture and Society*, 12(2), 217–232. <https://doi.org/10.1080/14681360400200197>
- Hoadley, U. (2006). The reproduction of social class differences through pedagogy: A model for the investigation of pedagogic variation. In *Consortium for Research on Schooling, April 2006* (pp. 1–31).

- Luckett, K. (2009). The relationship between knowledge structure and curriculum : a case study in sociology, *34*(4), 441–453. <https://doi.org/10.1080/03075070902772018>
- Millar, R. (2014). Designing a Science Curriculum Fit for Purpose. *School Science Review*, *95*(352), 15–20.
- Morais, A., Fontinhas, F., & Neves, I. (1992). Recognition and Realisation Rules in Acquiring School Science??the contribution of pedagogy and social background of students. *British Journal of Sociology of Education*, *13*(2), 247–270. <https://doi.org/10.1080/0142569920130206>
- Morais, A. M., Neves, I. P., & Afonso, M. (2005). Teacher training processes and teachers' competence - A sociological study in the primary school. *Teaching and Teacher Education*, *21*(4), 415–437. <https://doi.org/10.1016/j.tate.2005.01.010>
- Player-Koro, C. (2011). Marginalising students' understanding of mathematics through performative priorities: A Bernsteinian perspective. *Ethnography and Education*, *6*(3), 325–340. <https://doi.org/10.1080/17457823.2011.610583>
- Reeves, C. A. (2006). *THE EFFECT OF "OPPORTUNITY-TO-LEARN" AND CLASSROOM PEDAGOGY ON MATHEMATICS ACHIEVEMENT IN SCHOOLS SERVING LOW SOCIO-ECONOMIC STATUS COMMUNITIES IN THE CAPE PENINSULA*. Faculty of Humanities, PhD thesis, 448 pages, University of Cape Town.
- Singh, P. (2002). Pedagogising Knowledge : Bernstein ' s Theory of the Pedagogic Device. *British Journal of Sociology of Education*, *23*(4), 572–582. <https://doi.org/10.1080/0142569022000038422>
- Singh, P., Thomas, S., & Harris, J. (2013). Recontextualising policy discourses: A Bernsteinian perspective on policy interpretation, translation, enactment. *Journal of Education Policy*, *28*(4), 465–480. <https://doi.org/10.1080/02680939.2013.770554>
- Wheelahan, L. (2005). The pedagogic device : the relevance of Bernstein ' s analysis for VET. *Vocational Learning: Transitions, Interrelationships, Partnerships and Sustainable Futures : Proceedings of the 13th Annual International Conference on Post-Compulsory Education and Training, Gold Coast, Queensland, 5-7 December, 2005*, (May), 1–8.
- Wheeler, J. (2009). Knowledge Transfer. *Canadian Journal of Dental Hygiene*, *43*(3), 122. <https://doi.org/10.4018/978-1-59904-931-1.ch094>
- Young, M., & Muller, J. (2013). On the powers of powerful knowledge, *1*(3), 229–250. <https://doi.org/10.1002/rev3.3017>

Appendix 1: Indicators for analysing the Plant biotechnology course

Grading scales used to analyse the Plant biotechnology course (BT 440) The document was analysed for the discursive rules (Selection, sequencing, pacing and criteria) and for the discursive relations (Inter-disciplinary, intra-disciplinary and inter-discursive).

Indicators for the discursive rules and discursive relations were developed to guide the analysis of the document. The indicators developed to guide the analysis are shown in the tables.

Discursive rule SELECTION

To what extent does the teacher and the learner have control in the selection of instructional knowledge? The extent to which the teacher and the learner have the control in the selection of knowledge was determined by the extent to which a sentence or a statement indicated the content or the knowledge to be taught.

F++	F+	F-	F--
Teachers have the control in the selection of the knowledge taught, learners don't decided on what to learn.	Teachers have the control in the selection of the knowledge taught, though in some instances, learners decide on the knowledge to learn.	Learners have control in the selection of the knowledge taught, though in some instances, teachers decide on the knowledge taught and learnt.	Learners have more control in the selection of the knowledge taught. Teachers don't decide on the knowledge to be taught.
The sentence/statement clearly indicate the knowledge to be taught and learnt	The sentence/statement indicate the knowledge to be taught, but leaves room for learners to make additions	The sentence/statement make suggestions of the knowledge to be taught,	The sentence/statement does not indicate the knowledge to be taught

Discursive rule SEQUENCING

To what extent does the teacher and the learner have control in the sequencing of the instructional knowledge? The extent to which the teacher and the learner have the control in the sequencing of the knowledge was determined by the extent to which a sentence or a statement indicated the sequence in which the topics were to be taught.

F++	F+	F-	F--
Teachers have the control in the sequencing of the knowledge.	Teachers have the control in the sequencing of the topics, though learners sometimes also control the sequencing of the knowledge.	Learners have control in the sequencing of the knowledge though the teachers sometimes control the sequencing of the knowledge/topics	Learners have more control in the sequencing of the knowledge/topics.
The sentence/statement clearly indicate the sequence in which the topics are to be taught	The sentence/statement suggests the sequence in which the topics are to be taught, but leaves room for learners to make additions	The sentence/statement does not indicate the sequence in which the topics are to be taught, but gives a suggestion.	The sentence/statement does not indicate the sequence in which the topics are to be taught.

Discursive rule PACING

To what extent does the teacher and the learner have control in the pacing of the learning? The extent to which the teacher and the learner have the control in the pacing of the learning was determined by the extent to which a sentence or a statement indicated the time required to teach and learn the topic.

F++	F+	F-	F--
Teachers have the control in the pacing of the learning.	Teachers have the control in the pacing of the learning, though learners sometimes also controlled the pace at which the knowledge was taught.	Learners have the control in the pacing of the learning, though teachers sometimes also controlled the pace at which the knowledge was taught.	Learners have the control in the pacing of the learning.
The sentence/statement clearly indicate the time at which the topics are to be taught	The sentence/statement suggests the time at which the topics are to be taught, but leaves room for learners to decide on the time required for learning	The sentence/statement suggests the time at which a topic has to be taught.	The sentence/statement does not indicate the time required for teaching and learning.

Discursive rule EVALUATION CRITERIA

To what extent does the document explicate the criteria? The extent to which the document explicate the criteria is determined by the extent to which a sentence or a statement explicitly indicate the concepts to be learnt and assessed.

F++	F+	F-	F--
Evaluative criteria very clear and explicit	Evaluative criteria clear and explicit	Evaluative criteria mostly not explicit	Evaluative criteria not explicit
The sentence/statement clearly indicates the evaluative rules by clearly indicating the concepts to be taught and learnt.	The sentence/statement indicates the evaluative rules by clearly indicating the concepts to be taught and learnt.	The sentence/statement mostly does not indicate the evaluative rules. The concepts to be learnt are suggested.	The sentence/statement does not indicate the evaluative rules. The concepts to be learnt are not indicated in the sentence.

Discursive relations

Inter-discipline relations (Between disciplines)

The extent to which a sentence/statement indicates an integration of knowledge from other disciplines

C++	C+	C-	C--
No indication of the knowledge from other disciplines	Very little indication of the knowledge from other disciplines	little indication of the knowledge from other disciplines	A very clear indication of the knowledge from other disciplines
There is no indication of the knowledge from other disciplines in the sentence/statement	There is little indication of the knowledge from other disciplines in the sentence/statement	There is clear indication of the knowledge from other disciplines in the sentence/statement	There is a very clear indication of the knowledge from other disciplines in the sentence/statement

Inter-discursive relations (Between school knowledge and everyday knowledge)

The extent to which a sentence/statement indicates everyday knowledge

C++	C+	C-	C--
No indication of everyday knowledge in a sentence/statement	Very little indication of everyday knowledge in a sentence/statement	little indication of everyday knowledge in a sentence/statement	Very clear indication of everyday knowledge in a sentence/statement
There is no indication of everyday knowledge in the sentence/statement	There is little indication of everyday knowledge in the sentence/statement	There is clear indication of everyday knowledge in the sentence/statement	There is a very clear indication of everyday knowledge in the sentence/statement

Intra-disciplinary relations (Between the topics)

The extent to which a topic/sentence/statement indicate a relation in knowledge between the topics

C++	C+	C-	C--
No relationship indicated	Very weak relationship indicated	Weak relationship indicated	Very strong relationship indicated
There is no indication of a relationship in knowledge in the topics in a sentence/statement	There is a very weak indication of a relationship in knowledge in the topics in a sentence/statement	There is a weak indication of a relationship in knowledge in the topics in a sentence/statement	There is a very strong indication of a relationship in knowledge in the topics in a sentence/statement



Use of Informal Learning Environments in Turkish Language Teaching

Rasit Koc¹

¹ Faculty of Education, The University of Van Yüzüncü Yıl, Van, Türkiye (Turkey)

Correspondence: Raşit Koç, Faculty of Education, The University of Van Yüzüncü Yıl, Kampus/Van, 65100 Türkiye. Tel:0905052542112. E-mail: rasitkoc@yyu.edu.tr

Abstract

Teaching is divided into two as formal and informal teaching. Formal education is based on the teaching of planned, programmed and predetermined contents. This type of education, training usually take place in educational institutions, which are called schools. In this respect, formal education is divided into primary, secondary, high school and higher education. Apart from the formal education carried out in planned, programmed environments, there are also informal learning and informal education environments that we can consider as lifelong learning. Outside of school, spontaneous learning without any plan, program, realization is defined as informal learning. Informal learning can take place in almost any environment. This type of learning is one whose place and time are not defined. Learning in informal settings is an important stage in the acquisition of mother tongue. A newly born baby learns to speak the language spoken in the family environment into which he was born. When he starts talking, his family and inner circle are his learning and growing environment. Until the school age, this environment shapes it in terms of language acquisition as well as in every field. Thus, the individual performs language acquisition as used in his immediate environment. Informal learning until the school age takes place in a formal way with the school. Our study is important in terms of showing how informal learning environments can be used to carry out an effective Turkish teaching. The method of the research is literature review. At the end of the study, visual and audio tools such as radio, television, cinema, social media; places such as schools, libraries, houses; It has been concluded that activities such as conferences, theater, poetry recitals and discussions are informal environments that can be used in Turkish teaching.

Keywords: Turkish Teaching, Informal Learning, Mother Tongue, Basic Language Skills

1. Introduction

"Informal learning", which is met with terms such as "street learning", "lifelong learning", "non-formal learning", "informal learning", "home education" in the literature, which we can define as lifelong learning and learning everywhere in our language, is a concept that is increasingly widely used in recent years and draws attention as a form of education and training. In Europe and America, some families prefer to teach their children at home instead of sending them to school for various reasons. These families either give their children direct education or try to educate their children with the help of trainers called tutors and mentors.

Formal learning is limited to time, to place. There are situations such as measuring formal learning knowledge and skills and eventually issuing certificates or documents. In informal learning, as in formal learning, there is no predetermined place, time and program for education, and there is always the opportunity and opportunity for education and training everywhere. During the school years, students spend 86.7% of their time outside the classroom. This shows us the importance of using environments other than the traditional classroom environment to support learning (Denson, Stallworth, Hailey and Householder, 2015, pp. 11). In order to make use of our free time in our daily lives, when we are with our family, when we work in the workplace, we do a wide variety of activities. These activities give us informal learning opportunities. For this reason, the flexibility provided by informal learning is expressed as "Anywhere, any time". Although there is a lot of research on formal learning, studies on informal learning have recently started to increase. (Kyyny, 2012, p. 27).

Babies begin to learn their mother tongue informally. Especially when we think in terms of Turkish education, mother tongue learning starts directly in informal ways. Children acquire language through their mothers, caregivers or those who take care of them from the immediate environment. Children who learn emotions, cultural elements, attitudes and behaviors through those who communicate with them learn cultural values and behaviors along with language. Thanks to close environment interactions, children not only learn the language, but also develop their mental skills and learn letters and numbers in a simple way. Apart from these, they acquire some emotions, game rules, some literary products, especially oral literature, and moral values in informal ways.

At the school age, the knowledge, achievements and experiences previously acquired in informal ways are combined with new ones and especially literacy; New knowledge such as mathematics and scientific subjects is gained through formal education. However, it is a known fact that schools and similar institutions alone cannot be enough. For this reason, even while students are receiving formal education in educational institutions, they continue to learn new information in informal ways and will continue after they finish school.

When we look at the subject in terms of mother tongue education or Turkish teaching, language acquisition that starts with listening and speaking continues with reading and writing. Although reading and writing skills are usually acquired through education in the school environment, there are a few families who do not send their children to school and teach them to read and write themselves. The knowledge and skills gained in school make listening, speaking and using written expression more effective.

Games and group discussions at school increase interaction and make learning permanent. However, in the context of the application and implementation of the learned knowledge, out-of-school learning environments should also be put to work and the learning should support each other. Informal language learning/teaching is a form of learning that can be an alternative to programmed in-school language teaching, but in general, language skills can be continuously supported according to the needs of daily life (Maden and Dincel, 2015, p. 33).

This is where informal learning environments come in. According to Wellington (1990), informal learning is sometimes more effective than formal learning in acquiring new behaviors and acquiring new behaviors to the individual. When we look at the studies on the use of informal learning environments in our country and the publications on this subject, we see that such learning is generally publications on science and nature lessons. In these studies, school trips to different places and the knowledge gained in these places are emphasized. These are the articles or project studies describing the visits to museums, visits to various archaeological sites for purposes or visits to factories or workshops in order to increase skills and knowledge in professional subjects and the positive effects of the observations and examinations made in these places on the learning of the students (Yavuz and Kızılcı, 2012, p. 22). The curriculum that has changed in recent years also emphasizes the importance of out-of-school learning activities in courses that are intertwined with daily life such as science (Ay, Anagün and Melis, 2015, p. 108).

Apart from science and nature courses, we see that there are studies on the use of informal learning environments in the teaching of mathematics courses. These studies aim to increase the individual's mathematical knowledge as a result of the experiences that naturally arise in the life of the individual through informal learning environments and to increase the ability to bring solutions to the problems that the individual may encounter in his / her daily

life. In this context, we can give examples of "Pi day" activities as an example of informal mathematics education studies (Kurtuluş, 2015, p. 108).

Today, the boundaries of the informal learning environment have expanded to virtual spaces such as mass media, internet search, and social media. Learning environments attract the attention of students through informal environments, visual presentations and technology in terms of including social, cultural and physical environments (Özcan, 2021, p. 57).

1.1. Aim of the Study

The aim of our study is to indicate how informal learning environments can be used in terms of Turkish education and why they are important. What are the informal learning environments that can be used in Turkish language teaching and how these environments can be used in teaching the mother tongue. The answer to their questions is the purpose of our work.

2. Method

The method of the research is literature review. In the literature review as a research model, previously published books, articles, theses, conference proceedings, historical records and reports related to the research subject are searched, found, examined and thus information that will contribute to the study is tried to be obtained. The purpose of literature review can be briefly stated as obtaining the information needed for research (Demirci, 2014, p. 74). In this study, the studies on informal learning in different disciplines will be examined and how informal learning paths can be used in which language skills areas in teaching Turkish will be discussed.

3. Discussion

In this section, it will be discussed where the out-of-school informal learning environments that can be used in Turkish language teaching are and what kind of contributions these environments can make to students in the acquisition of their mother tongue.

Informal educational environments that can be used in Turkish language teaching:

3.1 Libraries

Libraries, are the places where students spend the most time outside of school. Or so it should be. After school lessons, it is necessary to direct students to libraries for different purposes such as studying and researching. Libraries are places that offer unique opportunities both in terms of acquiring the skills that should be possessed due to the learning areas within the Turkish course and the characteristics of these learning areas and seeing whether these skills are possessed or not.

Namely; The student who goes to the library to study should have the ability to read quietly. Apart from this, he should be able to speak in a way that he can explain his problem by using appropriate address sentences to get help from the officials in finding a book he is looking for. In addition, they should be able to take notes on the topics they consider important during the reading. For these reasons, we should remember the libraries that are not frequented by students today and we should give our students the habit of doing research and studying in the library.

Provide dates defining the periods of recruitment and follow-up and the primary sources of the potential subjects, where appropriate. If these dates differ by group, provide the values for each group.

3.2 Cinema, Theater, Concert, Conference and Similar Events

Venues such as cinema and theater and activities such as concerts and conferences have an important place in the development of students' listening skills. A student who goes to the cinema, theater or concert must have developed aesthetic listening skills. In such activities, it is possible to see whether students can apply these rules as well as knowing the listening rules. Such venues and activities benefit students in two ways. The first is the opportunity to transform what they learn in school into gains by having the opportunity to apply the techniques and strategies they have learned with listening skills. The second benefit is that by observing their surroundings, they see people around them who may or may not have the ability to listen effectively and understand why having good listening skills is an important achievement in society. Thus, they can motivate themselves on how to overcome their lack of listening skills.

Apart from cinema, theater and concerts, conferences, meetings and similar activities that we have mentioned not only provide the ability to listen to the effect, but also contribute to the development of students' ability to speak in front of the public and to take notes in terms of writing education. In other words, a student who attends a conference, panel, open session and forum as a listener will learn to take note of the points he considers important from the speeches and will develop his language skills positively by learning to ask questions and enter into discussions by speaking within the rules of courtesy when necessary. On the other hand, in such an event, those who do not listen to the speaker and speak among themselves; When he sees those who speak without speaking, those who interrupt the speaker improperly, he will have the opportunity to learn how important all these rules and practices are in communication between people by drawing positive conclusions from negative examples.

3.3 Places such as Home, Workplace, Hospital, Market, Street and Public Transport

Home and family environment are important informal learning environments. As we mentioned at the beginning of our study, our first learning begins informally in the family environment. The place where our students have the opportunity to show what they learn in school by transforming it into practice and behavior is primarily the family environment. Oral and written language skills and listening skills are both acquired and exhibited within the home. The language to be used in relations with family elders at home, learning to listen to each other within the framework of respect and kindness is very important in terms of Turkish learning and education and personality development. In this environment, grandparents, especially parents, are role models of children. Mutual communication and interaction affect language skills positively or negatively. Apart from these, family activities such as the organization of book reading hours, conversations with family members, fairy tales and story tellings of adults will make positive contributions to the education of students. Again, the fact that a student who has just learned to read and write prepares a shopping list with his mother, notes a recipe, writes various reminder notes will support the development of freelance writing skills.

In addition to these, the speeches that the students will make in order to meet their needs in the places they are in for different reasons and needs, and listening to what is spoken will make positive contributions to their language skills. Asking for an address on the street, directions, asking for a change of money while shopping in the market, asking or telling the place to get off on public transport, being able to tell a doctor in the hospital about his illness or illness in full, all this is based on the use of language skills and putting into practice what is taught formally in school. For this reason, teachers should explain to their students that such activities are learnings and observe their students outdoors whenever they have the opportunity.

3.4 Written Tools such as Newspapers, Magazines, Posters, Advertisements, Graffiti

Media tools where information and news flow are present in daily life are also informal learning environments. The articles, comments and titles in such media organs affect the reading skills of the students and the articles, announcements and the language they use in these publications or in different places can be used as tools for the development of critical reading skills in the students.

Students can not only read media materials written in different types and for different purposes or the writings they see on workplace signs, flyers and boards around them, but also determine the spelling inaccuracies in such writings according to their characteristics, the language they use according to their writing purposes and style. By carrying such examples to the classroom environment, they can discuss among themselves how the wrongs they have identified should be true. Thus, by developing their reading, comprehension and writing skills practically, they have the opportunity to reinforce language skills such as critical reading and critical writing.

For this reason, teachers should encourage students to pay attention to the use of written language in places they see around them, such as posters, advertisements, announcements and workplace names, and to think about how the correct spelling should be by discussing the spelling and expression errors they detect in the classroom environment or among themselves. On the other hand, identifying the perspectives that differ from author to author and from newspaper to newspaper in the news and comments in newspapers and magazines contributes to both media literacy and critical reading education for students. In addition, the fact that there are different approaches and forms of expression allows a clear understanding of the approach and interpretation style that we call "style" in an article.

3.5 Video and Audio Media such as Television, Radio, Internet, Social Media

Apart from the printed media tools, audio and video media and information tools are the most actively used environments for informal learning today. According to Bilici (2017), media comes to mind first when it comes to informal learning, because media is the most effective and widespread informal learning tool. In addition to listening to, watching and speaking activities through television and radio channels, especially on the Internet and social media, students use social media and sharing sites as a means of preparing and publishing information through computers and the Internet. A different and special language is used in these media organs and environments. In this virtual environment where there are many users and information is constantly flowing, students do not respect every share, pay attention to the expressions and shares used in this social media where the language is used in different ways, and do not respect every information will improve students' critical thinking and critical reading.

In a study conducted in Romania, 92% of respondents stated that the shows on television have an informal content that presents false values (Cuc, 2014, p. 71). This result shows us the importance of media literacy and critical listening and reading in terms of Turkish language teaching. In addition, the positive use of social media and the internet will help students to share information through the groups they have established among themselves and to learn the subjects they cannot learn in the school environment. Apart from this, they will have the opportunity to meet people from different cultures and languages through social media and to improve themselves by finding an interactive learning acculturation environment and opportunity.

Apart from the Internet, computers and social media, television and radio are also informal learning environments for students. Research shows that activities such as social media communications, online games, media content have many positive effects and benefits in language learning and acquisition (e.g., Lai & Gong, 2015, Lee, 2019; Lee & Dressman, 2018; Rodgers & Webb, 2011; Sockett, 2014; Sundqvist&Wikstrom, 2015; quoted, Carraro, K. & Trinder, R. 2021, pp. 41).

Since television is a visual and auditory media tool, it will contribute to the development of listening and watching skills and radio will contribute to the development of listening skills. Education, cultural programs, news bulletins, discussion programs on different topics broadcast on television will contribute to the development of students' mental skills, and speakers who will be given examples of the beautiful use of Turkish will have a positive effect on the language development of students. On the other hand, it should be ensured that students develop an awareness in the face of negative situations such as different expressions used on television and radios and the use of Turkish outside the rules. By noting the speech mistakes they witness, they should be encouraged to discuss such uses with friends in a family setting or in class. Thus, how the right verbal communication should be can be taught practically. In addition, the subtitle mistakes made from time to time on televisions, the detection of speech errors made by the presenters or guests in live broadcasts will give students the opportunity to carry the theoretical

information they have learned through in-class activities out of school and will be useful in terms of transferring the information obtained to life.

4. Result

Learning, whether through formal or informal ways, leads to positive behavioral changes in the person and to have knowledge in various areas. Societies transfer their material and spiritual assets to new generations through educational tools. The diversity of educational tools and environments is important for the consolidation and permanence of learning. The diversity of educational tools and environments is important for the consolidation and permanence of learning. In this sense, the systematic teaching contents given in educational institutions should be supported by extracurricular activities, trips, observations and workshop activities. Extracurricular activities that can be applied in almost every field can also be done to contribute to Turkish learning. Informal learning environments are environments where students feel more comfortable than formal learning environments. Informal learning environments can provide different learning possibilities that are not available in traditional learning environments. The individual in informal learning environments can adapt to different learning styles, obtain information according to his own learning speed, and spend more time with objects that are of interest to him in the learning environment (Ertaş Kılıç and Şen, 2014, p. 14).

The field knowledge and achievements that are laid in formal education institutions should be carried to out-of-school / extracurricular learning environments and the transfer of information to life should be ensured. For this reason, it is very important to consider informal learning environments as learning environments in order to provide students especially at middle and high school levels with a love and awareness of Turkish and to ensure that they have a critical perspective. It should be ensured that students apply the information they learn in schools in life, use the knowledge they have previously acquired in the face of the events and situations they encounter, or reach the right information by comparing their achievements with the situations they encounter in life.

For this purpose, Turkish teachers should use every learning environment to transform the grammar rules from knowledge to skills, including the four basic language skills of speaking, listening, reading, writing and the rules of the Turkish language. By doing so, they can enable students to transfer the information they have learned to everyday life and turn what they have learned into a lasting behavior. For this, parents should encourage students for extracurricular activities and direct them to activities where they can put their knowledge and skills into practice. Thus, the family and the environment, which are the stakeholders of education, can be included in the education process and an effective mother tongue teaching can be realized.

References

- Ay, Y., Anagün, S. Ş. and Demir, M. S. (2015) Opinions of classroom teacher candidates about out-of-school learning in science teaching. *International Periodical for the Languages, Literature and History of Turkish or Turkic Volume 10/15* Fall 2015, p. 103-118 DOI Number: <http://dx.doi.org/10.7827/TurkishStudies.8702>.
- Bilici, I. E. (2017) Informal learning, the phenomenon of children and crime. *Selcuk University, Journal of Institute of Social Sciences 2017; (37)*: pp. 21-31.
- Carraro, K. & Trinder, R. (2021). Technology in formal and informal learning environments: Student perspectives. *Global Journal of Foreign Language Teaching. 11(1)*, 39–50. <https://doi.org/10.18844/gjflt.v11i1.5219>
- Cuc, M. C. (2014) The influence of media on formal and informal education. *Procedia - Social and Behavioral Sciences 143* (2014). pp. 68 – 72.
- Demirci, A. (2014) Literature review. In Arı, Y. & Kaya, I. (Eds.), *Geography research methods* (pp. 73-107). Geographers Association Publications.
- Denson, C., Stallworth, C. A., Hailey, C., and Householder, D. L. (2015) Benefits of informal learning environments: A focused examination of STEM-based program environments. *Journal of STEM Education Volume 16*, Issue 1, January- April 2015, pp. 11-15.
- Ertaş Kılıç, H. and Şen, A. I. (2014) The effect of out-of-school learning activities and critical thinking physics teaching on student attitudes. *Education and Science volume 39*, issue 176, pp. 13-30.
- Kurtuluş, A. (2015) Informal learning environment Pi day: Example of a big risk day competition. *Journal of Education and Training Research, February 2015, volume: 4*, issue 1, pp. 107-116.

- Kyyny, J. A. (2012) *The role of English language music in informal learning of English*. Master's thesis. University of Jyväskylä, Finland.
- Maden, S. and Dincel, O (2015) The effect of informal learning approach on Turkish vocabulary teaching as a foreign language. *Journal of National Education*, Issue, 206, Spring 2015, pp. 30-50.
- Özcan, C. (2021) Determination of the trends of international papers according to some parameters: Informal learning. *Journal of Muallim Rifat Faculty of Education (MREFD)* 3(2), 56-67.
- Wellington, J. (1990). Formal and informal learning in science: The role of the interactive science centres. *Physics Education*, 25, 247-252.
- Yavuz, M. and Balkan Kızılcı, F. (2012) Science and technology teachers' opinions regarding the usage of zoos in science teaching. *The Online Journal of New Horizons in Education* Volume 2, Issue 4, pp. 21-33.

A Teaching Note on Negligence: *Palsgraf* Revisited

Richard J. Hunter, Jr.¹, John H. Shannon², Henry J. Amoroso³

¹ Seton Hall University/University of Tulsa

^{2,3} Seton Hall University, Faculty of Legal Studies

Abstract

The case of *Palsgraf v. Long Island Railroad* (1928) provides an opportunity to engage students in a study of the cause of action termed negligence. The article explores issues relating to proof of negligence, defenses to negligence, and more directly, to the views of two American jurists, Benjamin Cardozo and William Andrews, relating to the issues of duty and causation—critical elements of proof.

Keywords: Negligence, Respondent Superior, Duty of Due Care, Causation, Compensatory Damages, Punitive Damages, Superseding Cause, Contributory and Comparative Negligence



A view of the East New York station of the Long Island Railroad (LIRR), seen in 2008

1. Introduction

The classic (and fun!) case of *Palsgraf v. Long Island Railroad* (1928) provides an excellent opportunity to engage students in studying the cause of action termed *negligence*. In doing so, a professor will be able to explore with his or her students the following topics (and perhaps others):

1. The *prima facie* elements of proof of negligence: duty, breach, causation, and damages;
2. Issues relating to contributory and comparative negligence;
3. Issues relating to the application of the doctrines of *Respondeat Superior* and *negligence per se*;
4. Issues relating to the application of the doctrine of assumption of risk or other potential defenses;

5. Issues relating to the divergent views of Judges Cardozo and Andrews of the New York Court of Appeals concerning the elements of duty and causation;
6. Issues relating to issues of foreseeability, “direct connection,” “zone of danger,” and intervening and superseding causes.

As an introduction to the study of *Palsgraf*, Dratler (2009, p. 23) wrote:

“As lawyers, judges and law professors reach retirement age, there is little that we remember of our first-year course in torts. The cases we studied, our professors’ personalities—even the psychological trauma of the first pointed Socratic question directed at us—all are lost in the mists of time.”

“Yet some things remain. Among them are the name and facts of *Palsgraf v. Long Island Railroad Co.*, one of the most memorable cases in all of American common law. A great judge, Benjamin Cardozo, penned the majority opinion.”

2. The Basic Facts (New York Times, August 25, 1924)

On Sunday, August 24, 1924, Helen Palsgraf, a 40-year-old single mother and part time janitor and housekeeper, was taking her two daughters, Elizabeth and Lillian, aged 15 and 12, to Rockaway Beach for a late summer outing. Having already paid the necessary fare, they were standing on the platform at the East New York station of the Long Island Railroad or LIRR on Atlantic Avenue in Brooklyn, when a train, which was not their train, pulled into the station. As the train began to pull out of the station, and with the doors not fully closed, two men raced to get onto the train, and one apparently made it without incident. The second man, carrying a package, “leapt aboard” with the help of a platform guard pushing him from behind, and a member of the train’s crew pulling him into the car.

In the process, the man lost control of the package, which dropped on to the platform, exploding. The package apparently contained fireworks. What seems unclear is whether the force of the explosion or the panic the other passenger’s experienced on the platform caused a tall, coin-operated scale to topple onto Mrs. Palsgraf. No one suffered injuries severe enough to spend the night in the hospital, although several people, Mrs. Palsgraf among them, were listed as injured in the official reports.

Recorded contemporaneous accounts and the testimony of witnesses at trial described the man as “Italian” in appearance. Speculation at the time indicated that the package containing the fireworks was being transported for use at an “Italian-American” celebration of some kind. Interestingly, no effort was apparently made to identify the owner of the package containing the fireworks. Mrs. Palsgraf’s injury was chronicled in a story which appeared in *The New York Times* (1924) as “shock.” [The under headline to “BOMB BLAST INJURES 13 IN STATION CROWD” stated “Package of Fireworks Explodes in Beach-Bound Throng at East New York. A PANIC AS TRAIN IS SHAKEN, Windows are smashed on Jamaica Express and Part of Platform Is Ripped Up.”]

Mrs. Palsgraf also suffered some minor bruising. The actual distance between Mrs. Palsgraf and the explosion was never made clear in the transcript of the trial or in the opinions of the judges who ruled on the case; however, the distance from the explosion to the scale was described in the *Times* as “more than ten feet away” or about 3 metres. Witnesses testified that Mrs. Palsgraf was about 6 feet away. Several days after the incident, Mrs. Palsgraf developed a “bad stammer,” and her doctor testified at trial that the condition was caused by the trauma of the events Mrs. Palsgraf had experienced at East New York station. She had not yet recovered from the stammer when the case came to court. Healy (2021) wrote: “The accident left her with a nervous disorder and a speech impediment that eventually rendered her completely mute. Today she might be diagnosed with PTSD.”

The trial court awarded Mrs. Palsgraf \$6,000 in compensatory damages, which was reversed on appeal. In addition, Mrs. Palsgraf, whose annual salary was \$416 per year. was ordered to reimburse the Railroad \$559.60 for its costs and fees (Healy, 2021). The decision of the appellate court is one of the most parsed and debated decisions in the annals of tort law—more specifically negligence actions—in American legal history. In addition, the fact that two

very prominent American jurists squared off in their views on the nature of proof required in negligent actions relating to *duty* and *causation* have made the case a favorite for both professors and their students alike.

2.1. Points of Disagreement

A requirement under the law of torts is that the consequences of a party's negligence must be reasonably foreseeable to result in injury to a plaintiff. The website US Legal (2023) notes: "In such cases, the resultant injury was reasonably predictable by a person of ordinary intelligence and circumspection as in the case of throwing a heavy object at someone." Relying on a theory of *foreseeability*, Judge Cardozo (later United States Supreme Court Justice) found that neither the platform guard nor the conductor owed Mrs. Palsgraf a *legal duty of care* because the injury to Mrs. Palsgraf was not foreseeable (see MacDougall, 2019). Judge Cardozo wrote that "[t]he conduct of the defendant's guard, if a wrong in its relation to the holder of the package, was not a wrong in its relation to the plaintiff, standing far away. Relatively to her it was not negligence at all. Nothing in the situation gave notice that the falling package had in it the potency of peril to persons thus removed."

Later in his opinion, Judge Cardozo wrote "[o]ne who seeks redress at law does not make out a cause of action by showing without more that there has been damage to his person. If the harm was not willful, he must show that the act as to him had possibilities of danger so many and apparent as to entitle him to be protected against the doing of it though the harm was unintended." Cardozo suggested that because the contents of the package were unknown, it was not foreseeable that someone on the other end of the platform would be injured. "In other words, the railroad owed the plaintiff no duty unless its employee could reasonably foresee the danger to her and so was culpable in failing to avoid it" (Dratler, 2009; see also Kelly, 2020).

Interestingly, the dissent in *Palsgraf* penned by Judge William Andrews has also been instrumental in shaping the law of torts in the United States relating to the issue of causation—although Judge Andrews' view did not prevail in the *Palsgraf* case itself. Judge Andrews would have found for Mrs. Palsgraf on the basis of an explication of the doctrine of proximate cause leading from a negligent act to its "direct connection" to the injury of a plaintiff. Andrews first concluded that the platform guard and conductor were clearly negligent. On that point, few could disagree. On that basis and applying a "direct connection" test, Judge Andrews reasoned that the defendant owed a duty to plaintiffs "even if he be outside what would generally be thought the danger zone"—i.e., in Cardozo's terms, outside of the range of foreseeability.

In commenting on the views of Judge Andrews, Cunningham (2010, p. 696) wrote:

"Judge William Andrews' dissent took a broader view of duty: "Every one owes to the world at large the duty of refraining from those acts that may unreasonably threaten the safety of others." Negligence is not defined by duty, but as an unreasonable act affecting rights, not confined to those who might probably be hurt. If one person is justified to complain, anyone injured may assert liability, Andrews reasoned. For Andrews, the only limitation on liability for negligence is absence of proximate cause, based on "practical politics," not philosophy or logic. Though it must be "something without which the event would not happen," proximate cause means "that, because of convenience, of public policy, of a rough sense of justice, the law arbitrarily declines to trace a series of events beyond a certain point." Andrews posed a series of questions to decide whether an action is the proximate cause of injury and found all supported requisite causation in *Palsgraf*."

Would adoption of the Andrews's view potentially lead to unlimited liability for a defendant? Nelson (2018, pp. 287-288) suggests that:

"The limit was the doctrine of proximate cause. By virtue of this doctrine, negligence did not invariably give rise to a cause of action for damages, unless the damages were "so connected with the negligence that the latter may be said to be the proximate cause of the former."

"By "proximate" Andrews meant: "that, because of convenience, of public policy, of a rough sense of justice, the law arbitrarily declines to trace a series of events beyond a certain point," not as a matter of "logic" but of "practical politics." In determining proximate cause, it was necessary to ask questions such as "whether there was a natural and continuous sequence between cause and effect," whether "the one

was a substantial factor in producing the other,” and whether there was “a *direct connection* between them, without too many intervening causes” (emphasis added).

In another sense, Wright (2003) notes:

“Judge Andrews’ dissent took a much broader view of the relevant rights and duties. Rather than viewing negligent conduct as a morally wrongful “affront to personality” that exists only for those whose interests the defendant knew or should have known would be exposed to unreasonable risk by her conduct, he viewed it as a legally wrongful failure to comply with the standards of reasonable care established to protect the interests of each person in society, which results in a legal wrong to anyone whose interests are harmed by such legally wrongful conduct....”

In short, “This legal discussion in *Palsgraf* has been instrumental in shaping personal injury law” (website of Crews & Pasquera, P.A., 2017). In a sense, the development of tort law in the United States reflects not the absolute policy victory of either of these judges, but rather a subtle *blending* of their views: While essential to the analysis of liability lies in determining whether the defendant could have reasonably foreseen an injury to the plaintiff, defendants in tort actions are held liable for the direct consequences of their negligence as long as the harm is foreseeable. Although not raised as an issue in *Palsgraf*, under traditional tort analysis, liability may also be judged from the perspectives of a superseding cause, which may cut off the liability of the original tortfeasor.

2.2. Superseding Causes

Interestingly, the confluence of the doctrines of foreseeability, proximate cause, and the “direct connection” test with issues relating to a superseding cause has yielded some interesting conclusions. Sperino (2020, p. 321) writes: “Typically, when tort law expresses concerns about directness or superseding cause, it is discussing an action taken by one actor and then a second action taken by a legally separate actor.”

Tikriti (2023) sites examples of superseding causes that are usually deemed unforeseeable, and thus would potentially *cut off* the liability of the original negligent tortfeasor:

- “acts of God (i.e., earthquakes, “floods, hurricanes, tornadoes, wildfires, and drought” (Binder, 1996, p. 2; see also Fasoyiro, 2009);
- criminal acts of third persons (i.e., burglary) (*James v. Meow Media, Inc.*, 2000); and
- intentional torts of third persons (i.e., assault, battery, false imprisonment) (see Goldberg & Zipursky, 2010).”

Section 443 of the Restatement (Second) of Torts (quoted in McDougall, 2019, p. 17) states the following concerning the issue of a criminal act or an intentional tort acting as a superseding cause:

“The act of a third person in committing an intentional tort or crime is a superseding cause of harm to another resulting therefrom, although the actor’s negligent conduct created a situation which afforded an opportunity to the third person to commit such a tort or crime, unless the actor at the time of his negligent conduct realized or should have realized the likelihood that such a situation might be created, and that a third person might avail himself of the opportunity to commit such a tort or crime.”

On the other hand, examples of superseding causes that are typically deemed foreseeable such that the defendant *does not escape liability* include:

- “harm caused by rescuers (i.e., firefighters or other people that come to the injured person’s aid) (White, 2002; Hunter, Shannon & Amoroso, 2018, p. 113; Ray, 2020);
- ordinary negligence of health care providers (i.e., doctors and nurses) (Hodge, 2021); and
- disease or subsequent injury that is sustained as a result of the injured person being in a weakened condition (Hunter, Shannon & Amoroso, 2018, p. 113).”

3. Proving Negligence

Proof of negligence is the basis for holding a person legally responsible for an act or omission resulting in harm (see LawSuit Legal.com). The legal system of the United States provides a construct for what are generally known

as "The Five Elements of Negligence" which include: duty, breach of duty, causation (causation in fact and proximate cause), and damages (see Owen, 2007).

The website of LawSuit Legal (2023) notes: "In its most general sense, the law of negligence obligates people to behave in a manner within acceptable standards of safe conduct and a reasonable manner." The Shouse Law Group (2022) noted that "The reasonable person standard works by comparing an allegedly negligent party's conduct to what a **hypothetical reasonable person would have done in the same or similar circumstances**. If a defendant fails to act like an objectively reasonable person would have, it can amount to a **breach of his or her duty of care** towards ... the victim and plaintiff."

However, the requirements for proving negligence may vary depending on factual circumstances and on statutes enacted by individual states which may define specific duties not necessarily recognized in other states (Hunter, 2005).

The general standard against which the conduct of an individual will be judged is that of a "reasonable man" or "reasonable person." Interestingly, as Ahmed (2021) writes:

"The general standard of the reasonable person cannot be applied to children, the elderly, persons with physical disabilities, persons with mental impairments or experts. Therefore, depending on the subjective attributes of the person against whom the standard is being applied, the standard may have to be adjusted accordingly. The general standard of the reasonable person would be raised when dealing with experts, for instance, and lowered when dealing with persons with physical disabilities."

In many states, professionals may be held to a higher standard of care than "ordinary" persons because of their education, background, training, or experience (Boothe-Perry, 2012). Professionals, such as medical personnel, accountants, engineers, attorneys, etc., have a duty to maintain their professional credentials and keep abreast of significant scientific or other information as it become available. A failure to provide the care expected or required of the professional can lead to a claim of professional negligence. Negligent acts committed by professionals are sometimes referred to as "malpractice" (see Bal, 2009; Hunter & Shannon, 2022).

The website of American Board of Professional Liability Attorneys (ABPLA) (2023) notes that "Medical malpractice can take many forms. Here are some examples of medical negligence that might lead to a lawsuit:

- Failure to diagnose or misdiagnosis
- Misreading or ignoring laboratory results
- Unnecessary surgery
- Surgical errors or wrong site surgery
- Improper medication or dosage
- Poor follow-up or aftercare
- Premature discharge
- Disregarding or not taking appropriate patient history
- Failure to order proper testing
- Failure to recognize symptoms" (see Bal, 2009; Sage, Boothman, & Gallagher, 2020).

Mallen (1979, p. 205) writes:

"... clearly within the definition of legal malpractice is the negligent rendition of professional services. The courts agree that "legal malpractice" encompasses liability for negligence.' That wrong is sometimes alternatively stated in terms of an implied contract to exercise ordinary skill and knowledge, corresponding to the standard of care used to evaluate competence." To that extent the attorney's liability is comparable to that of other professionals."

Likewise, the ABPLA notes that "attorney malpractice can take many forms. Here are some examples of legal negligence [malpractice] that might lead to a lawsuit:

- Conflicts of interest
- Errors or omissions resulting in dismissal of a client's case
- Missing Statute of Limitations
- Misappropriation of client funds
- Billing fraud
- Poorly written legal documents
- Breach of fiduciary duty
- Breach of attorney-client privilege
- Abandonment of a client's matter or lack of due diligence
- Exerting undue influence adverse to the client's interest
- Improper legal advice
- Malicious or frivolous litigation
- Excessive litigation at the client's expense
- Obstruction of justice
- Presenting false evidence
- Malfeasance or dishonesty” (see Munneke & Davis, 1998).

3.1. *The Elements of Proof of Negligence*

3.1.1. Duty

An important consideration in proving negligence is determining whether the defendant owed a legal duty to the injured party. Owen (2007, p. 1674) wrote: “Duty, obligation of one person to another, flows from millennia of social customs, philosophy, and religion. Serving as the glue of society, duty is the thread that binds humans to one another in community.”

The dictates, customs, and usages of many relationships require individuals to act in a certain prescribed manner. In order to establish negligence, the first question which must be answered is whether the defendant has a duty to exercise reasonable care under the circumstances involved. Owen (2007, p. 1677) asserts:

“While the standard of care must be adjusted for certain special relationships, as classically was the norm, modern negligence law imposes a duty on most persons in most situations to act with reasonable care, often referred to as “due care,” for the safety of others and themselves. A person who acts carelessly—unreasonably, without due care—breaches the duty of care, and such conduct is characterized as “negligent.”

In general, the question, “does a party owe a duty of due care?”, is a “judge question” to be decided as a matter of law for the court and not as a question of fact for a jury (Goldberg & Zipursky, 2010). If a duty of due or reasonable care is established, the first element of proof of negligence is established.

3.1.2. Breach of Duty

The element of duty involves a determination of “reasonable” or “ordinary” care.” Failing to exercise reasonable or ordinary care in fulfilling a duty is a breach of duty. Owen (2007, p. 1677) writes:

“To assess what type and amount of care is reasonable in particular circumstances, negligence law turns to the standard of “a reasonable prudent person” and asks how such a person would behave in a particular situation, in pursuing his or her own objectives, to avoid harming others in the process. By defining the standard of proper behavior in terms of a mythical prudent person, the law thus sets up an objective standard against which to measure a defendant’s conduct.”

The element of duty has two aspects. Either the defendant did something that was unreasonable under the circumstances, or the defendant failed to do something which would have been reasonable under the circumstances (generally Moughalian, 2021). This is normally a decision for the “trier of fact”—normally a jury—unless the

judge has assumed this role in what is sometimes called a “bench trial” in which there is no jury. Duty may often be determined according to an analysis of specific responsibilities required of a defendant (e.g., Hunter, 2008).

3.1.3. Causation (see Stanford Encyclopedia of Philosophy)

Causation may be viewed from two perspectives: cause in fact and proximate cause. Proof of negligence requires that the alleged negligent act or acts caused injury to the plaintiff. Courts typically employ a broad “*but for*” standard to establish causation, inquiring whether the harm suffered would have happened “*but for*” the actions of the defendant.

In addition, in order to determine the legal responsibility of the defendant, the plaintiff must establish the most direct cause of an injury. A plaintiff must prove that the actions of the defendant are the closest (“proximate”) cause of the injuries sustained by the plaintiff (see McDowell, 1985; Knobe & Shapiro, 2021).

Issues relating to causation have vexed American courts for decades. As Dean Prosser noted in 1950: “Proximate cause remains a tangle and a jungle, a palace of mirrors and a maze ... [It] covers a multitude of sins ... [and] is a complex term of highly uncertain meaning under which other rules, doctrines and reasons lie buried” (cited in Meadow, 2000, pp. 5-6).

However, Professor Geistfeld (2021, p. 420) comments: “The element of proximate cause then provides a case-specific requirement that the plaintiff’s injury must be within a general category of foreseeable harms encompassed by both the tort duty and its breach—a necessary predicate for liability. The prima facie case accordingly requires the foreseeability test to establish proximate cause for the breach of a duty that is limited to the risks of foreseeable harm.”

3.1.4. Damages

Finally, a finding of negligence will require that a “legal harm” has occurred. As noted by Owen (2007, pp. 1685-1686):

“The last element of a negligence claim is harm, the damage a plaintiff suffers as a proximate result of a defendant’s breach of duty. Requiring a defendant to compensate the plaintiff for harm improperly inflicted by the defendant is the underlying, restitutionary (and deterrent) objective of the negligence cause of action. That is, as much as money damages can do so, the law requires a negligent tortfeasor to restore what the plaintiff lost as a proximate result of the defendant’s wrong. The interest normally protected by the law of negligence is freedom from improperly inflicted physical harm, including physical injury, death, and property damage. This means that negligence law normally does not protect plaintiffs against the risk of “pure” economic loss (such as lost wages, a lost contract, or lost profits) where the plaintiff does not.”

A plaintiff is required to both “plead and prove” that harm was suffered in the form of personal injury or property damage. Underhill, Schwartz, and Appel (2022, p. 2) note:

“Damages are the engine that drives tort law. Whereas tort liability rules determine whether an actor may be held legally responsible for a harm, the law of damages determines how much that harm may be worth in terms of economic and noneconomic compensation, or other types of damages such as punitive damages. The aggregation of different types of damages to arrive at some expected total dollar amount, or range, can and often does determine whether a tort action will be brought and its likelihood for resolution via a settlement or judgment.”

If a defendant failed to exercise reasonable care under the circumstances—but no “legal harm” or damages were suffered by a plaintiff—“legal” negligence has not been established. Actual damages to the person who was owed a duty of care must be established for a negligence claim to have merit in a court of law.

Ellis (2022) writes: “Tort damages are awarded at the end of a civil law suit if the judge or jury feels they are appropriate. There are three major types of tort damages in common legal usage: punitive, compensatory, and nominal. What type and extent of damages awarded will depend on the specifics of each case; some trials result in one type of damage award, while others may have both punitive and compensatory damages.”

Compensatory damages are the most identifiable form of damages awarded in cases of a finding of negligence (Hunter, Shannon, Amoroso, & Lozada, 2017). Unlike punitive damages, which are designed to punish the wrongdoer for intentional conduct, compensatory damages are meant to “help restore a victim to his or her status” prior to the negligent act. The amount of any compensatory damage award is dependent on the nature of damage done to the victim that can be ascertained and proven. Compensatory damages may include reimbursement for medical costs, loss of business, wages, and destruction or damage to property caused by the negligent act of a defendant.

In addition to *monetarily measurable costs*, compensatory damages may also include an amount awarded to the victim for pain, suffering, and emotional distress (Hunter and Amoroso, 2012). While these damages may be difficult to prove in exact monetary terms, such damages are compensable if they were suffered as a result of the defendant’s negligent behavior. The judge will closely monitor the award of these types of damages. Hall and Anderson (2019, pp. 1303-1305) write:

“This general rule becomes more problematic when “awarding damages for amorphous, discretionary injuries[,] such as mental anguish [and] pain and suffering” - such damages are inherently difficult because the injury constitutes “a subjective, unliquidated, nonpecuniary loss.” It “is necessarily an arbitrary process[,]” not subject to objective analysis or mathematical calculation. Because there are no objective guidelines to assess the money equivalent of such injuries, the jury is given a great deal of discretion in awarding an amount of damages it determines appropriate. While the jury has broad discretion, there must be evidence to justify the amount awarded, as the jury “cannot simply pick a number and put it in the blank.” However, a jury’s discretion to compensate for mental anguish is limited to that which “causes [a] “substantial disruption in [the plaintiff’s] daily routine[,]” or “a high degree of mental pain and distress.” Furthermore, the court added that while the damages are clearly reviewable under a sufficiency of the evidence review, there are tremendous difficulties “inherent in an appellate court’s review of discretionary damages.” Nevertheless, a challenge to a damages award for these types of unliquidated and intangible injuries is reviewed as any other challenge based upon the sufficiency of the evidence (legal and factual) or based upon the factual sufficiency of the evidence where the excessiveness of the damages is challenged.”

While the defendant has the burden of proof to establish damages, although unusual in negligence actions, a court may award what are termed as “nominal damages” under certain circumstances, where, for example, a plaintiff is attempting to vindicate some right. Nominal damages may be analogized to a “token fine” paid to the victim of a minor or petty crime “in recognition of the fact that unlawful conduct did occur, but resulted in no meaningful monetary damages.” The award of nominal damages may serve the interest of justice, rather than providing a pecuniary benefit to a plaintiff, although some courts will not entertain nominal damages awards in a negligence cause of action.

Adar and Perry (2022, pp. 228-229) note:

“If the plaintiff can establish a cause of action but did not suffer (or cannot prove) any harm, courts may award a trivial sum of money as nominal damages. Such damages can serve two goals. First, they may provide a form of prospective declaratory relief, vindicating the plaintiff’s rights before any harm is caused, thereby protecting them against continuing or future threats. For example, a nominal award can be used to avert the creation of an adverse property right due to uncontested (harmless) trespass over a period of time. Second, nominal damages can provide retrospective relief under the assumption that every violation of right, even if actionable per se, imports damage. In other words, they can be awarded by default [unless] the plaintiff establishes entitlement to some other form of damages, such as compensatory or statutory damages. As a retrospective relief, nominal damages also offer the symbolic and empowering

benefit of institutional acknowledgement of the commission of a wrong by the defendant against the plaintiff.”

Although not assessed in cases of ordinary negligence, punitive damages may be awarded in cases where a party has acted in an intentional, harmful, reckless, outrageous, or grossly negligent manner (Hunter, Shannon, Amoroso, & Lozada, 2017; see also Underhill, Schwartz, & Appel, 2022, p. 43; Section 908, Restatement (Second) of Torts). Punitive damages are designed to deter a party from acting in such a manner in the future. Punitive damages typically “go above and beyond the amount required for the victim's real or measurable costs.” Punitive damages are also designed to serve as a *community deterrent* or warning to the public not to undertake the same actions as did the wrongdoer (see, e.g., Sharkey, 2003).

3.2. *Negligence Per Se: Statutory Violations*

A violation of a statute or an administrative regulation which defines the requisite conduct of a party may result in an act being considered as “*negligence per se*” (Caldwell & Baik, 2020; see *Coyoy v. Corecivic*, 2022), establishing a presumption of negligence, unless proven otherwise (see Paterick, 2022). An injured plaintiff must demonstrate to the court that the defendant violated a statute or an administrative rule which was enacted to protect the public from some harm, that the plaintiff was among the group the statute or administrative rule was meant to protect, and the injuries sustained were what the regulation was designed to protect against (Caldwell & Baik, 2020, p. 20).

Goldberg (2022, p. 5) writes:

“... Section 286 in the Second Restatement, drafted by William Prosser, appropriately adopts a more stringent position than Bohlen’s in stating that a statutory violation can serve as the basis for a negligence per se jury instruction only if the court finds that the purpose of the statute is: (a) to protect a class of persons which included the one whose interest is invaded, and (b) to protect the particular interest which is invaded, and (c) to protect that interest against the kind of harm which has resulted, and (d) to protect that interest against the particular hazard from which the harm results.”

4. Why was the Long Island Railroad a Potential Defendant?

The Latin term *respondeat superior*, which translates as “let the master answer,” refers to the legal doctrine by which an employer [Master] or organization (Reid, 2004) may be held responsible for the negligence of an employee, when the actions are performed “in the course of employment” and “within the scope of employment” (website of Schmidt & Clark).

Dalley (2016, p. 642) states: “The important underlying societal policies are satisfied most of the time: the master cannot be permitted to evade liability by employing another, and the master cannot be permitted to shift the costs of her business to relatively innocent bystanders.” In order for the doctrine of *respondeat superior* to apply, an employee-employer relationship or master-servant relationship must be established (Maya, 2020; see also Loo, 2020).

In a seminal article the *Marquette Law Review*, Leiser (1956-1957, p. 37) writes:

“A master may be subject to liability for the acts of his servant in both or either of these respects. A master may subject himself to liability based upon his own acts or omissions in several ways:

1. The master may be liable to third persons due to his negligence in the *selection* of his servant. This case arises when the particular servant is unfit or incompetent to perform the duties for which he was employed, especially if such duties require special skill or training.
2. The master may be liable to third persons for his negligence in *failing to instruct* his servants as to the proper method for performing the work.
3. The master is subject to liability for the torts of his servants where the act is done under his *express instruction* or under circumstances indicating an acquiescence by the master.

4. The master may be liable due to his *acquiescence* in previous similar tortious acts of his servant, although outside the scope of the servant's employment.
5. The master is subject to liability when he *ratifies* the tortious act of his servant" (emphasis added).

The principle of *respondeat superior*, however, does not apply to actions undertaken by an independent contractor (see generally Barron, 1989; *FedEx Home Delivery v. NLRB*, 2009; *Echeverry v. Jazz Casino*, 2021).

An independent contractor may be distinguished from an employee on the basis of the *control* exerted by the employer. In general, an independent contractor is a person or an entity hired to accomplish a specific task, but where the employer does not have the right to *control* the details or "methods or means" of those entities or persons (see Ravenelle, 2019). Independent contractors may have specialized skills or knowledge and may work for many employers at the same time.

An employer who hires an independent contractor do not incur *vicarious liability* for the tortious acts of the independent contractor (see Harris, 2021). However, where the duties of an independent contractor are found to be non-delegable (Santayana, 2019; *Farrar v. Dillard's Props.*, 2021), an employer will continue to remain vicariously liable for such acts (see Deakin, 2018). Non-delegable duties may include: (a) inherently dangerous activities (Sandgrund, 2018); (b) duties arising out of a relationship with a specific plaintiff or the public; (c) duties to keep premises opened to the public in a reasonably safe condition relating to the duties of storekeepers or landowners to invitees; and (d) duties to comply with state safety statutes under certain conditions. Concerning the issue of employer liability in cases of inherently dangerous or ultrahazardous activities, Sandgrund (2018, p. 52) writes:

- “1. the activity in question presented a special or peculiar danger to others inherent in the nature of the activity or the particular circumstances under which the activity was to be performed;
2. the danger was different in kind from the ordinary risks that commonly confront persons in the community;
3. the employer knew or should have known that the special danger was inherent in the nature of the activity or in the particular circumstances under which the activity was to be performed; and
4. the injury to the plaintiff was not the result of the collateral negligence of the defendant's independent contractor. The rule does not apply “where the negligence of the contractor creates a new risk, not inherent in the work itself or in the ordinary or prescribed way of doing it, and not reasonably to be contemplated by the employer.”

Sandgrund (2018, p. 52) continues:

- “Courts deciding whether an activity is ultrahazardous must consider whether.
1. the activity poses a high degree of risk of harm to a person, land, or chattels;
 2. it is likely that the resulting harm will be great;
 3. the risk cannot be eliminated by exercising reasonable care;
 4. the activity is not a matter of common usage;
 5. the activity is inappropriate where it occurred; and
 6. the activity's value to the community is outweighed by the danger.”

In addition, an employer may be held liable for its *own negligence* in selecting an independent contractor if an employer was negligent in hiring the independent contractor (McElhattan, 2022). An employer may also liable for any physical harm caused by an independent contractor pursuant to orders or directions negligently given by an employer.

Because both the actions of the conductor and the platform guard were performed “within the scope of their employment” in the service of the Long Island Railroad, the application of the doctrine of *respondeat superior* would be appropriate under these circumstances.

5. Contributory and Comparative Negligence (FindLaw.com)

In many cases, although a defendant may have been found to have been negligent, the plaintiff may bear some or all of the liability (often in terms of costs) for their own negligence either under the application of the theory of contributory or the theory of comparative negligence (see Levmore, 2019).

As Raffii (2022) notes:

“Accidents take place everyday -- people are injured and property is damaged. When personal injury cases like car accidents happen, one of the first questions people typically ask is: "Who was at fault for the tort?" The concepts of contributory and comparative negligence address this question and provide a way to allocate fault between parties when the answer to this question is not entirely clear. As the terms imply, a party may contribute to an act of negligence or be comparatively held liable.”

The term *contributory negligence* describes conduct that creates an unreasonable risk of harm to oneself. After an injured party files a negligence claim, the defendant may assert a defense of contributory negligence against the plaintiff, arguing that the injury occurred at least partially as a result of the plaintiff's own actions (van Dongen, 2014).

Traditionally, courts viewed contributory negligence as an absolute or “complete bar” to the recovery of any damages by a plaintiff (Davis, 1994, p. 284). Under the traditional view, if a plaintiff had contributed to the accident *in any way*, the plaintiff was not entitled to receive any compensation for his or her injuries (see *Crane v. Weber*, 1933).

In an attempt to reduce the harsh outcome from the application of an “absolute bar” rule, courts began to adopt a *comparative negligence* approach. Owen (2000, p. 3) stated: “While contributory negligence has remained the basic defense to products liability claims grounded in negligence, most jurisdictions in the latter part of the twentieth century renamed the doctrine ‘comparative negligence,’ or ‘comparative fault,’ and changed its effect from barring a plaintiff's claim altogether to reducing the plaintiff's damages proportionate to his or her fault.”

There are two approaches to the comparative negligence doctrine (Schwartz & Rowe, 2010, Sections 2.01, 201(a)):

1. *Pure Comparative Negligence*: Plaintiff's damages are totaled or aggregated by the trier of fact and then the award is reduced to reflect their contribution to the injury. For example, if a plaintiff was awarded \$ 50,000 and the trier of fact (either the judge or jury) determined that the plaintiff was 25% responsible for their own injury, the plaintiff would be awarded \$ 37,500 as damages.
2. *Modified Comparative Negligence*: A plaintiff will not recover *at all* if they are found to be either *equally* responsible or *more* responsible than the defendant for the resulting injury. In other words, in order to collect damages, the plaintiff must not be more than 50% at fault for the resulting injury (*Nugent v. Quam*, 1967; *M.M. v. Fargo Public Sch. Dist. No 1*, 2012; *Alan L. Frank Law Assocs. v. P.C. Ooo Rm Invest.*, 2021).

Just one state—South Dakota—follows a comparative negligence modifier called the *slight vs. gross* rule. In South Dakota, a party to a lawsuit can be found to be at “slight” fault, or “gross” fault. The court will decide which party was at slight or gross fault, thus impacting the amount of compensation for damages that can be awarded. In general, if a party is judged to have been at “gross” fault, that party would be barred from any compensation (Fouse, 2022).

6. Assumption of Risk

The website Justia (2023) notes that under the *Federal Rules of Civil Procedure* (Rule 12f), assumption of risk is an affirmative defense that a defendant can raise in a negligence action (*Colon v. Fource Hotel Props.*, 2011). “Assumption of risk refers to a legal doctrine under which an individual is barred from recovering damages for an injury sustained when he or she voluntarily exposed him or herself to a known danger.”

Guelli (1992, p. 243, Note 6) explained:

“Assumption of risk is a term which has been surrounded by much confusion, because it has been used by the courts in at least four different senses, and the distinctions seldom have been made clear. These meanings are as follows:

1. In its simplest form, assumption of risk means that the plaintiff has given his *express consent* to relieve the defendant of an obligation to exercise care for his protection, and agrees to take his chances as to injury from a known or possible risk. The result is that the defendant, who would otherwise be under a duty to exercise such care, is relieved of that responsibility, and is no longer under any duty to protect the plaintiff.
2. A second, and closely related, meaning is that the plaintiff has *entered voluntarily* into some relation with the defendant which he knows to involve the risk, and so is regarded as tacitly or impliedly agreeing to relieve the defendant of responsibility, and to take his own chances. Thus a spectator entering a baseball park may be regarded as consenting that the players may proceed with the game without taking precautions to protect him from being hit by the ball. Again the legal result is that the defendant is relieved of his duty to the plaintiff.
3. In a third type of situation the plaintiff, aware of a risk created by the negligence of the defendant, *proceeds or continues voluntarily* to encounter it. For example, an independent contractor who finds that he has been furnished by his employer with a machine which is in dangerous condition, and that the employer, after notice, has failed to repair it or substitute another, may continue to work with the machine. He may not be negligent in doing so, since his decision may be an entirely reasonable one, because the risk is relatively slight in comparison with the utility of his own conduct; and he may even act with unusual caution because he is aware of the danger. The same policy of the common law which denies recovery to one who expressly consents to accept a risk will, however, prevent his recovery in such a case.
4. To be distinguished from these three situations is the fourth, in which the plaintiff's conduct in *voluntarily encountering a known risk* is itself unreasonable, and amounts to contributory negligence. There is thus negligence on the part of both plaintiff and defendant; and the plaintiff is barred from recovery, not only by his implied consent to accept the risk, but also by the policy of the law which refuses to allow him to impose upon the defendant a loss for which his own negligence was in part responsible” (emphasis added).

In short, in order to raise the assumption of risk defense successfully, the defendant must demonstrate the following:

- The plaintiff had actual knowledge of the risk involved; and
- The plaintiff voluntarily accepted the risk, either expressly through agreement or implied by their words or conduct.

If a plaintiff has assumed the risk, the defendant does not owe any legal duty to the plaintiff. The application of the doctrine of assumption of risk vitiates the duty element of a negligence claim, and the plaintiff cannot recover for injuries caused either by a risk inherent in the situation or a danger created by the defendant's negligence (see Wade, 1961; Sergienko, 2006). An inherent risk is one that is integral to the activity or a risk that cannot be reduced or minimized without changing the basic nature of the activity (*McCaw v. Ariz. Snowbowl Resort*, 2022; *Annitto v. Smithtown Cent. Sch. Dist.*, 2022). However, even if a plaintiff has assumed some risk, they may not have assumed the risk related to their specific injury.

Procedurally, the defendant bears the burden of proof when it comes to asserting an assumption of risk defense. The defendant must show by a preponderance of the evidence that the danger was obvious or apparent. *Express assumption of risk* involves showing that the plaintiff explicitly accepted the risk (*Goss v. USA Cycling, Inc.*, 2022). "It follows that in order for a conscious acceptance to be made, an agreement purporting to constitute an express assumption of risk must state a clear and unambiguous intent to release the party from liability for its negligence" (*Holmes v. Health & Tennis Corp. of Am.*, 1995). The burden placed upon a defendant can be met through presenting a written agreement between the parties, which often takes the form of a *wavier* signed by the plaintiff when undertaking a dangerous activity.

Hylton (2022, p. 1) states: “Waivers are likely to increase the welfare of the parties when litigation is likely to reduce their welfare. Litigation is wealth reducing when the social value of the deterrence created through litigation is low relative to the costs of litigation.” Liability waivers are governed by the law of contracts. As such, waivers may be subject to certain restrictions including:

- The contract cannot violate public policy;
- The contract cannot include any intentional or grossly negligent acts; and
- The plaintiff must have the capacity to understand the terms in the contract or waiver, and cannot be a minor.

Because assumption of risk has been deemed to relate to the issue of duty, the existence of an express assumption of risk is typically decided by the court as a *matter of law*.

Implied assumption of risk can be inferred through words and conduct. Implied assumption of risk exists when a plaintiff undertakes conduct with a full understanding of the possible harm to him or herself and consents to the risk under those circumstances and is “ordinarily” submitted to a jury as a “failure to keep a careful lookout” (*Coomer v. Kan. City Royals Baseball Corp.*, 2014).

7. Teaching Summary

At this point, it is important to note that Mrs. Palsgraf neither expressly or impliedly assumed the risk that a scale would fall causing her bodily injury and alleged psychological trauma and shock. Neither could the defenses of contributory negligence or assumption of risk be raised against her because of any actions she may have taken on the platform of the Long Island Railroad.

What kept Mrs. Palsgraf from recovering for her injuries lies in the divergence of opinions of Judges Cardozo and Andrews in analyzing and then applying the principles of proof of negligence—more specifically, duty and causation.

What might be interesting would be to somehow “reconnect” with these two esteemed jurists to see if their views may have changed, been modified, or perhaps may have “morphed” into one unified theory that might have permitted Mrs. Palsgraf, who by all accounts was simply an innocent bystander, to be compensated (nearly a hundred years later) for her injury. And would everyone who teaches torts love to be present at such a meeting!

References

- Adar, Y. & Perry, R. (2022). Negligence without harm. *Georgetown Law Journal*, 111: 187-235.
- Ahmed, R. (2021). The standard of the reasonable person in determining negligence - comparative conclusions. *African Journals (On Line)*, 24(1), <https://www.ajol.info/index.php/pelj/article/view/235556>
- Alan L. Frank Law Assocs., P.C. v. Ooo Rm Invest. 2021 U.S. Dist. LEXIS 142771 (2021). United States District Court for the Eastern District of New York.
- American Board of Professional Liability Attorneys (ABPLA). What is malpractice. ABPLA.org, <https://www.abpla.org/what-is-malpractice> (accessed February 6, 2023).
- Annitto v. Smithtown Cent. Sch. Dist. 210 A.D. 3d 615 (2022). Supreme Court of New York, Appellate Division, Second Department.
- Bal, B.S. (2009). An introduction to medical malpractice in the United States. *Clinical Orthopaedics and Related Research*, 467: 339-347.
- Bar-Gill & Ben-Shahar (2003). The uneasy case for comparative negligence. *American Law and Economics Review*, 5(2): 433-469.
- Barron, M.H. (1999). Who’s an independent contractor? Who’s an employee? *The Labor Lawyer*, 14(3): 457-473.
- Binder, D. (1996). Act of God? Or act of man? A reappraisal of the act of God defense in tort law. *Review of Litigation*, 15: 1-79.
- Boothe-Perry, N.A. (2012). No laughing matter: The intersection of legal malpractice and professionalism. *American University Journal of Gender, Social Policy and Law*, 21: 1-37.

- Caldwell, J.R. & Baik, J.R. (2020). Negligence per se. *Trial Advocacy*, 39: 20-23.
- Colon v. Fource Hotel Props., LLC. 2011 U.S. Dist. LEXIS 165956 (2011). United States District Court for the Middle District of Florida, Tampa Division.
- Coomer v. Kansas City Royals Baseball Corp. 437 S.W. 3d 184 (2014). Supreme Court of Missouri.
- Coyoy v. Corecivic, Inc. 2022 U.S. Dist. LEXIS 234676 (2022). United States District Court for the Western District of Texas, San Antonio Division.
- Crane v. Weber. 211 Wisc. 294 (1933). Supreme Court of Wisconsin.
- Crews & Pasquera (2017). Palsgraf v. Long Island Railroad Co.: Foreseeability and personal injury law (October 6, 2017), <http://bryancrews.com> (accessed February 8, 2023).
- Cunningham, L.A. (2010). Traditional versus economic analysis: Evidence from Cardozo and Posner torts opinions. *Florida Law Review*, 62: 667-720.
- Curran, C. (1992). The spread of the comparative negligence rule in the United States. *International Review of Law and Economics*, 12(3): 317-332.
- Dalley, P. (2016). Destroying the scope of employment. *Washburn Law Journal*, 55: 637-668.
- Davis, M.J. (1994). Individual and institutional responsibility: A vision for comparative fault in products liability. 39: 281-352.
- Deakin, S. (2018). Organizational torts: Vicarious liability versus non-delegable duty. *The Cambridge Law Journal* (March 2018), 77(1): 15-18.
- Dratler, J. (2009). Palsgraf, principles of tort law, and the persistent need for common-law judgment in IP infringement cases. *Akron Intellectual Property Journal*, 23, https://ideaexchange.uakron.edu/ua_law_publications/71?#=
- Echeverry v. Jazz Casino Co., L.L.C. 988 F. 3d 221 (2021). United States Court of Appeals for the Fifth Circuit.
- Ellis, J. (2022). What are the different types of tort damages? MyLaw Questions (December 30, 2022), <https://www.mylawquestions.com/what-are-te-differet-types-of-tort-damages.htm>
- Farrar v. Dillard's Props. 2021 U.S. District LEXIS 202481 (2021). United States District Court for the District of New Mexico.
- Fasoyiro, L. (2009). Invoking the act of God defense. *Environmental and Energy Law and Policy Journal*, 3(2): 1-33.
- FedEx Home Delivery v. NLRB. 563 F/3d 492 (2009). United States Court of Appeals for the District of Columbia Circuit.
- Fouse, M. (2022). Comparative negligence in South Dakota. Getjerry.com (February 22, 2022), <https://getjerry.com/car-insurance/comparative-negligence-law-in-south-dakota>
- Geistfeld, M.A. (2021). Proximate cause untangled. *Maryland Law Review*, 80(2): 420-463.
- Goldberg, J.C.P. (2022). Torts in the American Law Institute. *In The American Law Institute: A centennial history: 1-27* (A.S. Gold & R.W. Gordon, eds), <https://ssrn.com/abstract=4200763>
- Goldberg, J.C.P. & Zipursky, B.C. (2010). Torts as wrongs. *Texas Law Review*, 88: 917-986.
- Goss v. USA Cycling, Inc. 2022-Ohio-2500 (2022). Court of Appeals of Ohio, Eighth Appellate District, Cuyahoga County.
- Guelli, S.R. (1992). The status of assumption of risk in product liability in Ohio after *Cremeans v. Willmar Henderson Mfg.* *Dayton Law Review*, 18: 243-273.
- Hall, W.W. & Anderson, R.G. (2019). Standards of review in Texas. *St. Mary's Law Journal*, 1099-1351.
- Harris, D. (2021). The rival rationales of vicarious liability. *Florida State University Business Review*, 20: 49-77.
- Healy, S. (2021). Forgotten legal history: The story behind Palsgraf v. Long Island Railroad Co. *The Florida Bar*, <https://www.floridabar.org/experience-matters/forgotten-legal-history-the-story-behind-palsgraf-v-long-island-railroad-co/>
- Hodge, S.D. (2021). The liability of health care providers to third parties injured by a patient. *Pace Law Review*, 41: 464-513.
- Holmes v. Health & Tennis Corp. of Am. 103 Ohio App. 3d 364 (1995). Court of Appeals of Ohio, First Appellate District, Hamilton County.
- Hunter, R.J. (2005). An insider's guide to the legal liability of sports contest officials. *Marquette Sports Law Review*, 15(2): 369-414.
- Hunter, R.J. & Amoroso, H.A. (2012). Damages for pain and suffering and emotional distress in products liability cases involving strict liability and negligence. *Faulkner Law Review*, 3(2): 277-302.
- Hunter, R.J. & Shannon, J.H. (2022). Assessing confidentiality in the lawyer-client relationship: A client perspective. *Advances in Social Sciences Research Journal*, 9(10): 418-430.
- Hunter, R.J., Shannon, J.H., & Amoroso, H.J. (2018). *Products liability* (Second ed.). South Orange, N.J.: Custom Publisher.
- Hunter, R.J., Shannon, J.H., Amoroso, H.A., & Lozada, H.R. (2017). A reprise of compensatory and general damages with a focus on punitive damages in products liability cases. *International Journal of Business Management and Commerce*, 2(1): 24-37.

- Hylton, K.N. (2022). Waivers. Boston University School of Law Paper No. 22-26 (September 20, 2022), https://papers.ssrn.com/sol3/cf_dev/AbsByAith.cfn?per_id=15862
- Justia. Assumption of risk in personal injury cases, [justia.com, https://www.justia.com/injury/negligence-theory-/assumption-of-risk/](https://www.justia.com/injury/negligence-theory-/assumption-of-risk/); (accessed February 8, 2023).
- James v. Meow Media, Inc. 90 Fed. Supp. 798 (2000). United States District Court for the Western District of Kentucky.
- Kelly, T.L. (2020). The third restatement and the jurisprudential evolution of duty: Tracking the “duty war” in *Palsgraf* and beyond (with a focus on the influence of H.L.A. Hart). *Drexel Law Review*, 13: 87-141.
- Knobe, J. & Shapiro, S. (2021). Proximate cause explained. *The University of Chicago Law Review*, 88(1): 165-236.
- Kratzke, W.P. 92010). The case for a rule of modified comparative negligence. *University of Missouri-Kansas City Law Review*, 65(1): 15-29.
- Lawsuit Legal.com. Legal negligence explained simply, <https://www.lawsuitlegal.com/negligence.php#.text=> (accessed February 8, 2023).
- Leiser, A.W. (1956-1957). Respondeat superior- intentional torts as being within the scope of employment. *Marquette Law Review*, 40(3): 337-344.
- Levmore, S. (2019). Richard Posner, the decline of the common law, and the negligence principle. *The University of Chicago Law Review* 86: 1137-1156).
- Loo (R.V. (2020). The revival of respondeat superior and evolution of gatekeeper liability. *Georgetown Law Journal*, 109: 141-189.
- MacDougall, V.L. (2019). The jury verdict favored Helen Palsgraf: A critique of the Restatement (Third) PEH and foreseeability—“What does it all mean?” *Oklahoma City Law Review*, 43(1): 1-44.
- Mallen, R.E. (1979). Recognizing and defining legal malpractice. *South Carolina Law Review*, 30(2): 203-211.
- Maya, J.C. (2020). Respondeat superior and vicarious liability: An overview. [lawyers.com \(June 18, 2020\), https://blogs.lawyers.com/attorney/personal-injury/respondeat-superior-and-vicarious-liability-an-overview-63267/](https://blogs.lawyers.com/attorney/personal-injury/respondeat-superior-and-vicarious-liability-an-overview-63267/)
- McDowell, B. (1985). Foreseeability in contract and tort: the problem of responsibility and remoteness. *Case Western Reserve Law Review*, 36: 286-325.
- McElhattan, D. (2021). The exception as the rule: Negligent hiring liability, structured uncertainty, and the rise of criminal background checks in the United States. *Law and Social Inquiry*, 47(1): 132-161.
- McCaw v. Ariz. Snowbowl Resort. 2022 Ariz. App. LEXIS 349 (2022). Court of Appeals of Arizona, Division One.
- Meadow, R. (2000). Contributory negligence: A question of fact or law? *Association of Business Trial Lawyers (ABTL) Report*, XXII(2): 5-6.
- Moughalian, G.O. (2021). Understanding the negligence question. *Lincoln Memorial University Law Review*, 9: 127-187.
- Munneke, G.A. & Davis, A.E. (1997/1998). The standard of care in legal malpractice: Do the model rules of professional conduct define it? *Journal of the Legal Profession*, 22: 33-84.
- M.M. v. Fargo Public Sch. Dist. No. 1. 2012 ND 79 (2012). Supreme Court of North Dakota.
- Nelson, W.E. (2018). *Palsgraf v. Long Island RR*: Its historical context. *Touro Law Review*, 34(1): 281-300.
- New York Times (1924). Bobb blast injures 13 in station crowd. *New York Times* (August 25, 1924), <https://www.nytimes.com/1924/08/25/archives/bomb>
- Nugent v. Quam. 82 S.D. 583 (1967). Supreme Court of North Dakota.
- Owen, D.G. (2000). Products liability: User misconduct defenses. *South Carolina Law Review*, 52: 1-80.
- Owen, D.G. (2007). The five elements of negligence. *Hofstra Law Review*, 35(4): 1671-1686.
- Palsgraf v. Long Island Railroad*. 248 N.Y. 339 (1929). New York Court of Appeals.
- Paterick, T.E. (2022). Medical malpractice: An introduction to tort law. *The Journal of Medical Practice Management*, 37(4): 197-201.
- Rafii, R. (2023). Contributory and comparative negligence. *Find Law* (December 19, 2022), <https://www.findlaw.com/definition/negligence.html> (accessed February 8, 2023).
- Ravenelle, A.J. 92019). “We’re not uber.” Control, autonomy, and entrepreneurship in the gig economy. *Journal of Managerial Psychology*, 34(4): 269-285.
- Ray, S.B. (2020). The law of rescue. *California Law Review*, 108: 619-677.
- Reid, W.H. (2004). Organizational liability: Beyond respondeat superior. *Journal of Psychiatric Practice*, 10(4), https://journals.lww.com/practicalpsychiatry/Citation/2004/07000/Organization_Liability_Beyond_Respondeat_Superior.8.aspx
- Restatement (Second) of Torts, Section 443 (1965). Affirmative Defense - Causation: Intentional Tort/Criminal Act as Superseding Cause.
- Restatement (Second) of Torts, Section 286 (1965). Negligence Per Se.
- Restatement (Second) of Torts, Section 908 (1965). Punitive Damages.

- Sage, W.M., Boothman, R.C., & Gallagher, T.H. (2020). Another medical malpractice crisis? Try something different. *Law and Medicine* (September 17, 2020), 324(14): 1395-1396, <https://jamanetwork.com/journals/jama/article-abstract/2770929>
- Sandgrund, R.M. (2018). Inherently dangerous and ultrahazardous activities. *Colorado Lawyer* (Colorado Bar Association) (February 2018), 47: 50-56.
- Santayana, F. (2019). Vicarious liability, non-delegable duties and the ‘intentional wrongdoing problem.’ *Torts Law Journal*, 25: 152-183.
- Schmidt & Clark. What is respondeat superior? Characteristics and recoverable damages, <https://www.schmidtandclark.com/respondeat-superior> (accessed February 8, 2023).
- Schwartz, V.E. (2010). *Comparative negligence* (5th ed. 2010). New Providence, N.J.: LexisNexis.
- Sergienko, G.S. (2006). Assumption of risk as a defense to negligence. *Western State University Law Review*, 34: 1-28.
- Sharkey, C.M. (2003). Punitive damages as societal damages. *Yale Law Journal*, 113: 347-453.
- Shouse Injury Law Group. The “reasonable person” standard- How does it work? (June 14, 2022), <https://www.shouselaw.com/ca/blog/reasonable=person-atandard/> (accessed February 8, 2023).
- Sperino, S.F. (2020). The emerging statutory proximate cause doctrine. *Nebraska Law Review*, 99: 285-329.
- Stanford Encyclopedia of Philosophy. Causation in the Law (October 3, 2019), <https://plato.stanford.edu/entries/causation-law/> (accessed February 8, 2023).
- Tikriti, A. (2023). Foreseeability and proximate cause in a personal injury case. *All Law*, <https://www.alllaw.com/articles/nolo/personal-injury/foreseeability-proximate-cause.html>
- Underhill, S.R., Schwartz, V.E., & Appel, C.E. (2022). Perspectives on the future of tort damages: The law should reflect reality. *South Carolina Law Review*, 74: 1-51.
- US Legal. Foreseeability law and legal definition, <https://definitions.uslegal.com/f/foreseeability/> (accessed February 8, 2023).
- van Dongen, E. (2014). *Contributory negligence: A historical and comparative study*. Leiden, Netherlands: Brill Nijhoff.
- Wade, J.W. (1961). The place of assumption of risk in the law of negligence. *Louisiana Law Review*, 22: 5-16.
- White, C.H. (2002). No good deed goes unpunished: The case for reform of the rescue doctrine. *Northwestern University Law Review*, 97: 507-545.
- Wright, R.W. (2003). The grounds and extent of legal responsibility. *San Diego Law Review*, 40: 1425-1532.



Investigation of Trait Anxiety and Death Anxiety Experienced in the Covid 19 Pandemic in Terms of Physical Activity Status

Deniz Bedir¹, Sevinc Namli²

¹ Faculty of Sport Sciences, Erzurum Technical University, Erzurum, Türkiye

Correspondence: Deniz Bedir, Faculty of Sport Sciences, Erzurum Technical University, Yakutiye, 25050, Erzurum, Türkiye. Tel: +905435996454. E-mail: deniz.bedir@erzurum.edu.tr

Abstract

With the emergence of Covid-19, people's lifestyles have changed due to restriction measures. This situation has caused various adverse psychological effects on people. The study aimed to examine individuals' death anxiety and trait anxiety levels regarding physical activity status during the pandemic. In this context, 475 university students, 275 (57.9%) female, and 200 (42.1%) male participated in the research. The trait anxiety section of the State-Trait Anxiety Inventory was used to detect the trait anxiety of the participants, and the Abdel-Khalek Death Anxiety Scale was used to determine the death anxiety. Independent Samples T-Test and One Way Anova, parametric tests, were applied to the collected data. According to the research findings, there is a statistically significant difference in trait anxiety and death anxiety levels according to whether to do physical activity during the pandemic. The results show that the death anxiety and trait anxiety levels of individuals who do physical activity are lower than those who do not do sports. As a result, it can be said that individuals who continue to do sports despite various limitations during the pandemic period are less exposed to the adverse psychological effects of the pandemic.

Keywords: University Students, Pandemic, Trait Anxiety, Death Anxiety, Physical Activity

1. Introduction

After the Spanish Flu, which had the highest death rate globally between 1918-1920, the Covid-19 pandemic, which had a death rate of over 6 million as of January 2021, first appeared in Wuhan, China, at the end of 2019. Traveling from one part of the world to another within hours has caused the epidemic to spread very quickly around the world, and since the first months of 2020, cases have started to be seen in many countries of the world (WHO, 2021). In the beginning, the complete unknown of the pandemic form and the absence of a drug or vaccine for the disease led countries to take different measures. These measures have revealed an isolated lifestyle in the most general sense. Curfews were imposed on millions of people, schools were directed to distance education, and workplaces were suspended during the peak periods of the epidemic, except for compulsory business sectors (Banerjee, 2020; Silva et al., 2021). In other words, people were forced to choose an asocial lifestyle, causing them to experience emotional and physical loneliness. Therefore, the effect of the pandemic has begun to appear not

only physically but also psychologically. Taylor et al. (2020) argue that the number of people psychologically affected by the Covid 19 pandemic is greater than the number of people physically affected. When the literature is examined, it is seen that this epidemic causes adverse emotional reactions such as anxiety, fear, and anger in individuals, increases their stress levels, increases their susceptibility to psychological disorders such as anxiety disorders, depressive disorders, post-traumatic stress disorder, and causes suicidal thoughts and insomnia (Bekaroğlu & Yılmaz, 2020; Giusti et al., 2020; Kontoangelos et al., 2020).

The news in the visual and print media during the Covid 19 epidemic process, the rapid increase in cases, and the increase in death rates caused panic in people (Saravanan et al., 2020). Experts stated that the psychological conditions observed in previous epidemics also occurred during this pandemic and that psychological effects such as anxiety and fear occur in humans (Lee et al., 2020; Wheaton et al., 2012; Zhang et al., 2020). Although anxiety and fear are confused in the literature (Türkçapar, 2004), fear is defined as a response to a concrete stimulus, while anxiety is defined as an internal stimulus (Morgan, 2010).

Although anxiety is the emotional state that everyone experiences, it can cover a specific period or be an emotional state that lasts throughout a person's life. Spielberger et al. (1971) explain this under two headings: state and trait anxiety. State anxiety is a temporary mood disorder experienced before or during a potential threat (Tindall et al., 2021). In other words, when the factor that causes stress in state anxiety disappears, the level of anxiety decreases over time. Trait anxiety, on the other hand, is a state of emotion that causes individuals to interpret the situations they are in severely or negatively, mainly arising from the uncertainty of the future. It is not dependent on any event and is the person's living by producing scenarios as if he had a non-existent situation (Toktaş, 2017).

Although they do not have any chronic diseases in the Covid 19 pandemic, the high number of deaths in the young population triggers death anxiety among young people. Being the only species with the cognitive capacity to think about its death may seem an impressive ability at first glance, but awareness of death can generate intense anxiety (Menzies & Menzies, 2020). The first emotion that occurs in human beings is death anxiety and forms the basis of other anxieties (Irvin, 2017). Situations such as separation from loved ones and the end of their existence cause death anxiety, and the uncertainty after death reveals anxiety. It has been reported that death anxiety is associated with harmful health outcomes such as exposure to life-threatening events, decreased physical functions, psychological stress, and life satisfaction (Rababa et al., 2021).

Anxiety is one of the most critical threats to human psychology. At this point, there is a general belief that physical activity and exercise positively affect mood and anxiety. Numerous studies demonstrate the relationship between physical activity and anxiety and the anxiolytic and antidepressive effects of exercise (Cooney et al., 2013; Paluska & Schwenk, 2000; Ströhle, 2009).

Although scientific studies examining the adverse psychological effects of the pandemic on society have been intensively researched recently, it is seen that studies investigating the relationship between these effects and physical activity are not sufficiently focused. In this context, the primary purpose of the research is to examine the negative psychological state of the pandemic, trait anxiety, and death anxiety in terms of physical activity. The results obtained from the study contain essential information on how to protect the psychological health of individuals during the Covid 19 pandemic and the pandemic processes that may be encountered later.

The other sub-purpose of the study is to examine trait anxiety and death anxiety experienced during the pandemic process according to various socio-demographic characteristics.

2. Method

2.1 Model of the Research

This research was designed according to survey research, which is one of the quantitative approaches aiming to measure the existing situation by objectifying it according to numerical data (Cohen et al., 2002; Karasar, 2014). Survey research is one of the patterns of the quantitative approach and is a method frequently used in social

sciences. This method identifies and describes a group's characteristics and presents the current situation (Büyükoztürk et al., 2012; Karasar, 2014).

2.2 Participant (Subject) Characteristics

A total of 475 university students, 275 female and 200 males, studying at various faculties at Erzurum Technical University and Atatürk University in the academic year of 2020-2021, participated in the research. Wright and Swan (2001) recommend 30-60 minutes of exercise 3-4 times weekly for physical and psychological well-being. Therefore, in addition to socio-demographic questions, the participants were initially asked about the duration of weekly exercise and 30 minutes a day, at least three days a week. Individuals whom exercise and individuals who do not exercise were included in the study, and two groups were formed.

Due to the pandemic, an easy sampling method was used, and the scales were delivered to the participants via Google forms on digital platforms. In the study, which was based on volunteerism, 38 participants had a chronic illness, and 101 were found to have been infected with the Covid 19 virus before due to the answers given. Detailed demographic variables of the participants are given in Table 1.

Table 1: Demographic information of the participants

Category		n	%
Gender	Female	275	57,9
	Male	200	42,1
Chronic Disease	Yes	38	8,0
	No	437	92,0
Covid Pass Status	Yes	101	21,3
	No	374	78,7
Physical Activity Status	Yes	216	45,8
	No	259	54,2

2.3 Data Collection Tools

2.3.1 Abdel-Khalek Death Anxiety Scale

It was developed by Abdel-Khalek (2004) to determine the death anxiety levels of individuals. The scale consists of 20 items, each grading over 5 points (1 = not at all and 5 = a lot). 1636 people from Syria, Egypt, and Kuwait were included in the validity and reliability study, and the Cronbach alpha coefficient was found between 0.88 and 0.93. The scale was adapted to Turkish by Sarıççek Aydoğan et al. (2015) ($\alpha=0.86$). As a result of the analyzes performed in this study, the reliability value was found as $\alpha=0.89$. The scale consists of five sub-dimensions: fear of death-related visual stimuli, fear of physical and mental pain associated with death, fear of other situations reminding death, fear of the afterlife, and fear of death itself.

2.3.2 State-Trait Anxiety Inventory

It was developed by Spielberger et al. (1971) and designed as a 4-point Likert scale. The Turkish validity and reliability of the scale were done by Öner and Le Compte (1983). The scale has two parts state anxiety and trait anxiety. The trait anxiety section was used in this study to examine the long-term impact of the pandemic. Alpha reliability of the 20-item trait anxiety scale (TAS) was between .83 and .87, and test-retest reliability was found to be between .71 and .86 (31).

2.4 Ethics Committee Permission

Due to the pandemic, the researchers reached the participants via digital platforms. They obtained the data as the universities provided services with distance education for specific periods, and the absence of attendance during

face-to-face education periods made it difficult to reach the student groups. XXXXXXXXX dated XXXXXXXX was obtained from the Sub-Ethics Committee of XXXXX University Faculty of Sport Sciences before the data were collected.

2.5 Data Analysis

After controlling the data obtained, the researchers analyzed the data in the SPSS Package program and found that the kurtosis and skewness values were between +2 and -2. Since this result indicates that the research data are normally distributed (Tabachnick et al., 2007), the parametric tests Independent Samples T-Test and One Way Anova test were applied to the data.

3. Results

In this part of the study, the results obtained from the analyzed data are presented. The analysis results regarding the gender variable of trait anxiety and death anxiety are presented in Table 2.

Table 2: Examination of trait anxiety and death anxiety in terms of gender variable

Variable	Gender	n	\bar{x}	ss	t	p
Trait Anxiety	Female	275	3,03	0,67	4,859	,000**
	Male	200	2,73	0,65		
Visual Stimulus	Female	275	3,31	1,19	8,203	,000**
	Male	200	2,40	1,20		
Physical and Mental Pain	Female	275	3,78	0,99	3,527	,000**
	Male	200	3,44	1,13		
Other Situations	Female	275	2,44	1,08	5,760	,000**
	Male	200	1,89	0,97		
Afterlife	Female	275	3,58	1,12	4,890	,000**
	Male	200	3,06	1,22		
Fear of Death Itself	Female	275	2,89	1,09	3,066	,002*
	Male	200	2,58	1,12		
Death Anxiety	Female	275	3,23	0,88	6,519	,000**
	Male	200	2,68	0,95		

* $p < 0.05$, ** $p < 0.01$

As shown in Table 2, a significant difference was found because of the analyzes performed to examine trait and death anxiety in terms of gender ($p < 0.05$). It was observed that female participants had higher scores on the Trait Anxiety Scale than male participants ($\bar{X}_{\text{female}} = 3,03 \pm 0,67$, $\bar{X}_{\text{male}} = 2,73 \pm 0,65$).

As a result of the analyzes conducted to determine the death anxiety levels of university students during the pandemic period, a significant difference was found in favor of females ($\bar{X}_{\text{female}} = 3.23 \pm 0.88$, $\bar{X}_{\text{male}} = 2.68 \pm 0.95$) between the death anxiety scale and total scores from all sub-dimensions in terms of gender ($p < 0,05$).

Table 3 shows the findings of the analyses conducted to examine the trait anxiety and death anxiety levels of university students, which is another study's sub-problems, according to their chronic disease status.

Table 3: Examination of trait anxiety and death anxiety in terms of chronic disease status

Variable	Chronic Disease	n	\bar{x}	ss	t	p
Trait Anxiety	Yes	38	3,34	0,60	4,063	,000**

	No	437	2,87	0,68		
Visual Stimulus	Yes	38	3,28	1,18	1,752	,080
	No	437	2,90	1,28		
Physical and Mental Pain	Yes	38	4,28	0,89	3,881	,000**
	No	437	3,59	1,07		
Other Situations	Yes	38	2,54	1,02	1,966	,050*
	No	437	2,18	1,07		
Afterlife	Yes	38	3,78	1,09	2,244	,025*
	No	437	3,33	1,19		
Fear of Death Itself	Yes	38	3,43	1,19	3,891	,000**
	No	437	2,70	1,09		
Death Anxiety	Yes	38	3,48	0,88	3,232	,001**
	No	437	2,96	0,95		

*p<0.01, ** p<0.00

As a result of the analyzes made on the trait anxiety status of the chronic disease status variable of university students, a statistically significant difference was found in favor of the participants with chronic diseases ($\bar{X}_{yes}=3.34\pm.60$, $\bar{X}_{no}=2.87\pm.68$) ($p<0,05$).

When the analysis of the death anxiety scale total scores and sub-dimensions of the chronic illness status variable were examined, significant differences were found in favor of those with chronic illness in the sub-dimensions of Physical and Mental Pain ($\bar{X}_{yes}=4,28\pm,89$, $\bar{X}_{no}=3,59\pm1,07$), Other Situations ($\bar{X}_{yes}=2,54\pm1,02$, $\bar{X}_{no}=2,18\pm1,07$), Afterlife ($\bar{X}_{yes}=3,78\pm1,09$, $\bar{X}_{no}=3,33\pm1,19$), Fear of Death Itself ($\bar{X}_{yes}=3,43\pm1,19$, $\bar{X}_{no}=2,70\pm1,09$), and Death Anxiety Scale ($\bar{X}_{yes}=3,47\pm,88$, $\bar{X}_{no}=2,96\pm,95$).

The analysis results of the trait anxiety and death anxiety levels of university students, which is the third sub-problem of the study, according to their previous Covid 19 status, are given in Table 4.

Table 4: Examination of trait anxiety and death anxiety in terms of Covid status

Variable	Covid Status	n	\bar{x}	ss	t	p
Trait Anxiety	Yes	101	2,87	0,68	-,648	,517
	No	374	2,92	0,69		
Visual Stimulus	Yes	101	2,86	1,15	-,620	,536
	No	374	2,95	1,31		
Physical and Mental Pain	Yes	101	3,78	0,94	1,481	,139
	No	374	3,60	1,10		
Other Situations	Yes	101	2,10	0,99	-1,175	,240
	No	374	2,24	1,09		
Afterlife	Yes	101	3,37	1,14	,000	1,000
	No	374	3,37	1,21		
Fear of Death Itself	Yes	101	2,84	1,04	,764	,445
	No	374	2,74	1,14		
Death Anxiety	Yes	101	3,01	0,86	,077	,938
	No	374	3,00	0,98		

As can be seen in Table 4, no statistically significant difference was found between the scores obtained from the Trait Anxiety ($\bar{X}_{yes}=2,87\pm,68$, $\bar{X}_{no}=2,92\pm,69$) and Death Anxiety Scales ($\bar{X}_{yes}= 3,01\pm,86$, $\bar{X}_{no}=3,00\pm,98$) as a result of the analyzes made on the variable of being infected with Covid-19 by university students before ($p<0.05$). The analysis results regarding the analysis of trait anxiety and death anxiety levels, the fourth sub-problem of the study, according to the physical activity status of the participants, are given in Table 5.

Table 5: Examination of trait anxiety and death anxiety in terms of physical activity

Variable	Physical Activity	n	\bar{x}	ss	t	P
Trait Anxiety	Yes	216	2,77	0,65	-2,546511	0,011*
	No	259	2,96	0,69		
Visual Stimulus	Yes	216	2,74	1,31	-1,829501	0,067
	No	259	2,99	1,26		
Physical and Mental Pain	Yes	216	3,53	1,14	-1,272576	0,203
	No	259	3,68	1,05		
Other Situations	Yes	216	2,18	1,21	-0,414776	0,678
	No	259	2,22	1,02		
Afterlife	Yes	216	3,28	1,18	-0,910159	0,363
	No	259	3,39	1,20		
Fear of Death Itself	Yes	216	2,65	1,21	-1,225290	0,221
	No	259	2,80	1,09		
Death Anxiety	Yes	216	2,89	1,04	-1,452859	0,146
	No	259	3,04	0,92		

* $p<0.01$

The results of the analyzes conducted to determine the trait anxiety and death anxiety levels of individuals who do/not do physical activity during the pandemic process are shown in Table 5. According to the results obtained, it is seen that the trait anxiety levels of individuals who do/not do physical activity are higher than those who do physical activity ($\bar{X}_{yes}=2.77\pm.65$, $\bar{X}_{no}=2.96\pm.69$) ($p<0.05$). No statistically significant difference was found in the Death Anxiety Scale and all its sub-dimensions ($\bar{X}_{yes}=2.89\pm.65$, $\bar{X}_{no}=2.96\pm.69$).

4. Discussion and Conclusion

Despite the decrease in the number of cases with vaccination and social distances since its emergence, the psychological effects continue today due to the negative consequences of the Covid 19 virus epidemic, such as death and intubation (WHO, 2021). Although the death and severe disease rates are high in the elderly population, it is known that they are not insignificant among the young population. The psychological effects of the disease and its physical effects have been the subject of research, and studies have shown that the pandemic reveals negative factors such as stress, anxiety, and depression (Khan et al., 2020). The news that is made very frequently in the visual and written media is one of the factors that cause people to be affected spiritually. Due to developing technological opportunities, individuals are expected to spend more time on social media (Hudimova et al., 2021) and be affected more spiritually because they are more exposed to pandemic news. Although physical activity contributes to the psychological well-being of individuals, it has caused a decrease in the level of participation in physical activity, especially during and after the restriction period. The research in this context examines individuals' death anxiety and trait anxiety levels regarding physical activity during the Covid 19 pandemic.

In the findings related to the gender factor, which is the first of the sub-hypotheses of the research, it was determined that female participants' death anxiety and trait anxiety levels were higher than male participants. Rossi et al. (2020), in their study in which they included a large sample group in Italy, reported that younger age groups had higher levels of stress and anxiety among female participants. In their study with 443 participants from

different universities, Ceviz et al. (2020) found that female participants had higher trait and state anxiety levels than male participants. Although the sample groups and populations (athletes, occupational groups, etc.) vary, many research results reveal that female participants are more affected by the pandemic (Cao et al., 2020; Çölgeçen & Çölgeçen, 2020; Göksu & Kumcağız, 2020).

The fact that female participants experience higher levels of death anxiety than males is in line with the literature (Assari & Lankarani, 2016; Kirchberger et al., 2011; Russac et al., 2007; Zana, 2009). The source of this difference is thought to be that females are more emotional, and males are less willing to admit their fears (Kastenbaum, 2000) openly. Kastenbaum (2000) also suggested that the more significant concern about death reported by females may stem from the fact that they are often the primary caregivers of the deceased. In addition, Templer et al. (1974) defined death anxiety as a feminine phenomenon. They attribute this to the fact that although males tend to express their concerns nonverbally, self-report scales better capture females' concerns. Therefore, it is thought that gender differences in death anxiety may be due to gender differences in language use to share such a complex topic (Kirchberger et al., 2011).

High trait anxiety and death anxiety levels in females reveal that females are more prone to psychological problems and have a higher risk of experiencing mental problems (Alvi et al., 2010; Pieh et al., 2020). In general, it is claimed that the testosterone hormone is effective in the emergence of this situation and that males are more successful in coping with psychological problems since testosterone hormones are higher than females (McHenry et al., 2014).

When we look at the effect of the chronic disease status variable, which is the second sub-hypothesis of the study, on trait anxiety and death anxiety, it was seen that the scores of the participants with chronic diseases were higher. The frequency and intensity of thoughts about death increase in chronic diseases (Francalancia et al., 2021; Khawar et al., 2013; Khodarahimi et al., 2021). Some studies have shown that patients with chronic diseases have more significant death anxiety than healthy controls (Strömberg & Jaarsma, 2008). The data obtained as a result of the virus epidemic spreading in the world is that the course of the disease is worse in individuals with chronic diseases, and the rates of admission to intensive care and death are higher (Sandalcı et al., 2020; Zhou et al., 2020). The announcement of these data to the public by the World Health Organization and the Ministry of Health in our country through the media pushes individuals with chronic diseases to act more cautiously. In this context, the death and trait anxiety states of individuals with chronic diseases are expected to be higher.

According to the World Health Organization (WHO, 2021), on a global basis for January 2021, the number of 481 million cases is around 15 million according to the Ministry of Health (<https://covid19.saglik.gov.tr/>) in our country. The most common symptoms of the virus outbreak, which have an incubation period of about four days after exposure, are headache, cough, pneumonia, high fever, and joint pains (Guan et al., 2020). Fu et al. (2020), who examined studies conducted in various provinces of China, drew attention to the prevalence of high C-Reactive protein and decreased lymphocyte counts in laboratory tests and the prevalence of ground-glass density in tomography examinations. In addition to physiological and clinical studies, psychological studies commonly mention the prevalence of mental problems such as depression, anxiety, and stress (Li et al., 2021). The risk of contracting the disease, uncertainty, fear of losing relatives, and an isolated lifestyle are the leading causes of these psychological problems. However, even after catching the disease and overcoming it, this does not mean that mental problems will end. Because the risk of being caught again, another factor that accompanies the uncertainty and the fear of losing relatives, continues. Official data indicate that antibodies developed in those with covid-19 protect individuals for a certain period. Some cases are caught in the epidemic for the second time. These results show parallelism with our analysis results regarding the variable of having previously passed Covid-19, which is the third sub-hypothesis of the research. There was no statistical difference between the total scores of trait anxiety and death anxiety of university students, whether they had Covid 19 before.

Finally, as a result of the statistical analyzes carried out to determine whether the levels of trait anxiety and death anxiety, which are the main hypothesis of the research, vary according to physical activity; It has been observed that the trait anxiety levels of individuals who do not do physical activity are higher than those who do, and there is no significant difference in terms of death anxiety. Physical activity, in addition to being defined as a set of

exercises performed regularly, is a planned physical activity aimed at maintaining and improving the current health status (Allegre et al., 2006). Many studies reveal the contributions of physical activity to individuals not only physically but also psychologically (Allegre et al., 2006; Gençoğlu & Namlı, 2020; Tükel, 2021). A growing body of empirical studies and several plausible theoretical explanations support that regular exercise provides mental health benefits (Biddle et al., 2000; ISSP, 1992). Many research reviews have reported that exercise, particularly aerobic exercise, is negatively associated with trait anxiety and depression and positively correlates with mental health indicators such as well-being and self-concept (Fox, 2000; McDonald & Hodgdon, 2012).

Females' trait anxiety and death anxiety levels are higher than males are thought to be since they are more affected by environmental factors due to their nature. The fact that individuals with chronic diseases have experienced the Covid 19 epidemic more severely has caused their anxiety levels to be higher. It can be said that individuals who do physical activity have lower levels of anxiety due to their high levels of psychological resilience.

Studies show that social support networks are inversely related to female death anxiety (Fry, 2003). Therefore, integrating females with high death anxiety due to pandemics or illness into social support networks can help females cope with this anxiety. In addition, studies show that high self-esteem is a defense against death anxiety (Routledge, 2012). It can be helped to increase self-esteem by making individuals feel valued and increasing their sense of love and trust.

Considering the positive effects of regular exercise on psychological well-being and resilience, individuals should be encouraged to participate in sports.

The samples of this research are limited to Erzurum province. It is among the suggestions of the researchers to design studies with larger sample groups to fully reveal the current situation.

References

- Abdel-Khalek, A. M. (2004). The Arabic Scale of Death Anxiety (ASDA): Its development, validation, and results in three Arab countries. *Death Studies*, 28(5), 435-457. <https://doi.org/10.1080/07481180490437572>
- Allegre, B., Souville, M., Therme, P., & Griffiths, M. (2006). Definitions and measures of exercise dependence. *Addiction Research & Theory*, 14(6), 631-646. <https://doi.org/10.1080/16066350600903302>
- Alvi, T., Assad, F., Ramzan, M., & Khan, F. A. (2010). Depression, anxiety and their associated factors among medical students. *J Coll Physicians Surg Pak*, 20(2), 122-126. <https://jcpsp.pk/archive/2010/Feb2010/13.pdf>
- Assari, S., & Lankarani, M. M. (2016). Race and gender differences in correlates of death anxiety among elderly in the United States. *Iranian Journal of Psychiatry and Behavioral Sciences*, 10(2). <https://doi.org/10.17795/ijpbs-2024>
- Banerjee, D. (2020). The other side of COVID-19: Impact on obsessive compulsive disorder (OCD) and hoarding. *Psychiatry Research*, 288, 112966. <https://doi.org/10.1016/j.psychres.2020.112966>
- Bekaroğlu, E., & Yılmaz, T. (2020). COVID-19 ve psikolojik etkileri: Klinik psikoloji perspektifinden bir derleme [COVID-19 and psychological effects: A review in clinical psychology perspective]. *Nesne*, 8(18), 573-584. <https://doi.org/0.7816/nesne-08-18-14>
- Biddle, S., Fox, K. R., & Boutcher, S. H. (2000). *Physical activity and psychological well-being* (Vol. 552). Routledge London.
- Büyüköztürk, S., Kiliç Çakmak, E., Akgün, Ö., Karadeniz, S., & Demirel, F. (2012). *Bilimsel araştırma yöntemleri [Scientific research methods]* (18. Baskı). Pegem Akademi Publishing.
- Cao, W., Fang, Z., Hou, G., Han, M., Xu, X., Dong, J., & Zheng, J. (2020). The psychological impact of the COVID-19 epidemic on college students in China. *Psychiatry Research*, 287, 112934. <https://doi.org/10.1016/j.psychres.2020.112934>
- Ceviz, N., Tektaş, N., Basmacı, G., & Tektaş, M. (2020). Covid 19 pandemi sürecinde üniversite öğrencilerinin kaygı düzeylerini etkileyen değişkenlerin analizi [Analysis of variables affecting anxiety levels of university students in the Covid 19 pandemic process]. *International Journal of Scholars in Education*, 3(2), 312-329. <https://doi.org/https://dergipark.org.tr/en/download/article-file/1426723>
- Cohen, L., Manion, L., & Morrison, K. (2002). *Research methods in education*. Routledge.
- Cooney, G. M., Dwan, K., Greig, C. A., Lawlor, D. A., Rimer, J., Waugh, F. R., McMurdo, M., & Mead, G. E. (2013). Exercise for depression. *Cochrane Database of Systematic Reviews*, 9. <https://doi.org/10.1002/14651858.CD004366.pub6>

- Çölgeçen, Y., & Çölgeçen, H. (2020). Covid-19 Pandemisine bağlı yaşanan kaygı düzeylerinin değerlendirilmesi: Türkiye örneği [Evaluation of anxiety levels arising from covid-19 pandemic: The case of Turkey]. *Electronic Turkish Studies*, 15(4). <https://doi.org/10.7827/TurkishStudies.44399>
- Fox, K. R. (2000). The effects of exercise on self-perceptions and self-esteem. In S. J. H. Biddle, K. Fox, & S. Boutcher (Eds.), *Physical activity and psychological well-being* (pp. 81-118). Routledge.
- Francalancia, J., Mavrogiorgou, P., Juckel, G., Mitrovic, T., Kuhle, J., Naegelin, Y., Kappos, L., & Calabrese, P. (2021). Death anxiety and attitudes towards death in patients with multiple sclerosis: An exploratory study. *Brain Sciences*, 11(8), 964. <https://doi.org/10.3390/brainsci11080964>
- Fry, P. S. (2003). Perceived self-efficacy domains as predictors of fear of the unknown and fear of dying among older adults. *Psychology and Aging*, 18(3), 474. <https://doi.org/10.1037/0882-7974.18.3.474>
- Fu, L., Wang, B., Yuan, T., Chen, X., Ao, Y., Fitzpatrick, T., Li, P., Zhou, Y., Lin, Y.-f., & Duan, Q. (2020). Clinical characteristics of coronavirus disease 2019 (COVID-19) in China: a systematic review and meta-analysis. *Journal of Infection*, 80(6), 656-665. <https://doi.org/10.1016/j.jinf.2020.03.041>
- Gençoğlu, C., & Namlı, S. (2020). Spor bilimleri fakültesi öğrencilerinin psikolojik sağlamlık ve empati düzeyleri: Erzurum Teknik Üniversitesi örneği [Psychological resilience and empathy levels of faculty of sports science: Erzurum Technical University example]. *Sport Sciences*, 15(3), 33-43. <https://doi.org/10.12739/NWSA.2020.15.3.2B0125>
- Giusti, E. M., Pedrolı, E., D'Aniello, G. E., Stramba Badiale, C., Pietrabissa, G., Manna, C., Stramba Badiale, M., Riva, G., Castelnuovo, G., & Molinari, E. (2020). The psychological impact of the COVID-19 outbreak on health professionals: a cross-sectional study. *Frontiers in Psychology*, 11, 1684. <https://doi.org/10.3389/fpsyg.2020.01684>
- Göksu, Ö., & Kumcağız, H. (2020). Covid-19 salgınında bireylerde algılanan stres düzeyi ve kaygı düzeyleri [Perceived stress level and anxiety levels in individuals in Covid-19 outbreak]. *Electronic Turkish Studies*, 15(4). <https://doi.org/10.7827/TurkishStudies.44397>
- Guan, W.-j., Ni, Z.-y., Hu, Y., Liang, W.-h., Ou, C.-q., He, J.-x., Liu, L., Shan, H., Lei, C.-l., & Hui, D. S. (2020). Clinical characteristics of coronavirus disease 2019 in China. *New England Journal of Medicine*, 382(18), 1708-1720. <https://doi.org/10.1056/NEJMoa2002032>
- Hudimova, A., Popovych, I., Baidyk, V., Buriak, O., & Kechyk, O. (2021). The impact of social media on young web users' psychological well-being during the COVID-19 pandemic progression. *Revista Amazonia Investiga*, 10(39), 50-61. <https://doi.org/10.34069/AI/2021.39.03.5>
- Irvin, Y. (2017). *Din ve psikiyatri [Religion and psychiatry]*. Turkuvaz Kitap.
- ISSP. (1992). Physical activity and psychological benefits: A position statement from the international society of sport psychology. *Journal of Applied Sport Psychology*, 6(2), 199-203. <https://doi.org/10.1080/10413209208406452>
- Karasar, N. (2014). *Bilimsel araştırma yöntemi [Scientific research method]*. Nobel Yayınevi.
- Kastenbaum, R. (2000). *The psychology of death*. Springer Publishing Company.
- Khan, A. H., Sultana, M. S., Hossain, S., Hasan, M. T., Ahmed, H. U., & Sikder, M. T. (2020). The impact of COVID-19 pandemic on mental health & wellbeing among home-quarantined Bangladeshi students: A cross-sectional pilot study. *Journal of Affective Disorders*, 277, 121-128. <https://doi.org/10.1016/j.jad.2020.07.135>
- Khawar, M., Aslam, N., & Aamir, S. (2013). Perceived social support and death anxiety among patients with chronic diseases. *Pakistan Journal of Medical Research*, 52(3). http://applications.emro.who.int/imemrf/Pak_J_Med_Res/Pak_J_Med_Res_2013_52_3_75_79.pdf
- Khodarahimi, S., Veiskarami, H. A., Mazraeh, N., Sheikhi, S., & Bougar, M. R. (2021). Mental health, social support, and death anxiety in patients with chronic kidney failure. *The Journal of Nervous and Mental Disease*, 209(11), 809-813. <https://doi.org/10.1097/NMD.0000000000001386>
- Kirchberger, I., Heier, M., Kuch, B., Wende, R., & Meisinger, C. (2011). Sex differences in patient-reported symptoms associated with myocardial infarction (from the population-based MONICA/KORA Myocardial Infarction Registry). *The American Journal of Cardiology*, 107(11), 1585-1589. <https://doi.org/10.1016/j.amjcard.2011.01.040>
- Kontoangelos, K., Economou, M., & Papageorgiou, C. (2020). Mental health effects of COVID-19 pandemia: a review of clinical and psychological traits. *Psychiatry Investigation*, 17(6), 491. <https://doi.org/10.30773/pi.2020.0161>
- Lee, S. A., Jobe, M. C., Mathis, A. A., & Gibbons, J. A. (2020). Incremental validity of coronaphobia: Coronavirus anxiety explains depression, generalized anxiety, and death anxiety. *Journal of Anxiety Disorders*, 74, 102268. <https://doi.org/10.1016/j.janxdis.2020.102268>
- Li, Y., Wang, A., Wu, Y., Han, N., & Huang, H. (2021). Impact of the COVID-19 pandemic on the mental health of college students: A systematic review and meta-analysis. *Frontiers in Psychology*, 12. <https://doi.org/10.3389/fpsyg.2021.669119>
- McDonald, D. G., & Hodgdon, J. A. (2012). *The psychological effects of aerobic fitness training: Research and theory*. Springer Science & Business Media.

- McHenry, J., Carrier, N., Hull, E., & Kabbaj, M. (2014). Sex differences in anxiety and depression: role of testosterone. *Frontiers in Neuroendocrinology*, 35(1), 42-57. <https://doi.org/10.1016/j.yfrne.2013.09.001>
- Menzies, R. E., & Menzies, R. G. (2020). Death anxiety in the time of COVID-19: Theoretical explanations and clinical implications. *The Cognitive Behaviour Therapist*, 13. <https://doi.org/10.1017/S1754470X20000215>
- Morgan, C. T. (2010). *Psikolojiye giriş [Introduction to psychology]*. Eğitim Yayınevi.
- Öner, N., & Le Compte, A. (1983). *Handbook of state-trait anxiety*. Bogazici University Publication.
- Paluska, S. A., & Schwenk, T. L. (2000). Physical activity and mental health. *Sports Medicine*, 29(3), 167-180. <https://doi.org/10.2165/00007256-200029030-00003>
- Pieh, C., Budimir, S., & Probst, T. (2020). The effect of age, gender, income, work, and physical activity on mental health during coronavirus disease (COVID-19) lockdown in Austria. *Journal of Psychosomatic Research*, 136, 110186. <https://doi.org/10.1016/j.jpsychores.2020.110186>
- Rababa, M., Hayajneh, A. A., & Bani-Iss, W. (2021). Association of death anxiety with spiritual well-being and religious coping in older adults during the COVID-19 pandemic. *Journal of Religion and Health*, 60(1), 50-63. <https://doi.org/10.1007/s10943-020-01129-x>
- Rossi, R., Succi, V., Talevi, D., Mensi, S., Niu, C., Pacitti, F., Di Marco, A., Rossi, A., Siracusano, A., & Di Lorenzo, G. (2020). COVID-19 pandemic and lockdown measures impact on mental health among the general population in Italy. *Frontiers in Psychiatry*, 790. <https://doi.org/10.3389/fpsy.2020.00790>
- Routledge, C. (2012). Failure causes fear: The effect of self-esteem threat on death-anxiety. *The Journal of Social Psychology*, 152(6), 665-669. <https://doi.org/10.1080/00224545.2012.691915>
- Russac, R., Gatliff, C., Reece, M., & Spottswood, D. (2007). Death anxiety across the adult years: An examination of age and gender effects. *Death Studies*, 31(6), 549-561. <https://doi.org/10.1080/07481180701356936>
- Sandalcı, B., Uyaroglu, O. A., & Güven, G. S. (2020). COVID-19'da kronik hastalıkların rolü, önemi ve öneriler [The role, importance and recommendations of chronic diseases in COVID-19]. *Flora*, 25(5). <https://doi.org/10.5578/flora.69700>
- Saravanan, C., Mahmoud, I., Elshami, W., & Taha, M. H. (2020). Knowledge, anxiety, fear, and psychological distress about COVID-19 among university students in the United Arab Emirates. *Frontiers in Psychiatry*, 1057. <https://doi.org/10.3389/fpsy.2020.582189>
- Sarıççek Aydoğan, A., Sarıkaya, G. Ş., & Çiğdem, Ö. (2015). Abdel-Khalek Ölüm Anksiyetesi Ölçeği Türkçe formunun üniversite öğrencilerinde geçerlilik ve güvenilirliği [Reliability and validity of the Turkish version of Abdel-Khalek's Death Anxiety Scale among college students]. *Nöropsikiyatri Arşivi*, 52, 371-375. <https://doi.org/10.5152/npa.2015.8820>
- Silva, W. A. D., de Sampaio Brito, T. R., & Pereira, C. R. (2021). Anxiety associated with COVID-19 and concerns about death: Impacts on psychological well-being. *Personality and Individual Differences*, 176, 110772. <https://doi.org/10.1016/j.paid.2021.110772>
- Spielberger, C. D., Gonzalez-Reigosa, F., Martinez-Urrutia, A., Natalicio, L. F., & Natalicio, D. S. (1971). The state-trait anxiety inventory. *Revista Interamericana de Psicología/Interamerican Journal of Psychology*, 5(3 & 4). <https://doi.org/10.30849/rip/ijp.v5i3%20&%204.620>
- Ströhle, A. (2009). Physical activity, exercise, depression and anxiety disorders. *Journal of Neural Transmission*, 116(6), 777-784. <https://doi.org/10.1007/s00702-008-0092-x>
- Strömberg, A., & Jaarsma, T. (2008). Thoughts about death and perceived health status in elderly patients with heart failure. *European Journal of Heart Failure*, 10(6), 608-613. <https://doi.org/10.1016/j.ejheart.2008.04.011>
- Tabachnick, B. G., Fidell, L. S., & Ullman, J. B. (2007). *Using multivariate statistics* (Vol. 5). Pearson Boston, MA.
- Taylor, S., Landry, C. A., Paluszek, M. M., Fergus, T. A., McKay, D., & Asmundson, G. J. (2020). COVID stress syndrome: Concept, structure, and correlates. *Depression and Anxiety*, 37(8), 706-714. <https://doi.org/10.1002/da.23071>
- Templer, D. I., Lester, D., & Ruff, C. F. (1974). Fear of death and femininity. *Psychological Reports*, 35(1), 530-530. <https://doi.org/10.2466/pr0.1974.35.1.530>
- Tindall, I. K., Curtis, G. J., & Locke, V. (2021). Dimensionality and measurement invariance of the State-Trait Inventory for Cognitive and Somatic Anxiety (STICSA) and validity comparison with measures of negative emotionality. *Frontiers in Psychology*, 12, 2022. <https://doi.org/10.3389/fpsyg.2021.644889>
- Toktaş, S. (2017). *Okul spor müsabakalarına katılan lise öğrencilerinin kaygı, özgüven ve güdülenmeleri arasındaki ilişkilerin incelenmesi [The investigation of the relationship between anxiety, self-confidence and motivation of high school students participating in school sporting events]* [Unpublished doctoral dissertation]. Karadeniz Teknik University.
- Tükel, Y. (2021). Covid 19 sürecinde rekreatif faaliyetlere katılan bireylerin psikolojik sağlık düzeylerinin incelenmesi [Investigation of psychological resilience levels of individuals in participating recreative activities during the Covid-19]. *Başkent Üniversitesi Sağlık Bilimleri Fakültesi Dergisi-BÜSBİD*, 6(1). <http://busbid.baskent.edu.tr/index.php/busbid/article/view/308>

- Türkçapar, H. (2004). Anksiyete bozukluğu ve depresyonun tanısal ilişkileri [Diagnostic relationships of anxiety disorder and depression]. *Klinik Psikiyatri*, 4, 12-16. https://jag.journalagent.com/kpd/pdfs/KPD_7_80_12_16.pdf
- Wheaton, M. G., Deacon, B. J., McGrath, P. B., Berman, N. C., & Abramowitz, J. S. (2012). Dimensions of anxiety sensitivity in the anxiety disorders: Evaluation of the ASI-3. *Journal of Anxiety Disorders*, 26(3), 401-408. <https://doi.org/10.1016/j.janxdis.2012.01.002>
- WHO. (2021). *Q&As on COVID-19 and related health topics*. <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/question-and-answers-hub>
- Wright, D. C., & Swan, P. D. (2001). Optimal exercise intensity for individuals with impaired glucose tolerance. *Diabetes Spectrum*, 14(2), 93-97. <https://doi.org/10.2337/diaspect.14.2.93>
- Zana, A. (2009). Attitude to death and changes of death image in Hungarian society. Study of the differences in generational value-judgments and of the possibilities of measurement. Is death still a taboo? *Orvosi Hetilap*, 150(25), 1183-1187. <https://doi.org/10.1556/oh.2009.28577>
- Zhang, W.-r., Wang, K., Yin, L., Zhao, W.-f., Xue, Q., Peng, M., Min, B.-q., Tian, Q., Leng, H.-x., & Du, J.-l. (2020). Mental health and psychosocial problems of medical health workers during the COVID-19 epidemic in China. *Psychotherapy and Psychosomatics*, 89(4), 242-250. <https://doi.org/10.1159/000507639>
- Zhou, F., Yu, T., Du, R., Fan, G., Liu, Y., Liu, Z., Xiang, J., Wang, Y., Song, B., & Gu, X. (2020). Clinical course and risk factors for mortality of adult inpatients with COVID-19 in Wuhan, China: a retrospective cohort study. *The Lancet*, 395(10229), 1054-1062. [https://doi.org/10.1016/S0140-6736\(20\)30566-3](https://doi.org/10.1016/S0140-6736(20)30566-3)

Paradigms for Contextualizing Competency Based Curriculum in Africa: Inferences from the OECD Countries

Yasin Mohamed Gulled¹

¹ Visiting Scholar (Taiwan Fellowship Recipient 2023), National Taiwan Normal University
Email: Fiqi215@gmail.com

Abstract

Competency-based curriculum (CBC) has gained significant attention in recent years as an innovative approach to curriculum design and delivery. This paper explores the use of competency-based curriculum in educational settings and its potential impact on student learning outcomes. It specifically portrays how various countries in OECD utilized the system and urges African countries to undertake the pre-tested approaches by the OECD countries. The paper first provides an overview of CBC and the key principles that underpin this approach. It then discusses the advantages of using CBE, including the ability to personalize learning, increase student engagement and motivation, and improve workforce readiness. The paper also examines the challenges and limitations of implementing CBC, including the need for robust assessment practices, alignment with instructional and assessment methods, and the importance of teacher training and support. Lastly, the paper presents case studies of schools and institutions that have successfully implemented CBC, highlighting best practices and lessons learned. Overall, this paper argues that competency-based curriculum has the potential to transform traditional education by shifting the focus from seat time/knowledge-based to mastery of competencies, thus better preparing students for the demands of the 21st century workforce.

Keywords: Competency-Based Curriculum, Content-Based Curriculum, Mastery, Training and Assessment, Labor Market Demands

1. Introduction

Competency-based education is an instructional approach that focuses on the development of students' skills and knowledge through clear learning outcomes and performance assessments. The competency-based curriculum is designed to provide students with opportunities to demonstrate their understanding of a subject through practical application and hands-on experience. This approach emphasizes student-centered learning and assesses students' progress based on their ability to demonstrate mastery of specific competencies, rather than simply spending a set amount of time on a particular subject.

Competency-based education has gained popularity in recent years as a way to provide students with a more personalized and flexible learning experience. This approach has been adopted in various countries around the world, including the United States, Australia, Canada, and the United Kingdom.

In the United States, competency-based education has been embraced as a way to provide students with the skills and knowledge they need to succeed in a rapidly changing job market. The Lumina Foundation, a private, independent foundation that supports higher education, has been a major advocate for competency-based education in the United States. In a recent report, the foundation highlighted the benefits of this approach, including increased student engagement, personalized learning, and better alignment between education and employment (Lumina Foundation, 2013).

Australia has also embraced competency-based education, with several universities and schools adopting this approach. For example, the University of Southern Queensland offers a competency-based program in business administration that allows students to demonstrate their mastery of specific competencies through practical assessments and projects (University of Southern Queensland, 2021). In addition, the Australian government has supported the development of competency-based programs in various industries, such as construction and healthcare, as a way to provide workers with the skills they need to succeed in a rapidly changing job market (Australian Government, 2021).

In Canada, competency-based education has been adopted by several post-secondary institutions, including Simon Fraser University and the Northern Alberta Institute of Technology. These institutions have developed programs in a variety of fields, such as business, healthcare, and technology, that allow students to demonstrate their mastery of specific competencies through practical assessments and projects (Simon Fraser University, 2021; Northern Alberta Institute of Technology, 2021).

The United Kingdom has also embraced competency-based education, with several universities and schools adopting this approach. For example, the University of Bristol offers a competency-based program in business administration that allows students to demonstrate their mastery of specific competencies through practical assessments and projects (University of Bristol, 2021). In addition, the UK government has supported the development of competency-based programs in various industries, such as construction and healthcare, as a way to provide workers with the skills they need to succeed in a rapidly changing job market (UK Government, 2021). The Organization for Economic Co-operation and Development (OECD) is a global organization that brings together 36 countries to promote policies that will improve the economic and social well-being of people around the world. Many of the countries that are part of the OECD have adopted or are exploring the use of competency-based education in their educational systems.

Recently, the OECD has recognized the potential of competency-based education to support the development of skills and knowledge that are relevant to today's rapidly changing job market. The organization has identified competency-based education as a promising approach to address the skills mismatch that exists in many countries and to provide students with more flexible and personalized learning experiences (OECD, 2018).

In particular, the OECD has highlighted the benefits of competency-based education for disadvantaged students and for those who are pursuing alternative pathways to traditional university-based programs. The organization has also noted the importance of establishing clear learning outcomes and assessments in order to ensure that competency-based programs are rigorous and of high quality (OECD, 2018).

In some OECD countries, such as Finland, competency-based education has been integrated into the national education system and is widely used in schools and universities. In other countries, such as the United States, competency-based education is still in the early stages of adoption, but is gaining momentum as a promising approach to addressing the skills mismatch and providing students with more flexible and personalized learning experiences (OECD, 2018).

Similarly, the case of competency-based education has become increasingly popular in many countries in Asia, as nations seek to improve the quality and relevance of their education systems. In countries such as Singapore, competency-based education has been integrated into the national education system and is widely used in schools and universities. Singapore's education system is widely recognized as one of the best in the world, and the adoption of competency-based education has been credited with contributing to its success (OECD, 2018).

Similarly, Taiwan is one of the forefront countries in the PISA exams of OECD countries. Taiwan has been developing and implementing a competency-based curriculum (CBC) since the early 2000s. The Ministry of Education in Taiwan has been committed to developing a curriculum that focuses on the development of competencies that prepare students for the 21st century.

In 2018, the Ministry of Education implemented a new CBC for elementary and junior high school students. The new curriculum places a greater emphasis on interdisciplinary learning, hands-on experiences, and the development of skills such as critical thinking, problem-solving, communication, and collaboration.

The implementation of the CBC in Taiwan has been met with some challenges, including a lack of understanding of the new curriculum by some teachers and the need for additional training and professional development for educators. However, there have also been positive results, including increased student engagement, improved teaching and learning outcomes, and better preparation for the workforce.

According to a study conducted by Li and Tsai (2019), the implementation of the CBC in Taiwan has resulted in a shift in teaching practices, from teacher-centered to student-centered approaches, and has improved student performance in various areas. The study also found that the implementation of the CBC has led to the development of new instructional materials and pedagogical approaches, as well as increased collaboration among teachers.

Overall, the implementation of the CBC in Taiwan is still ongoing, and further research is needed to assess the long-term impact of the new curriculum on student learning outcomes and workforce readiness.

In other countries in the region, such as South Korea, competency-based education is still in the early stages of adoption, but is gaining momentum as a promising approach to addressing the skills mismatch and providing students with more flexible and personalized learning experiences (OECD, 2018). In India, the government has launched initiatives to promote the use of competency-based education in schools and universities. The government recognizes the importance of preparing students for the rapidly changing job market and the need to develop skills that are relevant to the needs of industry (OECD, 2018).

Main Objective: This paper explores the use of competency-based curriculum by portraying how various countries in OECD utilized the system and to put forward inferences from the challenges, intervention and implementation strategies.

2. Curriculum and Labor Market Demands

The correlation between school curriculum and employment is a complex and multi-faceted issue that has been the subject of much debate and research in recent years. On one hand, there is a growing recognition of the importance of providing students with the skills and knowledge they need to succeed in today's rapidly changing and highly competitive job market (OECD, 2019). On the other hand, there is concern that too narrow a focus on certain subjects or skills may limit students' opportunities and creativity, and leave them ill-prepared for the challenges of the future.

One of the key factors that have been identified as affecting the correlation between school curriculum and employment is the changing nature of work (OECD, 2019). With technological advances and globalization transforming the job market, it is increasingly important for students to have a broad range of skills and knowledge, including critical thinking, problem-solving, and communication, that will enable them to adapt to new and changing circumstances. Despite the recognition of the importance of these skills, there is still a strong emphasis in many school curricula on subjects that are seen as more "practical" or directly related to specific jobs or industries. This can include subjects such as math, science, and business, as well as vocational or technical training in areas like engineering, health care, and IT.

While these subjects can provide students with valuable skills and knowledge, there is a risk that they will become overly focused on the immediate needs of the job market, at the expense of other areas of learning that are equally

important (OECD, 2019). For example, there is evidence to suggest that students who are heavily focused on math and science may miss out on the benefits of a more holistic education, including exposure to the arts, humanities, and social sciences, that can help them develop a more well-rounded and creative perspective on the world. To address these concerns and better align school curricula with the needs of the job market, it will be important for educators and policymakers to take a more comprehensive approach, that recognizes the importance of a broad and well-rounded education, while also preparing students for the realities of the job market (OECD, 2019).

One possible approach is to focus on the development of transferable skills, such as critical thinking, problem-solving, and communication, that are relevant across a range of different fields and disciplines, and will help students to adapt to the changing demands of the job market (NACE, 2020). This can be done through a combination of subject-specific learning, such as math and science, and more interdisciplinary or project-based learning, that encourages students to apply what they have learned in different contexts (OECD, 2019).

In addition, it will be important to provide students with opportunities to gain real-world experience and exposure to different careers, through internships, co-op programs, and other experiential learning opportunities (NACE, 2020). This can help students to develop a better understanding of the job market and the skills and knowledge that are in demand, and make more informed decisions about their future careers (OECD, 2019).

Competency-based education (CBE) is an educational approach that aims to ensure that students have the knowledge and skills they need to succeed in the workforce. The main premise of this approach is that students should not be evaluated based on time spent in the classroom, but rather on their mastery of the subjects they are studying (Cedefop, 2020). This is seen as a way to better align educational programs with the changing demands of the labor market, and to provide students with the skills they need to succeed in an increasingly competitive job market.

One of the key benefits of a competency-based curriculum is that it allows students to work at their own pace and to focus on areas where they need the most improvement (Cedefop, 2020). This is seen as a way to address the needs of students who may be struggling with certain subjects, and to ensure that they have the necessary skills and knowledge to succeed in the workforce. Another key benefit of this approach is that it can help to address the skills gap that exists between what students are learning in school and the skills that are in demand in the workforce (Cedefop, 2020). By ensuring that students are mastering the skills and knowledge that are most relevant to the job market, competency-based curriculum can help to prepare students for the demands of the modern workforce and to increase their chances of success in the job market.

Despite the many potential benefits of competency-based curriculum, there are also some concerns about this approach. One of the key challenges is that it can be difficult to assess students' mastery of subjects in a meaningful and reliable way (Cedefop, 2020). This is because the evaluation of student learning outcomes is based on more subjective measures, such as portfolios and assessments, rather than traditional measures like standardized tests.

Another concern is that competency-based curriculum can be more time-intensive and expensive to implement, particularly in resource-constrained settings (Cedefop, 2020). This is because it requires significant investments in technology, teacher training, and assessment systems, and may not be feasible in all educational settings.

3. The Epistemological Hypotheses of the CBC

Competency-based curriculum refers to an educational approach where learning outcomes are defined in terms of specific competencies or skills that students are expected to master. This approach differs from traditional education (content or knowledge-based curriculum) where the emphasis is on covering a set curriculum of content and knowledge. In competency-based education, assessment is focused on evaluating students' demonstration of competence in the defined skills, rather than just their recall of information.

Furthermore, competency-based curriculum is a teaching and learning approach that centers on students acquiring the skills, knowledge, and attitudes required to solve problems in real-life contexts. The epistemological

hypotheses of competency-based curriculum are grounded in constructivism and pragmatism. According to Piaget (1970), constructivism is a learning theory that posits that learners construct knowledge by actively engaging with the environment. Learners actively seek meaning in their experiences, and knowledge is developed through a process of reflection and inquiry. The epistemological hypothesis of competency-based curriculum is grounded in constructivism, as the curriculum is designed to be experiential, and learning is viewed as a process of active construction of knowledge.

More so, competency-based curriculum is centered on the development of competencies, which are the combination of knowledge, skills, and attitudes required to solve problems in real-life contexts. The development of competencies is facilitated by creating learning environments that encourage students to actively engage with the subject matter. According to Marsh and Willis (2007), competency-based curriculum is designed to promote active learning, collaborative problem-solving, and the integration of knowledge across disciplines.

Likewise, pragmatism is another epistemological hypothesis that underpins the competency-based curriculum. Pragmatism posits that knowledge is a tool that is used to solve problems in the real world. Knowledge is valued for its usefulness, and it is viewed as a means to an end rather than an end in itself. Competency-based curriculum is grounded in pragmatism, as it is designed to provide learners with the tools they need to solve real-world problems.

The competency-based curriculum is designed to ensure that students develop the competencies they need to be successful in the real world. These competencies are defined by industry or professional standards and are designed to be transferable across different contexts. According to Wessel and Zlatkin-Troitschanskaia (2019), the competency-based curriculum is designed to prepare students for the challenges of the 21st century by equipping them with the skills, knowledge, and attitudes required to be successful in an ever-changing world.

In the case of Africa, competency-based curriculum (CBC) has become increasingly popular in the continent. The approach emphasizes the mastery of skills and knowledge as opposed to the accumulation of credits or hours in a traditional educational system. One of the major African problems is the lack of employment and mismatch between the school knowledge and labor market demands. This is one of the major driving forces of the adoption of competency-based curriculum in the continent. Studies have shown that lack of engagement and misconception on the methodology of introducing this curriculum remains a challenge.

4. Review of Related Literature

A review of the literature shows that there has been a growing interest in CBE in Africa, particularly in vocational and technical education. According to Akyeampong and Lussier (2016), the shift towards competency-based education is due to the need to align education with the changing demands of the job market. The traditional education system is seen as inadequate in providing students with the necessary skills and competencies needed to succeed in the modern workplace. A competency-based curriculum is seen as a solution to this problem. One of the key benefits of CBE is that it allows students to learn at their own pace and demonstrate their understanding of a subject before moving on to the next topic. In a traditional education system, students are expected to learn at the same pace, which can be challenging for those who struggle with certain subjects. The flexibility of CBE allows students to focus on areas where they need improvement and accelerate their learning in areas where they excel (Bao, 2019).

Nonetheless, the implementation of CBE in Africa has not been without its challenges. One of the main challenges is the lack of resources and infrastructure to support the approach. According to Mulder and Vermeulen (2017), the success of CBE depends on the availability of technology, appropriate learning materials, and qualified teachers. Unfortunately, many schools in Africa lack these resources, which makes it difficult to implement a competency-based curriculum. Another challenge is the lack of clarity around the competencies that students are expected to master. According to Maunganidze and Mgutshini (2020), there is a need for clear and specific learning outcomes that align with the needs of the job market. Without clear competencies, it can be difficult to assess whether students have mastered the necessary skills.

A study by Alsharif, D'Amour and Lamontagne (2019) examined the development of a competency-based curriculum for a health sciences program in a Canadian university. The study used a case study approach and collected data through document analysis, interviews, and focus groups. The findings showed that the development of the curriculum was a complex process that required collaboration among faculty, students, and external stakeholders. The study highlights the importance of involving stakeholders in the curriculum development process and the need for ongoing evaluation of the curriculum.

Another study by Okeke and Nwosu (2018) examined the effectiveness of a competency-based curriculum in Nigerian technical colleges. The study used a mixed-methods approach and collected data through surveys, interviews, and focus groups. The findings showed that the competency-based curriculum had a positive impact on students' learning and skills development. The study also identified challenges in the implementation of the curriculum, including inadequate resources and limited training for teachers. The study highlights the need for adequate resources and training to support the effective implementation of competency-based curriculum in Nigerian technical colleges.

Dabbagh Kitsantas (2012) reviewed the literature on best practices for competency-based curriculum design. The study identified key principles and practices, including the importance of defining learning outcomes, designing authentic assessments, and providing opportunities for personalized learning. The study also highlighted the need for ongoing evaluation and improvement of the curriculum. The study provides insights into best practices for designing competency-based curriculum and offers recommendations for educators and curriculum developers.

A review of the literature shows that West African countries have been working to develop competency-based education for decades, with the goal of providing students with the skills and knowledge required by the modern workforce. In Nigeria, for example, the National Board for Technical Education (NBTE) has been implementing a competency-based curriculum in vocational and technical education since the early 2000s (Akpan, 2016). The approach has also been adopted by other countries in the region, such as Ghana, Sierra Leone, and Liberia.

One of the key benefits of CBE is that it promotes a more student-centered approach to learning, allowing students to progress at their own pace and demonstrate mastery of a particular skill or competency before moving on to the next. This approach is designed to enhance the relevance and quality of education by ensuring that students develop practical, job-ready skills (UNESCO, 2015).

Nevertheless, the implementation of CBE in West Africa has been met with several challenges. One of the main obstacles is the lack of qualified teachers who can effectively implement the approach. According to Osa-Edoh and Inegbedion (2017), the majority of teachers in West Africa have not been trained in CBE and may not be familiar with the skills and competencies required in the workforce. This gap in teacher capacity may impact the ability of CBE to deliver its intended benefits. Another challenge is the lack of infrastructure and resources, which are necessary to support the implementation of CBE. According to Afolabi and Esu (2015), many schools in West Africa lack the necessary technology and learning materials to effectively implement the approach. This can impact the ability of students to acquire the required competencies.

A review of the literature indicates that a number of East African countries have been working towards the implementation of competency-based education for some time now. In Kenya, for example, the Competency-Based Curriculum (CBC) was introduced in 2017 with the goal of providing learners with the necessary knowledge, skills, attitudes and values to thrive in the 21st century (KICD, 2017). The approach has also been adopted in Tanzania, Uganda, and Rwanda.

One of the main advantages of CBE is that it prioritizes a more learner-centered approach, allowing learners to progress at their own pace and demonstrate mastery of a particular skill or competency before moving on to the next. This approach aims to increase the relevance and quality of education by ensuring that learners develop practical, job-ready skills (UNESCO, 2015).

However, the implementation of CBE in East Africa has also been met with a number of challenges. One of the main obstacles has been the lack of adequate infrastructure and resources, which are necessary to support the implementation of CBE. According to a study by Akello and Kajumbula (2018), many schools in East Africa lack the necessary infrastructure and resources to effectively implement the approach, which can impact the ability of learners to acquire the required competencies.

Another challenge is the need for professional development for teachers and other stakeholders. The success of CBE is largely dependent on the quality of teaching and learning that takes place in the classroom. Therefore, there is a need for comprehensive professional development programs that equip teachers with the skills and knowledge necessary to implement the approach effectively (KICD, 2017).

Tanzania has been implementing competency-based education (CBE) for several years now with the aim of providing a quality education that equips learners with practical skills that are relevant to the country's socio-economic development. This essay provides a literature review of competency-based curriculum in Tanzania, highlighting its implementation, challenges, and potential benefits. The implementation of CBE in Tanzania started with the introduction of the Basic Education Curriculum Framework (BECF) in 2014, which aimed to ensure that learners are equipped with practical skills that are relevant to the needs of the country's economy (URT, 2014). The framework emphasized the need for a more learner-centered approach, where learners are encouraged to demonstrate mastery of specific competencies before moving on to the next level.

One of the main advantages of CBE is that it is more relevant to the needs of learners and the job market. According to Mwakibinga and Simwinga (2019), the approach enables learners to develop a broad range of competencies, including critical thinking, problem-solving, and decision-making skills, which are essential for personal and national development.

However, the implementation of CBE in Tanzania has also faced challenges. One of the main challenges is the lack of sufficient resources and infrastructure to support the implementation of the approach. According to Ndalichako (2017), many schools lack adequate resources, including textbooks and teaching materials, which can impact the quality of teaching and learning. Another challenge is the need for effective teacher training and professional development. As Mwakibinga and Simwinga (2019) note, the success of CBE depends largely on the quality of teaching and learning that takes place in the classroom. Therefore, there is a need for comprehensive professional development programs that equip teachers with the skills and knowledge necessary to implement the approach effectively.

Rwanda is one of the countries in Africa that has embraced competency-based education (CBE) as a framework for improving the quality of education in the country. The country's education system has undergone significant changes since the 1994 genocide, and CBE is seen as an important initiative for equipping learners with the practical skills necessary for socio-economic development. This essay provides a literature review of competency-based curriculum in Rwanda, highlighting its implementation, challenges, and potential benefits.

The implementation of CBE in Rwanda started with the development of the Competence-Based Curriculum (CBC) in 2015, which aimed to provide learners with a curriculum that emphasizes practical skills and hands-on learning (Mugizi et al., 2019). The curriculum focuses on seven core competencies, including communication, critical thinking, creativity, and innovation, and aims to equip learners with the skills necessary for entrepreneurship, innovation, and problem-solving. One of the main advantages of CBE in Rwanda is its potential to improve the quality of education and promote inclusive and equitable access to education. According to Twahirwa (2019), the CBC has been designed to provide a more learner-centered approach, where learners are encouraged to take an active role in their own learning and to demonstrate mastery of specific competencies.

However, the implementation of CBE in Rwanda has also faced challenges. One of the main challenges is the need for sufficient resources and infrastructure to support the implementation of the approach. According to Mugizi et al. (2019), many schools in Rwanda lack adequate resources, including textbooks and teaching materials, which can impact the quality of teaching and learning. Another challenge is the need for effective teacher training and

professional development. As Twahirwa (2019) notes, the success of CBE depends largely on the quality of teaching and learning that takes place in the classroom. Therefore, there is a need for comprehensive professional development programs that equip teachers with the skills and knowledge necessary to implement the approach effectively.

In Somaliland, the lack of knowledge or expertise in competency-based curriculum (CBC) development and implementation is a significant challenge facing many. While CBC is gaining acceptance as an effective approach to education, its success depends largely on the skills and knowledge of the experts or developers who design and implement it. One of the main reasons for the lack of knowledge in CBC is the limited availability of training and professional development opportunities for educators, teachers and curriculum developers in Somaliland education industry. According to unpublished qualitative study by Yasin (2023) on school leadership, Somaliland Ministry of Education is never driven by studies or needs assessment nor they engage relevant stakeholders such as principals, teachers, parents, students, laymen, experts, community and important actors in the review or development of a curriculum or education policy. Studies by the engagement of students in the curriculum had been revealed by Orstein and Hunkins (2009) as they also depicted the importance of inclusive approach. In sum, the limited availability of training and professional development opportunities for educators, curriculum developers, teachers as well as the limited research and knowledge sharing will always remain a challenge in Somaliland curriculum and education trajectory. Addressing this challenge requires a coordinated and collaborative approach at a national level.

According to Juma and Kaehler (2019), many African countries lack the necessary resources and expertise to support the development and implementation of CBC. This results in a gap between the demand for skilled professionals in CBC and the available supply of qualified curriculum expertise.

Another reason is the limited research and knowledge sharing among African countries. In Somaliland, the trends to develop a competency based or review a curriculum is not guided by any study or needs assessment made by the Ministry of Education. Many countries tend to develop their CBC in isolation without sharing experiences or best practices with other African countries. This results in a lack of coherence and inconsistency in the development and implementation of CBC across the continent. According to Moyo and Lubinda (2019), a coordinated and collaborative approach is needed to enhance the development and implementation of CBC across Africa, and Somaliland is no different.

The lack of knowledge and expertise in CBC among experts and developers has significant implications for the successful implementation of CBC. Inadequate knowledge and skills can result in a lack of alignment between the curriculum and the learning outcomes, leading to poor teaching and learning experiences for students. Furthermore, according to many studies in Somaliland, the majority of the teachers at all levels of schools have not been subjected to the modern pedagogical praxis (Gulled, 2019). This may result in ineffective assessment methods that do not accurately measure students' competencies, leading to an inaccurate assessment of student performance.

5. CBC Adoption Strategy: Envisioning the New Paradigm Shift

The introduction of a competency-based curriculum in a country requires a systematic and well-planned approach. The following steps can be taken as a general methodology for introducing competency-based education to a country:

1. **Stakeholder Engagement:** Involve key stakeholders such as educators, policy makers, parents, and students in the development and implementation process (Brown & Trotter, 2017). This will help to ensure that everyone understands the goals and benefits of competency-based education and has a stake in its success.
2. **Curriculum Development:** Develop a competency-based curriculum that aligns with the goals and priorities of the education system and reflects the needs of students and the broader society (Scherer & Reeve, 2017). This may involve revising existing curricula, creating new ones, or adapting existing models to fit the local context.

3. **Teacher Training:** Provide training and professional development opportunities for teachers to ensure that they have the knowledge and skills necessary to implement competency-based education effectively (Hattie & Timperley, 2007). This might involve workshops, online courses, mentoring programs, and other forms of support. According to Yasin (2021) teacher qualifications also account for the variance in the student performance so it should be deemed.
4. **Assessment and Evaluation:** Develop a robust system for assessment and evaluation that aligns with the competency-based curriculum and supports student learning and development (Wiggins, 1998). This might include formative assessments, self-reflection activities, and performance-based assessments that are aligned with real-world applications.
5. **Technical Assistance:** Provide technical assistance and support to schools and teachers as they implement the competency-based curriculum (Scherer & Reeve, 2017). This might include training and support for technology, access to resources and materials, and ongoing support and professional development opportunities.
6. **Monitoring and Evaluation:** Continuously monitor and evaluate the implementation of the competency-based curriculum to identify areas of strength and areas for improvement (Stufflebeam, 1971). This will help to ensure that the curriculum remains relevant, effective, and aligned with the changing needs of students and society.
7. **Communication and Outreach:** Communicate the benefits and goals of competency-based education to parents, students, and the broader community to build support and understanding (Scherer & Reeve, 2017). This might involve presentations, workshops, online resources, and other forms of outreach.

Stakeholder engagement is an essential aspect of curriculum development, as it helps ensure that the final product aligns with the needs and expectations of the various groups who will be impacted by it. In their book, "Curriculum: Foundations, Principles, and Issues," Ornstein and Hunkins (2009) discuss the importance of stakeholder engagement in curriculum development. They argue that curriculum development should be a collaborative process that involves a range of stakeholders, including educators, administrators, students, parents, and community members.

According to Ornstein and Hunkins, stakeholder engagement in curriculum development is important for several reasons. First, it helps ensure that the curriculum meets the needs of all stakeholders. By involving a range of perspectives, the curriculum can be tailored to meet the needs of learners, educators, and the community as a whole. Second, stakeholder engagement can help build support for the curriculum. When stakeholders feel that their opinions and concerns have been heard, they are more likely to support the curriculum and help implement it effectively. Thirdly, stakeholder engagement can help ensure that the curriculum reflects the values and goals of the community. By involving a range of stakeholders, the curriculum can be designed to reflect the community's cultural, social, and economic values, and help prepare students for life in that community.

Ornstein and Hunkins suggest that stakeholder engagement can be achieved through a range of methods, including surveys, focus groups, public meetings, and individual interviews. They also emphasize the importance of ongoing communication and collaboration throughout the curriculum development process. Overall, Ornstein and Hunkins stress the importance of stakeholder engagement in curriculum development as a way to create a more effective, relevant, and culturally responsive curriculum.

Here are a few common approaches to stakeholder engagement in curriculum development:

1. **Surveys and questionnaires:** Surveys and questionnaires can be used to gather information from stakeholders about their needs, expectations, and opinions on the curriculum. This approach allows for a large number of stakeholders to provide input in a relatively short amount of time.
2. **Focus groups:** Focus groups bring together a smaller number of stakeholders for in-depth discussions about the curriculum. This approach can provide valuable insights into stakeholder perspectives and can be especially useful for exploring complex or controversial issues.

3. Interviews: One-on-one interviews and key informant interviews with stakeholders can provide an opportunity to gather detailed information and gain a deeper understanding of stakeholder perspectives.
4. Public meetings and forums: Public meetings and forums provide a platform for stakeholders to voice their opinions and provide input on the curriculum in an open and transparent manner. This dialogue is of paramount importance in the process of curriculum development.
5. Online platforms: In the digital age, there are many online platforms that can be used to engage stakeholders in curriculum development, such as social media, discussion forums, and virtual meetings.

It is important to remember that different stakeholders may have different preferences for how they would like to engage, so it may be necessary to use a combination of approaches to ensure that all stakeholders have an opportunity to provide input. It is also important to listen to the perspectives of all stakeholders, regardless of whether they align with the curriculum development team's views or not, and to make every effort to incorporate their feedback into the final product.

6. Challenges to the Implementation of Competency Based Curriculum

Implementing a competency-based curriculum can present several challenges, including:

Defining Competencies: One of the significant challenges in implementing a competency-based curriculum is defining the competencies that students need to acquire. Competencies must be relevant, meaningful, and measurable to ensure that students can demonstrate their mastery (Spady, 1994). It is also important that the stakeholders come up with the translated term for “competency” in their language. This is not an issue that one person or a group of people can agree upon a word; it is a holistic and inclusive approach where pundits on the language and specialists on the field translate the word with the support of lexicographers.

Assessment: Competency-based education relies on assessments that demonstrate mastery of the identified competencies. The design of assessments that accurately measure the competencies can be challenging, as can ensuring that assessments are both valid and reliable (Stiggins, Arter, Chappuis, & Chappuis, 2006). Educational researchers have always reiterated the need for authentic tests when it comes to the assessment component of the CBC.

Teacher Training: Competency-based education requires a different approach to teaching and learning, and therefore, teacher training is essential. Teachers need to understand how to assess and track competencies, use technology, and manage personalized learning plans (Darling-Hammond et al., 2014).

Time Constraints: Competency-based education is often student-paced, and it can be challenging to ensure that all students complete their required competencies within a given timeframe, especially if students work at different paces (Hockings et al., 2012).

Resource Allocation: Implementing a competency-based curriculum often requires additional resources, such as technology, staff, and infrastructure. Schools and institutions may struggle to allocate the necessary resources to ensure a successful implementation (Kuo et al., 2013).

References

- Afolabi, O. R., & Esu, A. E. (2015). Competency-based education: An imperative for the Nigerian educational system. *Journal of Education and Practice*, 6(2), 128-133.
- Akello, M. M., & Kajumbula, R. (2018). Competency-based education in East Africa: Opportunities and challenges. *Journal of Education and Practice*, 9(8), 22-28.

- Akpan, G. A. (2016). Competency-based education and training (CBET) in Nigeria: Issues and challenges. *International Journal of Development and Sustainability*, 5(3), 114-124.
- Akyeampong, K., & Lussier, K. (2016). Competency-based education and training in Africa: A synthesis report. UNESCO.
- Alsharif, W., D'Amour, D., & Lamontagne, C. (2019). Developing a competency-based curriculum for a health sciences program: a case study. *BMC Medical Education*, 19(1), 63. doi: 10.1186/s12909-019-1506-4
- Australian Government. (2021). Competency-based education and training. Retrieved from <https://www.dese.gov.au/education-system/national-education-reform/competency-based-education-and-training>
- Bao, L. (2019). Competency-based education in Africa: A review of trends, opportunities and challenges. *Journal of Research in Technical and Vocational Education and Training*, 1(1), 7-15.
- Bloom, B. S. (1968). Learning for mastery. *Evaluation Comment*, 1(1), 1-5.
- Brown, J. D., & Trotter, H. (2017). Stakeholder engagement in education reform: A systematic review of the literature. *Review of Educational Research*, 87(2), 378-410.
- Cedefop. (2020). Competency-based education and training. Retrieved from <https://www.cedefop.europa.eu/en/news-and-press-centre/news/competency-based-education-and-training>
- Dabbagh, N., & Kitsantas, A. (2012). Personal learning environments, social media, and self-regulated learning: A natural formula for connecting formal and informal learning. *The Internet and Higher Education*, 15(1), 3-8. doi: 10.1016/j.iheduc.2011.06.002
- Darling-Hammond, L., Wilhoit, G., & Pittenger, L. (2014). Accountability for college and career readiness: Developing a new paradigm. *Education Policy Analysis Archives*, 22, 1-34.
- Hattie, J., & Timperley, H. (2007). The power of feedback. *Review of Educational Research*, 77(1), 81-112.
- Hockings, C., Cooke, S., Bowles, K., Foster, J., & Waller, R. (2012). Student perceptions of support in a student-paced, competency-based assessment system. *Higher Education Research & Development*, 31(2), 217-231.
- Juma, M., & Kaehler, N. (2019). Competence-based education and training in Africa: A literature review. *Journal of Technical Education and Training*, 11(1), 57-72.
- Kenya Institute of Curriculum Development (KICD). (2017). Competency-based curriculum framework. Ministry of Education, Kenya.
- Kuo, Y. C., Walker, A. E., Belland, B. R., & Schroder, K. E. (2013). A predictive study of student satisfaction in online education programs. *The International Review of Research in Open and Distributed Learning*, 14(1), 16-39.
- Li, C. H., & Tsai, C. C. (2019). The implementation of competency-based curriculum in Taiwan: Perceptions and practices of science teachers. *Journal of Science Education and Technology*, 28(1), 1-14. <https://doi.org/10.1007/s10956-018-9757-5>
- Lumina Foundation. (2013). Competency-based education: A review of the literature. Retrieved from <https://www.luminafoundation.org/files/publications/competency-based-education>
- Maunganidze, L., & Mgutshini, T. (2020). Implementing a competency-based curriculum in Zimbabwe: Challenges and prospects. *International Journal of Educational Development*, 77, 102178.
- Ministry of Education, Taiwan. (2018). Competency-based curriculum. https://www.edu.tw/News_Content.aspx?n=9E7AC1261668B4B9&s=AC174F914BCEC1B8
- Moyo, T., & Lubinda, R. (2019). Competency-based education and training in Africa: An exploration of the Zimbabwean perspective. *Journal of Education and Practice*, 10(12), 123-129.
- Mugizi, J., Kamanzi, A., & Rurangirwa, E. (2019). Implementation of competence-based education in Rwanda: Opportunities and challenges. *Journal of Education and Practice*, 10(2), 49-57.
- Mulder, M., & Vermeulen, M. (2017). Competence-based vocational education and training (VET) in Sub-Saharan Africa: Current situation and development. Springer.
- Mwakibinga, J. E., & Simwinga, D. (2019). Competency-based education in Tanzania: Opportunities and challenges. *International Journal of Education and Research*, 7(7), 63-76.
- Ndalichako, J. K. (2017). Challenges facing the implementation of competency-based education in Tanzania. *Journal of Education and Practice*, 8(15), 58-66.
- Oda, J.M., & Bell, C. (2017). Competency-based curriculum development: A case study of a health sciences program in a Canadian university. *Medical Teacher*, 39(2), 177-184.
- OECD. (2018). Competency-based education: What it is and how it can support students. Retrieved from <https://www.oecd.org/education/competency-based-education-what-it-is-and-how-it-can-support-students.htm>
- Okeke, C. N., & Nwosu, L. N. (2018). Competency-based curriculum in Nigerian technical colleges: effectiveness and challenges. *Journal of Technical Education and Training*, 10(1), 83-93.
- Okorie, U., Eze, S. O., & Adaka, S. (2017). Assessing Competency-based Curriculum in Nigerian Technical Colleges. *International Journal of Education and Practice*, 5(1), 13-22.

- Ornstein, A. C., & Hunkins, F. P. (2009). *Curriculum: Foundations, Principles, and Issues* (5th ed.). Boston: Allyn & Bacon.
- Osa-Edoh, G. I., & Inegbedion, H. (2017). Competency-based education and training (CBET) in Nigeria: Issues, challenges, and prospects. *Journal of Education and Practice*, 8(5), 89-96.
- Piaget, J. (1970). Piaget's theory. In P. H. Mussen (Ed.), *Carmichael's manual of child psychology* (Vol. 1, pp. 703–732). New York: Wiley.
- Scherer, R., & Reeve, J. (2017). Curriculum development in competency-based education. In *Competency-Based Education: A Review of Literature and Practice* (pp. 65–76). Routledge.
- Scherer, R., & Reeve, J. (2017). Curriculum development in competency-based education. In *Competency-Based Education: A Review of Literature and Practice* (pp. 65–76). Routledge.
- Scherer, R., & Reeve, J. (2017). Curriculum development.
- Spady, W. G. (1994). *Outcome-based education: Critical issues and answers*. American Association of School Administrators.
- Stiggins, R. J., Arter, J. A., Chappuis, J., & Chappuis, S. (2006). *Classroom assessment for student learning: Doing it right—using it well*. Pearson.
- Stufflebeam, D. L. (1971). *Evaluation theory, models, and applications*. Englewood Cliffs, NJ: Prentice-Hall.
- Stufflebeam, D. L. (1971). *Evaluation theory, models, and applications*. Englewood Cliffs, NJ: Prentice-Hall.
- Tan, O.S., & Bichsel, J. (2018). Competency-Based Curriculum Design: Reflections on Best Practices. *Journal of Curriculum and Instruction*, 12(1), 1-16.
- Twahirwa, J. (2019). Competence-based education in Rwanda: Opportunities and challenges. *International Journal of Education and Research*, 7(7), 93-104.
- UNESCO. (2015). *Competency-based vocational education and training: A global perspective*. UNESCO.
- UNESCO. (2015). *Competency-based vocational education and training: A global perspective*. UNESCO.
- United Republic of Tanzania (URT). (2014). *Basic Education Curriculum Framework*. Ministry of Education and Vocational Training.
- Wiggins, G. (1998). *Educative assessment: Designing assessments to inform and improve student performance*. San Francisco, CA: Jossey-Bass.
- Yasin, G. M., *Teacher Qualifications and Academic Performance of Pupils in Public Primary Schools in Hargeisa District* (July 4, 2021). *Education Quarterly Reviews*, Vol.4 No.3 (2021), Available at SSRN: <https://ssrn.com/abstract=3879923>
- Yasin, G. M. *Effect of Pedagogical Processes on Academic Performance of Pupils in Public Primary Schools in Hargeisa District*.

A Teaching Note on Antitrust and Business

Richard J. Hunter, Jr.¹, John H. Shannon², Henry J. Amoroso³

¹ Professor of Legal Studies, Seton Hall University; Adjunct Professor of Business Law, Collins College of Business, University of Tulsa

² Professor of Legal Studies, Seton Hall University

³ Associate Professor of Legal Studies; Chair, Department of Economics and Legal Studies, Seton Hall University

Abstract

This article is the second in a series on “teaching notes” on subject matter materials found in a standard business law or legal environment of business course. The topic of this teaching note is antitrust. The article discusses the various antitrust *statutes* as they are applied to business; the *reasoning* employed by various courts in analyzing antitrust allegations; and the *rules* utilized by courts in judging any antitrust violations. The article cites many of the most important cases decided by courts in the United States in interpreting how the various statutory and administrative materials should be applied in the context of American business practices. Once these materials have been fully explored, the basic principles and ideas can be applied to the functional area of the business curriculum such as marketing, management, finance, and sports, and the specialized area of franchising.

Keywords: Antitrust, Per Se Violation, Rule of Reason, Horizontal Restraint, Vertical Restraint, Tying Arrangements, Conscious Parallelism, Turn-Key Operation, Consignment Sale

1. Introduction

The implications of antitrust (sometimes internationally called “antimonopoly”) law are especially relevant in American business (see Areeda & Hovenkamp, 2004). For roughly the first 114 years of U.S. economic history, business had a virtual free hand in the field of commerce. The courts and the government took a “hands off” attitude (“laissez-faire”) towards business (Faulkner, 2016; Kanbur, 2016). In the United States, the tide began to turn in the late 1800s as the American public increasingly tired of the irresponsible behavior of some of the “captains of industry,” derisively termed “robber barons.”

The press began to call for reforms and for the protection of the public from abuses of “big business” (see Andrews et al., 2021). In one area, meat inspection, the work of the American author, Upton Sinclair, who centered his novel on the trials and tribulations of a Lithuania immigrant family and its patriarch Jurgis Rudkus, influenced the passage of the *Pure Food and Drug Act of 1906* (Kantor, 1976; Graf, 2020). The assault on unfettered big business, inspired by a generation of pre-World War I “muckrakers” (Lincoln Steffens, Ray Stannard Baker, Samuel Hopkins Adams, Thomas W. Lawson, Brand Whitlock, and perhaps most prominently, Upton Sinclair and Ida M. Tarbell) had begun (Fordham, 2019; Korr, 2020). Although the age of the “muckrakers” had largely faded by

1910-1912, government regulation of business was henceforth to have a significant impact on American business (see Hunter, Shannon, O'Sullivan, & Blodgett, 2011; Hunter, 2011).

Many of the regulations that affect business today in the United States can be traced to the cornerstone of business regulation. The law that changed American business so dramatically was the Sherman Antitrust Act of 1890 (Meese, 2020). This important statute and subsequent legislation in this field is predicated on increasing competition and encouraging competitive behavior (see Clark, 1954; Mahari, 2021; Andrews et al., 2021).

Competition is seen as desirable for the following reasons:

- It promotes efficiency in resource allocation;
- It provides for meaningful consumer choice;
- It assures the avoidance of concentration of political power; and
- It assures basic "fairness" in economic behavior.

Boushey and Knudsen (2021) write:

“Healthy market competition is fundamental to a well-functioning U.S. economy. Basic economic theory demonstrates that when firms have to compete for customers, it leads to lower prices, higher quality goods and services, greater variety, and more innovation. Competition is critical not only in product markets, but also in labor markets. When firms compete to attract workers, they must increase compensation and improve working conditions.”

This article will discuss the three major antitrust statutes in the United States that impact the business environment. In many instances, their specific application will be to franchising in the United States (Hunter & Lozada, 2013a; Hunter & Lozada, 2013b).

2. The Sherman Act (1890)

Section 1 of the Sherman Act is perhaps the most important legislative enactment dealing with an evaluation of a potential restraint on trade. Restraints are considered as either:

- *Horizontal*, that is, where two or more competitors in the market engage in conduct that is a restraint on trade; or
- *Vertical*, that is, a restraint that occurs within a "marketing chain" or within an organizational structure, such as between manufacturer, wholesaler, retailer and consumer, or between the franchisor and franchisee.

The text of Section 1 of the Sherman Act reads:

“Every contract, combination in the form of trust or otherwise, or conspiracy, in restraint of trade or commerce among the several States, or with foreign nations, is hereby declared to be illegal.”

Almost immediately, however, courts began to interpret this section narrowly and developed the "*rule of reason*" as a means of applying the provisions of Section 1 (Loevinger, 1964; Blair & Sokol, 2012).

Thus, only those contracts or combinations that *unreasonably restrain trade* are generally prohibited. The first major case in the United States on point was *Standard Oil of New Jersey v. United States* (1911), in which Standard Oil had attempted to gain control of oil pipelines by engaging in regional price cutting to suppress competition, setting up "bogus" independents to give the impression of competition, and engaging in industrial espionage. While the Supreme Court recognized the existence of the "rule of reason defense," in this case, the Court ruled that in its application, Standard Oil's conduct did not fall within the rule and was not reasonable.

In contrast, it is also recognized that there is conduct that is so lacking in social value or worth that it is seen as a violation of Section 1 *on its face*. Such conduct is termed as a "*per se*" violation of Section 1. If a firm is accused of a *per se* violation, and the government can meet its prima facie burden of proof, the defendant is not permitted to defend its conduct by showing that its conduct was "otherwise reasonable" and it will be deemed guilty of violating Section 1 of the Sherman Act.

2.1. *Per Se Violations*

There are three generally recognized *per se* violations under Section 1 of the Sherman Act.

1. *Horizontal price fixing* (agreements on price among competitors) (Briggs, 1971; Kaplow, 2011; Kaplow, 2018). As the United States Supreme Court noted in *U.S. v. Socony-Vacuum Oil Co.*, 1940): "Any combination or agreement between competitors, formed for the purpose and with the effect of raising, depressing, fixing, pegging, or stabilizing the price of a commodity in interstate or foreign commerce is illegal *per se*."

Price fixing (Briggs, 1971) includes setting minimum or maximum prices (even where there is a "freedom" to charge less than the maximum or more than the minimum), the use of "list prices," and today, the use of minimum fee schedules by certain professional societies, formerly "exempted" under the "learned professions" exception (lawyers, architects, accountants, real estate brokers) (Rogister, 1974/1975; Counts, 1975/1976). Possible violations of Section 1 may also stem from "suggestions" where such actions become "active exhortation," or where the exchange of information regarding prices may take place at required sales meetings, conventions, etc.

It is also important to note that certain businesses are subject to government-regulated prices, as highly "*regulated*" industries. Industries such as airlines, railroads, shipping companies (common carriers), stock exchanges, insurance companies (Malone, 2021), and banks) may be permitted, in fact, to "fix" or set prices without violating antitrust law if a regulatory authority has determined that the rates fixed are in the "public interest" (see also Bush, 2006).

2.2. *Consignment Sales*

In many cases, a manufacturer (especially in a distributorship arrangement) will attempt to determine or "fix" the price of an item through a procedure known as a "*consignment*" sale, also called a "sale or return" contract (Rotherham, 1998). In *Armor All Products v. Amoco Oil Co.* (1995, p. 51), the Supreme Court of Wisconsin stated "This device is used as a price-fixing arrangement whereby the consignor insists that the consignee charge a certain price for goods." In order for a court to determine that a "true consignment" sale has taken place, and thus is exempted from antitrust scrutiny as price fixing, the following factors must be exhibited:

1. The manufacturer/distributor must retain *title* to the goods;
2. The manufacturer/distributor must retain *ownership*;
3. The manufacturer/distributor must retain *risk of loss*; and
4. The manufacturer/distributor must permit the consignee the *right to return* unsold goods.

In the case of certain new car sales, the ability of the consignor to "set" or "fix" the price was attacked because, in fact, there was "*virtually no chance that there would be any unsold goods.*"

2.3. "*Conscious Parallelism*"

In the area of price fixing, it is doubtful that competitors will overtly conspire or agree to fix prices, although there were a few examples from American history in which competitors did just that! As a result, an agreement or conspiracy that violates Section 1 can only be proved by *circumstantial evidence*.

Page (2020, p. 347) noted:

“The Supreme Court once said, “[C]ircumstantial evidence is the lifeblood of antitrust law” (citing *United States v. Falstaff Brewing Corp.*, 1973, p. 534). That was in a merger case, but the observation could also apply to price-fixing litigation under Section 1 of the Sherman Act. Claims of price fixing and other per se violations of Section 1 usually turn on whether circumstantial evidence proves that the defendants formed an agreement—the “contract, combination . . . or conspiracy” the statute requires.”

At this point, the analysis shifts to an agreement based upon the *conduct* of the parties. This is undertaken under a doctrine called "*conscious parallelism*" (see *Interstate Circuit v. United States*, 1939; Crane, 2020). In *Interstate Circuit*, the United States Supreme Court stressed the existence of three required elements:

1. *Knowledge* of competitor pricing;
2. *Motivation* (usually to undercut competition in order to keep prices high);
3. *Substantial unanimity* (usually within a limited range).

Later, in *Theater Enterprises v. Paramount Film Distributor Corp.* (1954), the Supreme Court noted that "The crucial question is whether the respondent's conduct stemmed from an independent decision; or from an agreement tacit or expressed." Conscious parallelism is a difficult and intriguing problem because of a recognized concept in marketing termed "price leadership" (see Roy, Hanssens, & Raju, 1994).

Vertical price fixing or agreements on price among suppliers and customers within a marketing chain or organizational structure, once determined to be a *per se* violation (see *Dr. Miles Medical Company v. John D. Park & Sons Company*, 1911), may be permitted in the area of franchising under a rule of reason analysis because of the unique structure of franchising, but will be closely scrutinized by the courts (Dressler, Warpula, & Young, 2021, citing *Leegin Creative Leather products v. PSKS*, 2007).

2. *Horizontal market divisions* or agreements among competitors are known as *horizontal allocations of markets*. An antitrust violation may occur where an agreement exists among businesses performing similar services or dealing in similar products, whereby the available market is divided up and each allocated a share of the market. In the United States, some heavily "regulated industries" have been granted the right to in fact divide markets if the relevant regulatory agency has determined that this practice would "benefit the public" (see Bush, 2006). One such industry is the airline industry in which regulations have allowed certain U.S. airlines to dominate certain physical markets. (For example, the combined United-Continental Airlines in Newark, N.J. or Denver, Colorado; Delta Airlines in Dallas; or American Airlines in Charlotte, N.C.)
3. *Group boycotts* may involve agreements among competitors not to sell to a particular buyer or not to buy from a particular seller (Mah, 2020). As a general rule, an individual retains discretion to choose with whom s/he wishes to deal. Such a practice or decision is protected under the *business judgment rule* (Manning, 1984; Velasco, 2021. The elements of the business judgment rule are business experience, financial ability, and moral character (especially as it relates to the element of "good will" (Runge, 2022)). However, when a group of competitors agrees not to deal with a person or entity outside the group at all, or only on certain terms, an unlawful boycott may be established, constituting a combination in restraint of trade.

Section 2 is the important antimonopoly provision of the Sherman Act. It reads:

"Every person who shall monopolize, or attempt to monopolize, or combine or conspire with any other person or persons, to monopolize any part of the trade or commerce among the several States, or with foreign nations, shall be deemed guilty of a misdemeanor."

In determining what is or is not an improper or illegal monopoly, courts generally look at two aspects: the *relevant market* and the *percentage share of dominance* in that market (Laskowska, 2014). Some monopolies are deemed as "natural"; that is, they have been created by superior products or through a long-standing domination of the market (Joskow, 2007). Other industries may have been granted monopoly status by the government and are called "regulated monopolies," including power companies, water companies, and until recently, American cable companies (Pettinger, 2019).

In some cases in the past, the Justice Department had determined that 70% is the appropriate threshold that invites scrutiny; in some industries (such as the retail shoe industry or grocery stores), the percentage share may be as low as 4-6% (see *United States v. Von's Grocery Company*, 1966).

2.4. Rule of Reason Considerations

If applicable, a *rule of reason* analysis (Blair & Sokol, 2012) permits the courts to ask several important questions (Carrier, 2019), among them:

1. What is the effect of the alleged restraint on competition?
2. Would the alleged restraint actually promote competition? (see *N. Am. Soccer League, LLC v. U.S. Soccer Fed'n, Inc.*, 2018; *Metro Intercollegiate Basketball Ass'n v. NCAA*, 2004);
3. Has anyone actually been harmed?
4. Was the restraint reasonable and necessary to serve a legitimate competitive purpose?

Carrier (2019, p. 50) states:

“The rule of reason is famously traced to *Chicago Board of Trade v. United States*, in which the Supreme Court called for a comprehensive analysis that considers the facts peculiar to the business to which the restraint is applied; its condition before and after the restraint was imposed; the nature of the restraint and its effect, actual or probable[, as well as] [t]he history of the restraint, the evil believed to exist, the reason for adopting the particular remedy, [and] the purpose or end sought to be attained.”

What are some types of arrangements that may be subject to a Rule of Reason analysis?

a. *Exclusive dealing contract* (the essence of an exclusive distributorship arrangement): wherein one party agrees to deal with a second party exclusively (Solomon & Joffe, 1984; Ornstein, 1989). In some instances, the seller will insist that unless the buyer only buys from the seller, and not from a competitor of the seller, the seller will no longer deal with the buyer. The Federal Trade Commission (FTC) (2023) has noted:

“Most exclusive dealing contracts are beneficial because they encourage marketing support for the manufacturer's brand. By becoming an expert in one manufacturer's products, the dealer is encouraged to specialize in promoting that manufacturer's brand. This may include offering special services or amenities that cost money, such as an attractive store, trained salespeople, long business hours, an inventory of products on hand, or fast warranty service.”

In defense of these arrangements, Hajdini & Windsperger (2019, p. 97) state:

“Exclusive dealing refers to a situation when franchisees agree to offer only services or products of the franchisor's brand. The clause ensures that only the franchisor's products will benefit from his marketing and other promotional activities and that the franchisee's maximum efforts to serve are related only to the franchisor's range of products. This increases its incentive to continue supporting the franchisees. ... in supplier-distributor relationships, the distributor's satisfaction is positively moderated by an exclusive dealing arrangement. ... exclusive dealing mitigates manufacturer-dealer conflict and enhances social welfare. Others find that such clauses facilitate

the promotion of individual brands, increase brand-related and market sales, and lower distributor costs.”

Not all exclusive dealing arrangements are illegal; in fact, most are legal and permissible. Only those arrangements which in fact close off competition or where their effect "may be to substantially lessen competition or tend to create a monopoly..." will be branded as illegal.

In this regard, the FTC (2023), citing *In re the Matter of McWane, Inc. and Star Pipe Products, Ltd.*, notes:

“On the other hand, a manufacturer with market power may potentially use these types of vertical arrangements to prevent smaller competitors from succeeding in the marketplace. For instance, exclusive contracts may be used to deny a competitor access to retailers or distributors without which the competitor cannot make sufficient sales to be viable. For example, the FTC found that a manufacturer of pipe fittings unlawfully maintained its monopoly in domestically-made ductile iron fittings by [requiring its distributors to buy domestic fittings exclusively](#) from it and not from its competitors, who were attempting to enter the domestic market. The FTC found that this manufacturer's policy foreclosed a competitor from achieving the sales needed to compete effectively. On the supply side, exclusive contracts may tie up most of the lower cost sources of supply, forcing competitors to seek higher-priced sources. This was the scenario that led to FTC charges that a large pharmaceutical company violated the antitrust laws by obtaining [exclusive licenses for a critical ingredient](#). The FTC claimed that the licenses had the effect of raising ingredient costs for its competitors, which led to higher retail drug prices.”

b. *Requirements contracts* (a contract in which the quantity is measured by the requirements of the buyer): similar to an exclusive dealing contract, a requirements contract obligates the buyer to purchase all of its requirements from a seller. Again, the rule of reason is used to evaluate such contracts, provided that the underlying contract is legal (see FTC, 2023).

c. *Customer and territory restrictions* (to whom products/services can be sold or where products/services can be sold): Originally, territorial and customer restrictions were considered as *per se* violations by the United States Supreme Court, under a precedent termed the *Schwinn Rule*. In *United States v. Arnold, Schwinn & Co.* (1967), the Court had written: "It is unreasonable without more for a manufacturer to seek to restrict and confine areas or persons with whom an article may be traded after the manufacturer has parted with dominion and control over it." Over time, the *per se* view was set aside, as the Supreme Court now applies the rule of reason to such cases (Bork, 1977; Pollock, 1976/1977).

It is possible, however, for a manufacturer (distributor) to set up a "primary area of responsibility" with sales quotas for its franchisees or other representatives or sales associates. These types of restrictions are common when a franchisor guarantees territories to a franchisee in a concept termed "franchise market area protection" (Seid & Mazero, 2017). This is most often accomplished through using a radius (space/area), zip code (postal code) or population base (i.e., one franchise outlet per _____ thousands of persons) (see Emerson, 2010).

In many cases, the franchisor may allow for expansion within an area by allowing the franchisee, if qualified, to purchase the new location on the same or similar terms available in the franchise system in a comparable market (see Emerson, 2010; Gillis, Combs, & Yin 2020). This is sometimes termed an option or a "right of first refusal." In other cases, the franchisee may be contractually obligated to open a new location or locations within a specified period of time (generally Hunter & Lozada, 2013a; Hunter & Lozada, 2013b).

d. *Tying Arrangements*: In a tying arrangement (Hovenkamp & Hovenkamp, 2015), one party (usually the seller) refuses to sell one product unless the buyer also agrees to purchase a second product or service from the seller (Strasser, 1985; Klein & Saft, 1985; Sagi, 2014; Hajdini & Windsperger, 2019; Fordice, Louvis, Narula, & Salem-Mackall, 2021). In *Northern Pacific R. Co. v. United States* (1958, p. 5-6), the United States Supreme Court stated: "A tying arrangement is 'an agreement by a party to sell one product but only on the condition that the

buyer also purchases a different (or tied product), or at least agrees that he will not purchase that product from any other supplier.” The web site *Cliently* (2023) provides the positive aspects of tie-ins as: (1) safeguarding the seller's quality reputation; (2) assuring distribution efficiencies; (3) providing for risk allocation efficiency; and (4) assuring market power leveraging from the tying to the tied market.

Originally, tying arrangements were considered as *per se* violations (Ahlborn, Evans, & Padilla, 2004). However, many exceptions or justifications have been recognized which permit a court to apply a rule of reason analysis to allegations of illegal tying.

The United States Supreme Court in *Jefferson Parish Hospital District et al v. Hyde* (1984) recognized that tying may, “at least in certain circumstances, be welfare enhancing”:

“[N]ot every refusal to sell two products separately can be said to restrain competition. If each of the products may be purchased separately in a competitive market, one seller's decision to sell the two in a single package imposes no unreasonable restraint on either market, particularly if competing suppliers are free to sell either the entire package or its several parts. . . . Buyers often find package sales attractive; a seller's decision to offer such packages can merely be an attempt to compete effectively--a conduct that is entirely consistent.”

The elements of a tying arrangement include (see *Sea-Land Serv. v. Atlantic Pac. Int'l*, 1999):

- Two products (*Eastman Kodak Co. v. Image Tech Servs.*, 1992) (one of the products can be the trademark or the service mark or the franchise contract itself (*Siegel v. Chicken Delight*, 1971; see also Erickson, 1971);
- "Economic power" on the part of the seller (*Schlotsky's Ltd. v. Sterling Purchasing & Nat'l Distrib. Co.*, 2008); that is, the tying product/service must be desirable (economic power will be automatically inferred from the existence of a patent held by the seller or franchisor (Rupert, 1980; Lavey, 1982);
- There must be an *actual* tie-in (and not just the "opportunity" to purchase goods/services);
- The fact that commerce is "not insubstantially affected." Thus, even a small effect on commerce will bring a tie-in under close scrutiny (Leslie, 2015);
- “No legal justification is present,” that is, the rule of reason will be applied in most cases; and
- Damages (can be shown easily if the tied product can be purchased at a lower cost from a second supplier).

A franchisor, for example, can still offer products and services to a franchisee (generally, Harkins, 1979; Klein & Saft, 1985). An *illegal* tie-in occurs where there is a *requirement of purchase* that cannot be justified under the rule of reason (see Strasser, 1985; Sagi, 2014).

Several "justifications" have been offered under a rule of reason analysis.

1. Sophistication regarding specifications for a product;
2. Quality control (see *Dairy Queen v. Wood*, 1962; Iacobucci, 2003);
3. Product uniformity;
4. The "practically indistinguishable" justification (examples might include Hires Root Beer, Orange Julius, Dairy Queen). In essence, there is only *one product*- the product *is* the franchise; and
5. The “failing company” defense (generally, *United States v. Phillips Petroleum Co.*, 1973).

Some franchisors may attempt to circumvent rules relating to tie-ins by offering what are called "turn-key" operations to franchisees—in essence, full package franchises including land/building/equipment and supplies). A turn-key is not illegal; however, courts have held that no more than a “reasonable amount” of supplies may be stocked in a franchise operating under an initial turn-key, as effects of the turn-key arrangement may only operate for a “reasonable period of time” (Hayes, Rhinehart, & Kvilhaug, 2022). At the outside, this may be no more than necessary to operate the franchise for an "initial reasonable period" of 3-6 months.

3. The Clayton Act

The Clayton Act of 1914 was the second statute designed to encourage competition. The relevant aspects of the Clayton act may be summarized as follows:

- As discussed earlier, Section 3 of the Clayton Act prohibits sales on the condition that the buyer will not deal with competitors of the seller. Three types of contracts fall within the scrutiny of Section 3: "tie-in " sales (Fordice, Louvis, Narula, & Salem-Mackall, 2021), exclusive dealing arrangements (found especially in distributorships), and requirement contracts.

However, perhaps the most important portion of the Clayton Act deals with the area of price discrimination found in Section 2, as amended by the Robinson-Patman Act of 1936 (Koku, 2015; DePasquale, 2015; Bao, 2019).

Under Section 2, as amended, it is unlawful for any person engaged in commerce to:

a. *Discriminate in price* between different purchasers of like grade, quantity, and quality, where the effect may be to substantially lessen competition in any line of commerce, or tend to create a monopoly (by, for example, forcing one party out of business); or

b. *To injure, destroy or prevent competition* (through such indirect actions as "dummy" brokerage fees and unsubstantiated promotional "kickbacks").

The major defense to a charge of price discrimination is that the seller is "meeting" but not "beating" the price being offered by a competitor (*Standard Oil of Indiana v. Federal Trade Commission*, 1951). The defendant can also show that a lower price is being offered because of obsolescence of inventory, seasonal variations in prices, damaged or perishable goods being sold, that the goods are of different grade or quality, or the result of actual "quantity discounts" available to all buyers.

- Section 4 provides for treble damage suits by private individuals for violations of either the Sherman or Clayton Act (Blair and Durrance, 2015), although the U.S. Department of Justice and its specialists in the "Antitrust Division" are primarily responsible for enforcing the Sherman Act.
- Section 6 exempts labor unions, certain agricultural organizations and agricultural cooperative associations, certain farmer and fisherman organizations, export promotion organizations, certain "regulated industries" and other small businesses. [Major League Baseball was granted an exemption to the Sherman Act under *Federal Baseball Club of Baltimore v. National League of Professional Baseball Clubs* (1922), in a much criticized opinion written by Justice Oliver Wendell Homes. No other professional sports organizations are so exempted (see Blair and Wang, 2020; Parker, 2022).]
- Section 7 deals with the area of acquisitions and mergers (see Brueller, Carmeli, & Drori, 2014; Lessambo, 2020). Mergers may be of three general types: *horizontal* (between competitors), *vertical* (between different levels within the marketing chain), or *conglomerate* (between essentially different businesses). A merger might also occur when a company acquires the stock or assets of another firm, involving a special statute, called the Cellar-Kefauver Act of 1950.

Mergers may be challenged when the effect of a proposed merger would be to "substantially lessen competition or tend to create a monopoly."

The period of "merger mania" (see Adams & Brock, 2015) in the United States in the 1980s resulted in a variety of new business practices, vocabulary, and concepts being introduced into the law such as "takeover targets," "poison pills," "junk bonds," "insider trading," "Pac-man defenses," the "S&L scandal," etc. (see Hunter & Frese, 1989; Hunter, 1990; Hunter & Lovisceck,

1997). The "failing company" doctrine, showing that without the merger, one of the firms would have gone out of business, may be raised as a defense in a Section 7 action.

- Section 8 broadly prohibits so-called "interlocking directorates" (Fletcher, Peitz, & Thepot, 2022). That is, no one individual may sit on the board of directors of two or more competing companies if *either* of the firms has capital and surplus (cash) in excess of \$1 million *and* if a merger between them would violate any antitrust law. This section has been largely ignored by the Department of Justice, citing issues relating to public policy or difficulty of enforcement. Rules relating to interlocking directorates may be contrasted with business practices prevalent in Japan and their *keiretsu* (McGuire & Dow, 2002), and *zaibatsu* systems (Kobayashi, 2020; Dogrul & Korkut, 2022).

4. The Federal Trade Commission (FTC) Act of 1914

Section 5 of the FTC Act prohibits "unfair methods of competition" and "unfair and deceptive trade practices" (Carrier & Tushnet, 2021), as well as "false and misleading advertising" (Geller, 2013; Jhanwar & Khanddia, 2020). The Act also created the Federal Trade Commission (FTC) to enforce antitrust laws, especially the Clayton Act. Interestingly, a violation of the FTC Act can be found *without any overt proof* of any deception. A showing that there is a "fair prospect" that the public will be deceived is sufficient to establish that the conduct is unfair and deceptive.

The FTC Act is also intended to stem so-called "bait and switch" advertising (see Friedman, 2018) which involves advertising a product at an especially low or enticing price in order to get a customer into a store (the "bait") and then talking the customer into buying a more expensive model or service (the "switch") because the advertised model is sold out or is no longer available or has some alleged defect that is not found in the original product (see Emamalizadeh, 1983; Friedman, 2013).

Remedies under the FTC Act are also designed to deter, improper conduct. In *Warner-Lambert v. Federal Trade Commission* (1977, p. 762), Judge Skelly Wright noted:

"The FTC may order a respondent to "cease and desist" from certain acts or practices determined to be unfair or deceptive (similar to an injunction issued by a court), or may compel the affirmative disclosure of information previously omitted from an advertisement. The order may extend to products or services other than the products or services covered by the original advertisement which drew the wrath of the FTC. The Commission has adopted the following standard for the imposition of corrective advertising:

[I]f a deceptive advertisement has played a substantial role in creating or reinforcing in the public's mind a false and material belief which lives on after the false advertising ceases, there is clear and continuing injury to competition and to the consuming public as consumers continue to make purchasing decisions based on the false belief. Since this injury cannot be averted by merely requiring respondent to cease disseminating the advertisement, we may appropriately order respondent to take affirmative action designed to terminate the otherwise continuing ill effects of the advertisement."

In certain cases, depending on whether the action was found to be deliberate or unintentional, or whether the violator has a prior history of similar conduct, the FTC may seek civil penalties (Stein, 2019; Huffman, 2022) or other forms of consumer redress such as product recalls, forced repurchases, etc. The FTC may fine a violator up to \$5,000 per violation- *with each day constituting a separate violation*.

4.1. Corrective Advertising

Under *Warner-Lambert v. Federal Trade Commission* (1977) and *United States v. Philip Morris* (2006) (Berry, Burton, Kees, & Andrews, 2021), the FTC may opt for *corrective advertising* (Geller, 2013). [*Phillip Morris* is also noteworthy because on September 22, 1999, the U.S. Department of Justice (“DOJ”) sued several of the largest tobacco companies in federal district court for civil violations of the Racketeer Influenced and Corrupt Organizations Act (“RICO”). On August 17, 2006, Judge Kessler of the U.S. District Court for the D.C. Circuit issued a 1,683-page opinion holding the tobacco companies liable for violating RICO due to their participation in a decades-long scheme to defraud the public about the health risks and addictiveness of smoking.]

Corrective advertising is a form of advertising that admits *in some way* that a product lacks some characteristic or performance feature it was advertised to possess and may be mandated when the FTC believes that it is necessary to correct a false impression created by the respondent's prior advertisements.

4.2. Resale Price Maintenance

The FTC Act also deals with so-called "resale price maintenance" agreements (Bao, 2019) were legal under the Miller-Tydings Price Maintenance Act of 1937, under which a retailer would agree with the manufacturer to charge a single, uniform price so as to assure that the article would be "fair traded" (Greco, 2020). These arrangements are no longer valid. Several important U.S. businesses rose to prominence under the special protection of "fair trade" legislation such as Tupperware and Corning Ware which were "fair traded" all over America.

5. Antitrust Remedies

Violations of several sections of the Sherman Act are punishable by fines—up to \$1 million for a corporation and \$100,000 for an individual, or up to three years in jail or both (see Huffman, 2022). If a corporation violates any of the penal provisions of antitrust laws, an individual director, officer, or agent may be held liable.

There are, in fact, a wide array of additional remedies available to federal courts in the United States including the power of a court to issue orders to:

- a. *Restrain* particular acts or practices (*Federal Trade Commission v. Sysco Corp.*, 2015);
- b. *Compel divestiture* of a subsidiary (*Cal. v. Am. Stores Co.*, 1990);
- c. *Divide* a company's assets, even to the extent of creating a competing entity;
- d. *Compel* a company to *license a patent* with a reasonable royalty, or on a royalty-free basis (*U.S. v. Glaxo Group*, 1973);
- e. *Cancel contracts* entered into in violation of any antitrust law (*Federal Trade Commission v. Great Lakes Chemical Corp.*, 1981);
- f. *Disgorge illegal profits* or *impress a constructive trust* on parties (*United States v. Keyspan Corp.*, 2011).

Private parties may file suit under the Sherman, Clayton, and Robinson-Patman Acts (Blair, 2015) and obtain treble damages. In the case of a Sherman Act violation, a successful plaintiff may also receive reasonable attorney's fees.

6. Concluding Comments

Providing students with a basic understanding of core foundational materials in an area such as antitrust will provide them with the background necessary to apply these concepts and ideas to their more functional areas of study, and eventually, to their chosen professions when issues relating to antitrust may arise.

References

- Adams, W. & Brock, J.W. (2015). 1980's gigantomania follies. *Challenge*, 35(2): 4-8.
- Ahlborn, C., Evans, D.S., & Padilla, A.J. (2004). The antitrust economics of tying: A farewell to per se illegality. *Antitrust Bulletin*, 49(1/2): 287-341.
- Andrews, J.C. et al. (2022). What exactly is marketing and public policy? Insights from JPPM researchers. *Journal of Public Policy and Marketing*, 41(1): 10-33.
- Areeda, P.E. & Hovenkamp, H. (2007). *Antitrust law: An Analysis of antitrust principles and their application* (3rd ed.). Wolters Kluwer Law & Business: New York.
- Armor All Products v. Amoco Oil Co.*, 194 Wisc. 2d 35 (1995). Supreme Court Wisconsin.
- Bao, J. (2019). The economic effect of resale price maintenance and the regulation of antitrust law. 2019 5th International Conference on Economics, Management and Humanities Science (ECOMHS 2019): 28-33.
- Berry, C., Burton, S., Kees, J. & Andrews, J.C. (2021). A longitudinal assessment of corrective advertising mandated in *United States v. Philip Morris USA, Inc.* *Journal of Business Ethics*, 171: 757-770.
- Blair, R.D., & Durrance, C.P. (2015). Private damage actions under the Robinson-Patman Act. *The Antitrust Bulletin*, 60(4): 384-401.
- Blair, R.D. & Sokol D.D. (2012). The rule of reason and the goals of antitrust: An economic approach. *Antitrust Law Journal*, 78(2): 471-504.
- Blair, R.D. & Wang, W. (2020). Rethinking major league baseball's antitrust exemption. *Journal of Legal Aspects of Sport*, 30(1): 18-40.
- Bork, R.H. (1977). Vertical restraints: Schwinn overruled. *Supreme Court Review* (University of Chicago), 1977: 171-192.
- Boushey, H. & Knudsen, H. (2021). The importance of competition for the American economy (Blog), *Ground News* (July 9, 2021), <https://ground.news/article/the-importance-of-competition-for-the-american-economy>; <https://www.whitehouse.gov/cea/written-materials/2021/07/09/the-importance-of-competition-for-the-american-economy/>
- Briggs, T.R. (1971). What is price fixing? *Antitrust Law Journal*, 41(1): 74-83.
- Brueller, N.N., Carmeli, A. & Drori, I. (2014). How do different types of mergers and acquisitions facilitate strategic agility? *California Management Review*, 56(3): 39-57.
- Bush, D. (2006). Mission creep: Antitrust exemptions and immunities as applied to deregulated industries. *Utah Law Review*, 2006(3): 761-810.
- Carrier, M.A. (2019). The four-step rule of reason. *Antitrust*, 33(2): 50-55.
- Carrier, M.A. & Tushnet, R. (2021). An antitrust framework for false advertising. *Iowa Law Review*, 106(4): 1841-1884.
- Cal. v. Am. Stores Co.*, 495 U.S. 271 (1990). Supreme Court of the United States.
- Chicago Board of Trade v. United States*, 264 U.S. 231 (1918). Supreme Court of the United States.
- Cellar-Kefauver Act*. 64 Stat. 1125 (1950).
- Clark, J.M. (1954). Competition and the objectives of government policy. In *Monopoly and competition and their regulation*, E.H. Chamberlain (ed). International Economic Association Conference Numbers 1-50. Palgrave Macmillan: London.
- Clayton Act*. 38 Stat. 730 (1914).
- Cliently (2021). What is tie-in sales and how to avoid it: Everything you need to know. Cliently.com (December 18, 2021), <https://www.cliently.com/blog/tie-in-sales>
- Counts, C.W. (1975/1976). *Goldfarb v. Virginia State Bar* – Applying the antitrust laws to the legal profession. *Howard Law Journal Bar Association*, 19: 149-158.
- Crane, D.A. (2020). The new crisis in antitrust (?). *Antitrust Law Journal*, 83(1): 253-268.
- Dairy Queen v. Wood*, 369 U.S. 469 (1962). Supreme Court of the United States.
- DePasquale, C. (2015). The Robinson-Patman Act and the consumer effects of price discrimination. *Antitrust Bulletin*, 60(4): 402-413.
- Dogrul, M. & Korkut, C. (2022). Transformation of the institutional political economy of Japan: From rice field property reform to zaibatsu. *EGE Academic Review*, 23(1): 89-105.
- Dr. Miles Medical Company v. John D. Park & Sons Company*, 220 U.S. 373 (1911). Supreme Court of the United States.
- Dressler, E.H., Warpula, CC., & Young, C. (2021). Current advice on managing resale prices in franchising. *Franchise Lawyer*, 24(4): 3-6.
- Eastman Kodak Co. v. Image Tech. Servs.*, 504 U.S. 451 (1992). Supreme Court of the United States.
- Emamalzadeh, H. (1983). Bait-and-switch advertising: A conceptual approach. *Proceedings of the 1983 Academy of Marketing Science*: 458-460, https://link.springer.com/chapter/10.1007/978-3-319-16937-8_109.
- Emerson, R.W. (2010). Franchise territories: A community standard. *Wake Forest Law Review*, 45: 779-851.

- Erickson, M.L. (1971). Siegel v. Chicken Delight: Continued erosion of defenses to tying arrangements. *American Business Law Journal*, 9(1); 21-38.
- Faulkner, H.U. (1951/2016). *The decline of laissez faire, 1897-1917*. Routledge: New York.
- Federal Baseball Club of Baltimore v. National League of Professional Baseball Clubs, 259 U.S. 200 (1922). United States Supreme Court.
- Federal Trade Commission (2023). Exclusive dealing or requirement contracts, <https://www.ftc.gov/advice-guidance/competition-guidance/guide-antitrust-laws/dealings-supply-chain/exclusive-dealing-or-requirements-contracts> (last accessed February 25, 2023).
- Federal Trade Commission Act. 38 Stat. 719 (1914).
- Federal Trade Commission v. Great Lakes Chemical Corp., 528 F. Supp. 84 (1981). U.S. District Court for the Northern District of Illinois
- Federal Trade Commission v. Sysco Corp., 83 F. Supp. 3d 271 (2015). U.S. District Court for the District of Columbia.
- Fletcher, A., Peitz, M., & Thepot, F. (2022). Introduction to special issue on common ownership and interlocking directorates. *Journal of Competition Law & Economics*, 18(1); 1-4.
- Fordham, H. (2019). *Muckraker*. In George Seides' war for the public good. Palgrave: London.
- Fordice, N.J., Louvis, E., Narula, M., & Salem-Mackall, T. (2021). Antitrust violations. *American Criminal Law Review (Annual Survey of White Collar Crime)*, 58(3): 563-610,
- Friedman, D.A. (2013). Explaining "bait and switch" regulation. *William & Mary Business Law Review*, 4: 575-638.
- Friedman, D.A. (2018). "Dishonest search disruption": Taking deceptive-pricing tactics seriously. *University of California Davis Law Review Online*, 50: 121-147.
- Geller, M.A. (2013). *Advertising and the maintenance of competition- The Federal Trade Commission*. Routledge: New York.
- Gillis, W.E., Combs, J.G., & Yin, X. (2020). Franchise management capabilities and franchisor performance under alternative franchise ownership strategies. *Journal of Business Venturing*. 35(1): 1-20, <https://econpapers.repec.org/RePEc:eee:jbvent:v:35:y:2020:i:1:s0883902617307760>
- Goldfarb v. Virginia State Bar, 421 U.S. 773 (1975). Supreme Court of the United States.
- Graf, R. (2020). Truth in the jungle of literature, science, and politics: Upton Sinclair's *The Jungle* and food control reforms during the progressive era. *Journal of American History*, 106(4): 901-922.
- Greco, A.J. (2020). A concise history of United States resale price maintenance arrangements and its current status under state and federal laws. *Journal of Advanced Research in Law and Economics*, 47: 26-36.
- Hajdini, I & Windsperger, J. (2019). Contractual restraint and performance in franchise networks. *Industrial Marketing Management*, 82: 96-105.
- Harkins, J.G. ((1979). Tying and the franchisee. *Antitrust Journal*, 47(4): 903-914.
- Hayes, A., Rhinehart, & Kvilhaug, S. (2022). Turnkey business: Definition, how to operate with examples. Investopedia (December 17, 2022), <https://www.investopedia.com/terms/turnkeybusiness.asp>
- Hovenkamp, E. & Hovenkamp, H. (2015). Chapter 14: Tying arrangements. In *The Oxford handbook of international antitrust economics*, Vol. 2, R.D. Blair & D.D. Sokol (eds.), https://scholarship.law.upenn.edu/faculty_scholarship/1902/
- Huffman, M. (2022). Civil sanctions in antitrust enforcement. In *The Cambridge handbook of competition law sanctions*, T. Toth (ed): 205-217. Cambridge University Press: Cambridge, UK.
- Hunter, R.J. (1990). Insider trading revisited. *Res Gestae*, 33(8): 393-395.
- Hunter, R.J. (2011). Judicial review of administrative rule making. *Mustang Journal of Law and Legal Studies*, 2: 31-39.
- Hunter, R.J. & Frese (1989). The genesis of an ethical imperative: The Sec in transition. [The ethical. Implications of statutory and administrative solutions to insider trading: A comprehensive legislative, administrative, judicial and policy study.] *Gonzaga University Law Review*, 25(1): 9-64.
- Hunter, R.J. & Loviscek, A. (1997). Insider trading revisited: The misappropriation theory and beyond. *The Howard University Law Review*, 41(1): 79-123.
- Hunter, R.J. & Lozada, H.E. (2013a). A primer on franchising in the United States: A vehicle for economic mobility. *Global Journal of Management and Business Research: Economics and Finance*, 13(4): 43-52.
- Hunter, R.J. & Lozada, H.E. (2013b). The legal aspects of the franchise relationship. *Global Journal of Management and Business Research: Finance*, 13(6): 1-14.
- Hunter, R.J., Shannon, J.H., O'Sullivan-Gavin, & Blodgett, M.S. (2011). Regulation: A historical perspective and discussion of the impact of the commerce clause and the fourteenth amendment and the move to deregulate the American economy. *University of LaVerne Law Review*, 32: 137-164.
- Iacobucci, E.M. (2003). Tying as quality control: A legal and economic analysis. *The Journal of Legal Studies*, 32(2): 435-464.
- Interstate Circuit v. United States, 306 U.S. 208 (1939). Supreme Court of the United States.

- In the matter of McWayne, Inc., and Star Pipe Products, FTC Matter/File Number 101 0080b (April 17, 2005). Federal Trade Commission.
- Leegin Creative Leather products v. PSKS, 551 U.S. 877 (2007). Supreme Court of the United States.
- Jefferson Parish-Hospital District No. 1 v. Hyde, 466 U.S. 2 (1984). Supreme Court of the United States.
- Jhanwar, R. & Khanddia (2020). Advertising and its misleading. *International Journal of Law Management & Humanities*, 3: 1126-1138.
- Joskow, P.L. (2007). Chapter 16. Regulation of natural monopoly. *Handbook of Law and Economics*, Vol. 2: 1227-1348.
- Kanbur, R. (2016). The end of laissez-faire, the end of history, and the structure of scientific revolutions. *Challenge*, 59(1); 35-46.
- Kantor, A.F. (1976). Upton Sinclair and the Pure Food and Drugs Act of 1906. *American Journal of Public Health (AJPH)*, 66(12): 1202-1205.
- Kaplow, L. (2011). An economic approach to price fixing. *Antitrust Law Journal*, 77(2): 343-450.
- Kaplow, L. (2018). Price-fixing policy. *International Journal of Industrial Organization*, 61: 749-776.
- Klein, B. & Saft, L.F. (1985). The law and economics of franchise tying contracts. *The Journal of Law and Economics*, 28(2): 345-361.
- Kobayashi, K. (2020). Effects of Japanese financial regulations and keiretsu style groups on Japanese corporate governance. *Hastings International & Comparative Law Review*, 43: 339-364.
- Koku, P.S. (2015). Which laws do your marketers know? Some legal issues on price discrimination (Conference Paper): 395-399. *Developments in Marketing Science: Proceedings of the Academy of Marketing Science*, https://link.springer.com/chapter/10.1007/978-3-319-18687-0_145
- Korr, M. (2020). From MD's to Muckrakers: Fighting for passage of Pure Food and Drug Act. *Rhode Island Medical Journal*: 64-66.
- Laskowska, M. (2014). Monopoly and public policy. *Business Law Review*, 35: 211-213.
- Lavey, W.G. (1982). Patents, copyrights, and trademarks as sources of market power in antitrust cases. *Antitrust Bulletin*, 27(2): 433-455.
- Leslie, C.R. (2015). The commerce requirement in tying law. *Iowa Law Review*, 100(5): 2135-2160.
- Lessambo, F.I. (2020). Economic effects of antitrust laws on mergers and acquisitions: 17-30. In *Mergers in the global markets*. Palgrave Macmillan: London.
- Loevenger, L. (1964). The rule of reason in antitrust law. *Virginia Law Review*, 50(1): 23-35.
- Mah, S. et al. (2020). Antitrust violations. *American Criminal Law Review*, 57(3): 413-458.
- Mahari, R. (2021). Time for a new antitrust era: Refocusing antitrust law to invigorate competition in the 21st century. *Stanford Computational Antitrust*, 1: 52-63.
- Malone, M. (2021). Sharing is not always caring: Reevaluating the insurance industry's antitrust exemption and information sharing in the machine-learning era. *Houston law Review*, 58(4): 987-1014.
- Manning, B. (1984). Business judgment rule in overview. *Ohio State Law Journal*, 45(3): 615-628.
- McGuire, J. & Dow, S. (2002). The Japanese keiretsu system: An empirical analysis. *Journal of Business Research*, 55: 33-40.
- Meese A.J. (2020). Antitrust regulation and the federal-state balance: Restoring the original design. *American University Law Review*, 70: 75-166.
- Metro Intercollegiate Basketball Ass'n v. NCAA, 337 F. Supp. 2d 563 (2004). U.S. District Court for the Southern District of New York.
- Miller-Tydings Price Maintenance Act. 50 Stat. 693 (1937).
- North Am. Soccer League, LLC v. U.S. Soccer Fed'n, Inc., 883 F.3d 32 (2018). U.S. Court of Appeals for the 2nd Circuit.
- Northern Pacific R. Co. v. United States, 356 U.S. 1 (1958). Supreme Court of the United States.
- Ornstein, S.J. (1989). Exclusive dealing and antitrust. *Antitrust Bulletin*, 34(1): 65-98.
- Page, W.H. (2020). Direct evidence of a Sherman Act agreement. *Antitrust Law Journal*, 83(2): 347-391.
- Parker, E. (2022). The inevitability of major league baseball's antitrust exemption. *Arizona State University Sports and Entertainment Law Journal*, 11(2): 23-62.
- Pettinger, T. (2019). Regulation of monopoly. *Economics Help* (July 28, 2019), <https://www.economicshelp.org/microessays/markets/regulation-monopoly/>
- Pollock, E.E. (1976/1977). Schwinn per se rule: The case for reconsideration. *Northwestern University Law Review*, 71(1): 1-16.
- Pure Food and Drug Act. 34 Stat. 768 (1906).
- Racketeer Influenced and Corrupt Organizations Act (RICO). 84 Stat. 922 (1970).
- Robinson-Patman Act. 49 Stat. 1526 (1936).
- Rogister, G.T. (1974/1975). Antitrust law- The Sherman Act and minimum legal fee schedules: Learned professions and state-action immunity. *North Carolina Law Review*, 53(2): 399-409.
- Rotherham, C. (1998). Sale or return contracts. *The Cambridge Law Journal*, 57(3): 429-471.

- Roy, A., Hanssens, D.M., & Raju, J.S. (1994). Competitive pricing by a price leader. *Management Science*, 46(7): 809-823.
- Runge, J. (2022). What is goodwill in business? *Managing Your Business* (May 2, 2022), <https://www.legalzoom.com/articles/what-is-goodwill-in-business>
- Rupert, D.W. (1980). The relationship of patent law to antitrust law. *Antitrust Law Journal*, 49(2): 755-774.
- Sagi, G. (2014). A comprehensive economic and legal analysis of tying arrangements. *Seattle University Law Review*, 38(1): 1-36.
- Schlotsky's, Ltd. v. Sterling Purchasing & Nat'l Distrib. Co.*, 520 F.3d 393 (2008). U.S. Court of Appeals for the Fifth Circuit.
- Sea-Land Serv. v. Atlantic Pac. Int'l*, 61 F. Supp. 1102 (1999). U.S. District Court for the District of Hawaii.
- Seid, M.H. & Mazero, J. (2017). Protected and exclusive areas in franchising. *Dummies* (August 30, 2017), <https://www.dummies.com/article/business-careers-money/careers/franchise-management/protected-exclusive-areas-franchising-243626/>
- Sherman Act. 26 Stat. 209 (1890).
- Siegel v. Chicken Delight*, 448 F.2d 43 (1971). U.S. Court of Appeals for the 9th Circuit.
- Solomon, L.M. & Joffe, R.D. (1984). Exclusive distribution and antitrust. *Fordham Law Review*, 53(3): 491-526.
- Standard Oil of Indiana v. FTC*, 340 U.S. 231 (1951). Supreme Court of the United States.
- Standard Oil of New Jersey v. United States*, 221 U.S. 1 (1910). Supreme Court of the United States.
- Stein, G.A. (2019). Understanding the FTC's monetary equitable remedies under section 13(b) for antitrust violations. *Antitrust*, 34(1): 59-65.
- Strasser, K.A. (1985). An antitrust policy for tying arrangements. *Emory Law Journal*, 34(2): 253-294.
- Theater Enterprises v. Paramount Distributor Corp.*, 346 U.S. 537 (1954). Supreme Court of the United States.
- United States v. Arnold, Schwinn & Company*, 388 U.S. 365 (1967). Supreme Court of the United States.
- United States v. Falstaff Brewing Corp.*, 410 U.S. 526 (1973). United States Supreme Court.
- United States v. Glaxo Group Ltd.*, 410 U.S. 52 (1973). Supreme Court of the United States.
- United States v. Keyspan Corp.*, 763 F. Supp. 2d 633 (2011). U.S. District Court for the Southern District of New York.
- United States v. Phillips Petroleum Co.*, 367 F. Supp. 1226 (1973). U.S. District Court for the Central District of California.
- United States v. Philip Morris*, 9 F. Supp. 2d 1 (2006). U.S. District Court for the District of Columbia.
- United States v. Socony-Vacuum Oil Co.*, 310 U.S. 150 (1940). Supreme Court of the United States.
- United States v. Von's Grocery Company*, 384 U.S. 270 (1966). Supreme Court of the United States.
- Velasco, J. (2021). Fiduciary judgment rule. *William & Mary Law Review*, 62(4): 1397-
- Warner-Lambert v. Federal Trade Commission*, 361 F. Supp. 948 (1973). U.S. District Court for the District of Columbia.

Contributions of Digital Competencies toward the Speaking Skills in English Language Classes in Ecuadorian Elementary Schools

Juan Pin Mero^{1,3}, Marcos Saltos Mendoza^{1,3}, Jhonny Villafuerte-Holguín^{2,3}

¹ Students of Program PINE at the University Laica Eloy Alfaro de Manabí, Ecuador

² Professor at University Laica Eloy Alfaro de Manabí, Ecuador

³ Member of the research Project: *Desarrollo profesional del Profesor de Inglés de la Zona 4 de Ecuador*. Grupo de investigación: *Innovaciones pedagógicas para el desarrollo sostenible*

Correspondence: Jhonny Villafuerte-Holguin. Email: jhonny.villafuerte@uleam.edu.ec

Abstract

Digital competences are key factors for the professional developing of teachers of English as a Foreign Language (EFL) in Ecuador. This work aims to identify the contributions of digital competences in the speaking skills of a group of elementary school children. In the research process, the sample was integrated for nine elementary school students and fifteen EFL teachers took. The methodology selected was a mixed. The research techniques used to collect data were semi-structured interviews, contextual observation, and English language pre-tests and post-tests. Results show the teacher's digital competencies evolution and its contribution to the children speaking skills. It concludes that teachers with a higher level of digital competencies can improve children speaking skills. Thus, the students speaking skills in this study changed from 5,02 overage in the pre-test to 8,64 points in the post-test. The changes in speaking skills are significantly positive.

Keywords: Digital Competencies, Speaking Skills, Education, Language, Ecuador

1. Introduction

In 2014, the Ministry of Education in Ecuador recognized the need to improve the English as a Foreign Language teaching and learning process in the whole educational system of education (Villafuerte, 2019). It remarked the high importance of people's interaction and communication worldwide. The National Curriculum Guidelines created in the profiles students must have at each stage of their education are specified.

To Cutipa (2020), managing the proper knowledge of digital competencies has become an essential condition in teaching work because these promote the correct interaction between knowledge and student to obtain a different and innovative way of teaching and the dynamism when learners acquire information.

Gomez_Torres (2022) stated that technological resources contribute significantly to acquiring a second language since students feel more motivated in the XXI century to learn a second language. Likewise, Sousa et al. (2022) stated that students use technology intensively. Teachers should guide and encourage their students to use technology in the classroom. In this way, digital tools are a positive factor and benefit in learning English.

Within the same context, Piña (2020) infers that using technological resources in the planning and development of classes promotes a better level of the students' English communicative skills. He remarks on the growth of fluency and development of speaking in the learners; it makes them active participants and allows them to have a more significant relationship with more real actions and contexts.

The exploration of elementary schools in Ecuador showed there are limitations to empowering ICT in education. In addition, most schools do not have technological access to help the development of communication skills of students, thus emphasizing the acquisition of a second language. EF index 2022 shows that Ecuador is ranked 82 out of 111 countries marked in the ranking, which is evidence of the necessity of overcoming people's English language knowledge (Abanto, 2022).

Students' class participation enhances their critical thinking and production skills and abilities. It goes beyond just understanding the text at this level of thinking. Learners who participate in class demonstrate that they have studied the material well enough and can share their knowledge with the rest of their peers and even give their opinions and perspectives.

The author's motivation is to provide reliable information about teachers' digital competencies contribution to English language speaking skills students in Ecuadorian elementary schools. The authors propose the following research questions:

1. What digital competencies do EFL teachers use in their professional practice?
2. What are the students attitudes and values toward digital competences?
3. How digital competencies contribute to students' speaking skills in english language?

The research hypothesis proposed in this study is as follows:

Ho = The contribution of digital teacher skills to students' speaking skills is insignificant.

This work aims to determine the contribution of teachers' digital competencies to elementary school students' speaking skills in English as a Foreign Language.

2. Literature review

2.1. Speaking skills in children

Speaking skills involving people conveying and receiving a message in diverse milieus with various purposes such as persuading and expressing opinions.

Regarding the theories of linguistics, Halliday & Matthiessen (2004) establish that understanding the contexts allows a more detailed understanding of the terms used in the communication process. For his part, Halliday (2008) affirms that the meaning of the terms exceeds the possible limitations that grammar imposes. However, Almurashi (2016) maintains that learners of a foreign language tend to prioritize using grammatical rules and linguistic structures when using the language. Despite this, Domagała et al. (2021) affirm that language acquisition emerges in the human being from the exchange with people. Culture uses terms that can change from one location to another to refer to the same object.

Besides, "People talk wherever they go, and having skills in any spoken language help in face-to-face conversation, to know what to say, where to say it, and when to say something" (Gudu, 2015, p. 55). Thus, teaching young learners to communicate in English as a foreign language is challenging since many elements may hinder the process of learning a second language. Teachers must seek the appropriate technique, method, or strategy to engage children in the learning process, especially when they learn phrases they do not understand because these are out of local context.

Based on the experience of Piña (2020), he infers that the methodologies to be applied in the XXI century should focus on a virtual environment conducive to students. In this way, the execution of activities and their skills will develop better; in the case of speaking, they will find a more appropriate introduction to more authentic and interactive activities.

In addition, students must live different interactive activities with the target language because people learn a language by using it in a natural environment (Oliver & Philp, 2014, p. 123). To Dewi (2016), when learners work on projects, they are engaged in purposeful communication in a natural context.

The development of speaking skills in elementary school students emphasizes the selection of words (diction), word wrangling, and intonation of reading sentences and expressions (Permana, 2015). Students become motivated and engaged when these two are related. Students need to learn through fun activities other than traditional learning methods that lead them to halt their learning rather than enable it.

Project-based learning is an effective method used to promote learners' English language learning and skills. Research results showed that project-based learning positively affects students' English learning performance and skills (Poonpon, 2011; Wahyudin, 2017). In recent years, project-based learning has been variously integrated into the EFL context to promote authentic learning and teaching of English.

Storytelling may be a proper teaching strategy to develop elementary students' oral production. It demonstrates that learners can learn and understand a target language using stories (Chomsky in Hsu, 2015). Thus, "the best thing for adults helping young learners acquire language would be to expose them to a variety of language input in the form of stimulating stories.

One advantage of teaching young learners is that "most children, when they start to learn a second language, want immediate results, even after their first lesson. They will want to show friends or family that they can speak English." (Sánchez, 2014, p. 19). Consequently, it is essential to preserve students' eagerness to discover and play with a foreign language; one way may be through stories.

Gamification is immersed in the innovation of education to exercise the student as the main character of his learning process. It can increase children's engagement with the course materials and improve their motivation, participation, and achievement results.

Thus, one of the tools to exercise active participation by students is digital resources, which assist teachers today and allow for shaping a digital society, thus turning learners into direct protagonists of their lifelong learning (Longmore et al., 2018).

Gomez-Torres (2018) indicates that acquiring a second language tends to be very complex if one does not have the right resources and strategies to improve student participation. However, meaningful learning leaves small pillars as a base that, little by little, they will develop.

2.2. Digital Competencies

Digital competence is related to the knowledge, capacities, and attitudes to consume, evaluate, and create learning information and to collaborate and communicate with others for learning purposes (European Commission, 2019; He and Li, 2019; Janssen et al., 2013). Thus, research and teaching development must focus on discovering identifiable knowledge assets and specific competencies that could, with a higher degree of probability, empower students to respond adaptively to changing demands at an ever-increasing speed (Gebhardt et al., 2015).

In the educational field, the branch of study called educational technology seeks to solve the needs of a citizenry in the teaching-learning process and the proper use of Information and Communication Technologies such as ICT (Rodríguez & Gómez, 2017). The correct use of technology in the educational process requires educators to have good technical and dynamic knowledge. Meanwhile, Bazalar (2017) states that teachers' digital competencies allow them to use basic programs such as Excel, Word, and PowerPoint and send and receive mail. Likewise,

appropriate treatment of the information, the implementation of websites, and didactic platforms around the EFL teaching. In consequence, ICT in the class of English as a foreign language can provide practices that contribute to the student's development of communicative and linguistic skills and higher thinking skills. Likewise, it increases the motivation of students and the meaningful learning of a foreign language class. According to Amaya et al. (2018, p. 10-21), teachers can use the following strategies to improve:

1. Communication and collaborative academic networking. - (a) Academic best practices can be shared online, inside and outside the university, (b) Online professional networks allow faculty to complement their professional and career development; and (c) Online collaboration tools encourage collective writing and support faculty in the development of publications.
2. Save time by carrying out administrative and school control procedures. - (a) Electronic data management facilitates the control and retrieval of student information, (b) Electronic media management improves communication and response time in the delivery of grades and academic performance reports.
3. Increase their performance and academic productivity. - (a) Access to and analysis of bibliographic information sources available on the Web contributes to incorporating updated educational content and resources into curricula. (b) Electronic formats for elaborating learning activities favor teachers' feedback and evaluation of programmed activities.
4. Support and promote educational creativity and innovation. - (a) The incorporation of ICTs in the academic work of teachers sets the stage for innovative initiatives, such as the "inverted classroom." (b) Effective ICT management facilitates the design of didactic strategies and teaching techniques that adapt to students' different learning styles and rhythms.
5. Complement traditional academic work with the incorporation of technological applications. - (a) The use of asynchronous tools, such as self-assessments, sending activities, discussion forums, wikis, and blogs, complements the teaching work in traditional classrooms. (b) Access to success stories in traditional classrooms, (c) success stories in any discipline available on the Web helps students complement their knowledge and academic experience.
6. Promote in teachers a positive attitude towards lifelong learning. - (a) ICT proficiency provides teachers with the competencies, skills, and attitudes needed to succeed in any work environment, even in their personal lives. (b) By learning about international trends related to education, teachers develop intercultural learning and enhance their academic work.

According to Tamayo (2018, p. 9), there are three levels of knowledge:

(1) the introduction which establishes the provision of resources to educational institutions and familiarization, (2) the application is understood by a broader knowledge of the characteristics of these digital tools in the educational context of the teaching work; and (3) the level of integration the educator can immerse in using ICT with an adequate recognition of the virtual environment, ceasing to be simple digital accessories to become essential elements in teaching.

In such scenarios, Jarrín & Kim (2019, p. 21) affirm that:

It is necessary to know and analyze the continuing education of teachers and their interests regarding innovation in the classroom. Researchers follow three objectives: 1) To analyze teachers' conceptions of methodological innovation from their professional experience; 2) To identify the primary resources and materials they use for their teacher training; 3) To detect difficulties in implementing innovations in the classroom.

According to Arguel et al. (2019), students with higher digital competence can solve cognitive disequilibrium by making sense of digital learning materials. They can deal with learning requirements more effectively, thereby being more capable of addressing challenges in online learning and less likely to suffer from frustrating feelings and emotional distresses. Thus, learners having a higher digital competence can easily interpret and understand online learning materials and perform well in online learning (López-Meneses et al., 2020).

In addition, the implemented methodology encompasses the didactics within the use of ICT as an essential tool in the student's academic training in current times (López et al., 2020). It proves to be conducive to selecting adequate, reliable information and supports learning for problem-solving (Quiñones, 2020). Therefore, instructors with an adequate and optimal level of digital competence can recognize the various ways to present, recapitulate, share

and communicate all the information available from the different sites on the Internet. However, according to Cutipa (2020), teachers' level of digital competence will depend on how much teachers use and know about these technological resources.

2.3. Informatic means and the instruction of English as a Foreign Language

To Valdivieso (2016, p. 67), informatic means is a set of resources and tools "for the specific training that allows citizens to handle themselves competently in the digital era, making optimal use of technological means".

People use ICT because they develop the ability to acquire knowledge of human beings which has manifested in a restructuring in organizations, social, professional, and academic (Islas, 2017). ICTs have added value since they integrate a variety of resources along with information in the teaching-learning process (Almerich et al., 2016). Thus, technology has become a communication facilitator, making it practical, quality, and efficient. On the other hand, it is an essential instrument of society within its educational context. Consequently, ICT contributes significantly to classroom development, implementing new methods and strategies of interest to the current students' generation (Vinueza & Gallardo, 2017).

To Urrutia et al. (2017), ICTs give a developmental aid to the content exposed within the curriculum, as well as the integration of resources and tools that provide innovation to the teaching-learning process to favor the development of the students. Thus, digital media in the educational context benefits the teaching-learning process standing out instructors' role as facilitator and guide, the one who uses these resources to address adequately, control, and observe students learning the work of students (Moreno, 2017). Meanwhile, Gómez (2018) argues that ICTs promote a better and more specialized treatment to address students' academic training. They provide methodologies that facilitate teamwork and integration, pose more appropriate resolutions to tasks or projects and, together with the internet, improve the sharing of information and knowledge acquisition. Thus, "Information and Communication Technology are essential to make people's work more productive by streamlining communications and supporting teamwork" (Pita, 2018, p. 504).

The United Nations Educational, Scientific and Cultural Organization (UNESCO) stated in 2018 that technologies framed in the educational context unfold fundamentally with an essential role towards universal access to information and knowledge acquisition. On the other hand, TIC is a transversal axis for teaching with a quality approach towards professional training, self-training, and preparation of future educators, coupled with the correct management of educational institutions. According to Luna (2018), digital tools and technological resources are linked between three essential parts to share knowledge: transmission, processing, and storage. They are allies in developing communicative and technical skills between teachers and students.

The integration of ICT into the educational process requires teachers' training but also urges the necessity of eliminating the traditional schemes of learning that involve a closer interaction of subject and object that transcends the face-to-face lessons. Furthermore, such technology incorporation includes using informatic tools in the learners' life conditions outside the classroom and their appreciation towards correct and suitable management in such contexts (Gámez et al., 2018). Besides, integrating ICT into the educational process establishes a specific nesting between relevance, quality, and concreteness to improve students' learning process, also encompassing the development of practices (Aguar et al., 2019). Finally, ICT in the teaching-learning process promotes a better understanding and analysis of the contemporary school, which requires innovations to create new attitudes and increase the use of alternatives to achieve learners' optimal performance (Wang, 2021).

Rodríguez (2020) work shows that the appropriate knowledge of ICTs by English language teachers is established as promoting leadership in the teaching-learning process and autonomous work that significantly improves the development of production skills such as speaking. The work of Farfan et al. (2017) is among the previous studies revised in this research. They found that the strengthening of communication skills supported by ICT goes beyond the intention of the syllabus. However, it is immersed in the work of the English language teacher since it significantly helps to analyze the student's weaknesses and strengths for learning. In addition, the significant capacity of the resources offered by ICTs to optimize and enhance the teaching and learning process.

On the other hand, ICT can promote the acquisition of a foreign language within its subject matter and concreteness. Puentes (2020) states that when teachers direct the use of ICT in the English language classroom, a vast improvement demonstrates an advance in oral communication skills. In addition, an essential factor in the children's learning is their wish, interest, and motivation for learning the English language, which substantially favors the level of language acquisition.

3. Methodology

This work is ascribed to the postmodern paradigm. It used a mixed research approach to determine the contribution of English language teachers' digital competencies to developing students' English language speaking skills in elementary school. The research methods used in this work were literature review, exploratory, descriptive, and interpretative.

3.1. Participants

The EFL teachers worked in the 2nd, 4th, and 7th grades at ten elementary schools in Manta, Ecuador. 60% of teachers worked in public, and 40% in private schools. The participants were 15 English language teachers and nine elementary school students. In Addition, 50% of the students were boys, and 50% were girls. They all attended the 7th grade of elementary public schools in the exact location of the teachers.

3.2. Instruments

The research team used the following instruments for collecting information:

3.2.1. Contextual observation form. - The purpose of this instrument was to identify the students attitudes and values towards the digital competences. The possible answers were: (1) level not achieved, (2) initial level, (3) in-process achievement level, (4) Higher achievement level. A panel of researchers from the University Eloy Alfaro de Manabí in the fields of English as foreign language instruction, Educational Psychology, and Education evaluated the instrument. The evaluators' recommendations were (a) to train the observers to assign the teaching practices correctly and (b) to run six observations at least. The observations were 12 lessons over four months in online classes using Zoom and Microsoft Teams.

3.2.2. Speaking assessment test of Cambridge press (Pre-Test, Post-Test). – The purpose of this instrument was to collect data related to learners' speaking skills changes. The instrument was an adaptation of the Cambridge Placement Test made by the research team. The instrument was tested by a professional with more than five-year experience in EFL instruction. Following the experience of Farfán et al. (2017), the research team evaluated: (1) pronunciation quality on topics related to greetings, feelings, colors, animals, body parts, drinks and food, and family members, (2) fluency, and (3) use of the vocabulary. The research team used the instrument in the English language classes for 5 minutes per student.

3.2.3. Semi-structured interview guide. - The instrument aimed to collect information on the domain level of EFL teachers' digital competencies. The instrument consists of 8 semi-structured questions. Two questions per each category: (1) Communication and collaboration, (2) Problem resolution, (3) Information and literacy, and (4) Digital content creation. A panel of professional researchers of the University Eloy Alfaro de Manabí in foreign language instruction, psychology, and educational management evaluated the instrument. The evaluators' recommendations were (a) to reduce the original version's twelve questions to eight questions that concentrated on the four categories proposed. The instrument focused on EFL teachers of elementary schools in Manta, Ecuador. Each interview lasted 40 minutes using the Zoom application.

3.3. Procedure

Stage 1: It included the selection of participants. Teachers and children's parents or legal tutors signed the consent letter to participate in this research.

Stage 2: Preparation of instruments for data collection. It includes the evaluation process for the panel of experts and the implementation of the recommendations and corrections received.

Stage 3 consisted of the EFL Teacher interview and the categorial analysis of the information collected.

Stage 4: It consisted of the execution of the student's listening skills evaluation and the data analysis using the program SPSS version 24.

Stage 3: Class observation consisted of applying the contextual observation format 12 times over three months.

Stage 4: It consisted of the posttest of students' English language skills and the data analysis.

Statistical Analysis: The process used the SPSS version 24. The studies applied were Kolgomorove Index to confirm the normality of the data series and the T-student index to analyze the hypothesis.

Stage 6: It consisted of the redaction of the information.

4. Results

The results are presented following the order of the research questions that appearing in the introduction section.

4.1. Students' attitudes and values toward digital competencies

The table 1 shows the students attitudes and values during the online practices in EFL classes.

Table 1: Students' attitudes and value observed towards digital competencies in online practice

Degree of development	Degree of development achieved				Remarks
	1	2	3	4	
The students were punctual at the time of the virtual classes.	0%	5%	15%	80%	It should be mentioned that 30% of students had connectivity problems. They sometimes connected a few minutes late.
They were attentive to the explanations of the teachers	7%	0%	10%	83%	Students several times were distracted by various situations at their homes. Such as people, noise, etc.
They turn on their cameras and microphones	0%	2%	15%	83%	Students show more attention to the topic when it involves games.
They work more collectively	0%	1%	80%	19%	Students showed a positive attitude to work together
They are attracted by the games on the web sites	15%	0%	10%	75%	Students showed more attention to the subject matter when involving games of duties and rights.
They ask questions about the subject	0%	20%	15%	65%	Students generally presented a few questions.
Stay connected in class	0%	10%	85%	5%	Most of the students keep connected until the end of class.
Feel confident participating in a group	0%	15%	10%	75%	Since it is a group of students that already knows each other, they are confident to participate and work as a team.
Students concentrate more when it is game time.	0%	0%	10%	90%	Sometimes the students would lose focus for a moment, but by the time of teacher present instructions

students returned to concentration.

Source: Class observations form (2020).

Note: Achieved=4, In process=3, Initial progress=2, Not achieved =1

Based on the contextual observation, the research team verified the good performance of the students in the different sections of the classes, which proved to be of their entertainment and pleasure with topics of interest and according to the level of elementary school.

4.2. EFL Teachers' perceptions about digital competences

The EFL teachers' perceptions about their digital competences appear in table No. 2. The data corresponds to the beginning of the research (pretest). The categorial analysis used the following categorial tree:

Category 1. - Communication and collaboration. It demonstrates the interaction that teachers in the use of ICT have with other co-workers, and to be able to help and teach their correct use. The subcategories used for the analysis were: Higher, moderate, low level.

Category 2. - Problem resolution, this section demonstrates the capacity that educators have to be able to solve and give a solution within the management of virtual environments. The subcategories chosen for this research were: Higher, moderate, low level.

Category 3. - Information and literacy: Teachers' theoretical and practical usage of the technological resources. The subcategories used were: Higher, moderate, low level.

Table 2: Digital competences of EFL teachers

Teacher's evidences	Sub category: Level
Category 1: Communication and collaboration	
<i>P1. It saves time in planning and motivates students to be attentive to the EFL class throughout the day, as well as contributing to all language skills.</i>	High
<i>P2. ICT helps significantly in the development of the activities, saving time, and making them more appealing for students the wish to participate in EFL class.</i>	High
<i>P3. ICTs are very important in the learning process. The use of ICT also helped during the pandemic, not only to keep children in learning activity but also to generate new knowledge.</i>	High
<i>P4. ICTs contribute a lot to the English language teaching process, but if you do not have a good command of digital tools, they are going to harm you instead of supporting you.</i>	High
<i>P5. In my experience as an English and computer teacher, I have been able to make the most of digital tools that offer free access, they have helped me in the development of language skills and my students enjoy learning.</i>	High
Category 2: Problem resolution	
<i>P1. I have seen great improvements in students' communication skills especially in speaking and listening. However, it does require time to domain their usage.</i>	Moderate
<i>P2. ICT has greatly facilitated the creation of reports, assignments, evaluations and game routines. The most of my students have improved greatly in language skills. The difficulty is the selection of the appropriate tool.</i>	Moderate
<i>P3. Errors can occur after creating an activity using ICT, either because of the internet or because the computer becomes slow. Digital tools demand having good informatic devices.</i>	High
<i>P3. When teachers are not trained in the use of ICT, they can find more difficulties than contributions for improving teaching practices.</i>	High
<i>P4. Students also have difficulties to access to ICT. Sometimes they do not understand well the use of applications when teacher explains. It requires time.</i>	High
Category 3: Information and literacy	
<i>P1. I have not dared to evaluate them yet with any digital tool, but I am learning how to run a test through kahoot and quizziz.</i>	Low
<i>P2. Fortunately, I have been able to evaluate my students 4 times through H5P, an excellent tool that gives you great testing options that revolve around didactics.</i>	High

<i>P3. If I have evaluated my students through a quiz and google form, so far, they have been able to carry out the development of the tests in a satisfactory manner, I am pleased that with these tools, I can see their average obtained.</i>	High
<i>P4. I have used Genially once but it was because my brother had helped me to run it, not because of my own development. I'm not very good with ICT.</i>	Low
<i>P5. Google form presents many more possibilities to use in evaluations, but I do not know how to use it.</i>	Low
Category 4: Digital content creation	
<i>P1. I feel confident and secure in front of my students at the time of developing my classes, also because I have good digital competences.</i>	High
<i>P2. Digital competences are essential for every teacher to anticipate the material to use in EFL classes. Usually, I base it on reviewing the material of the unit, adapt it to a power point or an informatic application.</i>	High
<i>P3. It is essential for every teacher to have the teaching activities already planned using ICT, because this avoids improvising, maintaining the role of guide and educator, and anticipate problems. I prepare activities and digital resources and I review them the night before the EFL class.</i>	High
<i>P4. I usually use videos to teach. They should be according to the curriculum and lesson plan.</i>	Low
<i>P5. Totally, in every single day I select the resources and activities I am going to use in class. I always remember that children are very visual.</i>	Low

Source: Semi-structured interview (2020-2021).

Concerning to the category 1: Communication and collaboration. - The evidence showed that teachers understand the contribution of ICT on the EFL instruction.

For the category 2: Problem resolution. – the evidence showed that the main difficulties are related to the access to informatic devices and Internet connection. In addition, teachers training persists as a relevant difficulty to overcome.

For the category 3: Information and literacy. – the evidences show a division of EFL teachers related to those who have developed the digital competences and the group of teachers have poor digital competences.

Finally, for the category 4: Digital content creation. – The evidence shows a new division in the EFL teachers related to the frequency and level of their own digital content production for EFL instruction purposes. Thus, the most of the EFL teachers participating in this research only use video and power point to support their lessons.

4.3. Contribution of EFL teachers' digital competencies toward students' speaking skills in elementary education

Table No. 3, shows the students' pretest and posttest marks and the improvement level reached.

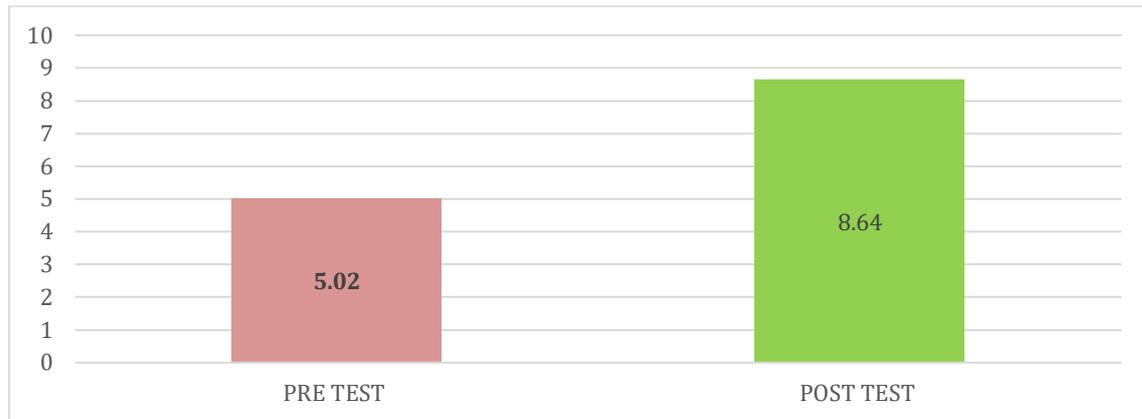
Table 3: Students pretest and posttest marks

Participants	Pretest marks	Posttest marks	Change
P1	3	8	+3
P2	2	9	+7
P3	4	9	+5
P4	2	7	+5
P5	4	8	+4
P6	2	8	+6
P7	3	9	+6
P8	4	8	+4

P9	3	9	+6
----	---	---	----

Source: Students pretest and post test results (2021)

The graphic 1 compares the overage pretest and posttest results of students speaking skills.



Graphic 1: Participants EFL speaking skills in pretest and post-test.

Source: Research project (2021).

The data collected shows a relevant progress in the students speaking skills when their EFL practices are correctly supported with ICT. When EFL teachers have improved their digital competences, they reach better results in students speaking achievement. Thus, students passed from 5,02/10,00 in the pretest to 8,64 in the post test.

4.4. Hypothesis evaluation

Ho: The contribution of teachers' digital skills on the development of students' English language skills is not significant.

Ha: The contribution of teachers' digital skills on the development of students' English language speaking skills is significant.

Related samples Statistics

		Media	N	Desviation	Media tipic error a
Par 1	VAR00001	3,0000	9	,86603	,28868
	VAR00002	8,3333	9	,70711	,23570

Related differences					t	gl	Sig. (bilateral)
Media	Tipic deviation	Mean tipical error	95% confidence index				
			Inferior	Superior			
-5,33333	1,00000	,33333	-6,10200	-4,56467	-16,000	8	,000

The p-value = 0.000; p-value < 0.05; therefore, the alternate hypothesis is accepted. Consequently, the strengthening of the digital skills of English teachers has a positive impact on the improvement of elementary education students' English language speaking skills.

5. Discussion

Based on the literature review, the research team agreed with the position of López et al. (2020), referring to teachers requiring a mastery level in digital competencies to manage and transmit EFL knowledge, develop communicational skills, and teaching strategies through the use of ICT.

In addition, the authors ratify the position of Farfán et al. (2017) concerning the contribution of digital competencies to the EFL teaching process, from the execution of the curriculum to diverse goals related to the teaching practice, educational administration, and students' EFL knowledge improvement. In addition, based on the results obtained, authors remark that teachers require at least 40 hours of training courses every semester to update their digital competencies.

According to Puentes (2020), an optimal and efficient response to the innovation of EFL instruction can use or not digital resources. Thus, in the area of English instruction, the use of ICT directed by the teacher demonstrated in this research the improvement of the student's foreign language acquisition process, evidencing an advance in oral communication skills. In addition, an essential factor in the children's learning and the instructors' training is their motivation to learn about the uses of digital applications and informatic devices.

Based on the information collected, the research team can affirm that the EFL teachers participating in this research reported a moderate level of digital competencies. However, improving their training in the digital field is not an obstacle. Teachers' digital competence development is moderate. While some EFL teachers are immersed in digital resources and improve their level of competence, others still need to be more confident before using computers and other informatic devices. Besides, the students show interest in the innovation of teaching methods that include using informatic devices in EFL classes. Thus, students denote better work and progress when classes include ICT use because of their visual and auditory teaching tools.

The analysis of the contextual observations allows the authors to affirm that students had good behavior and appropriate attitudes during all sessions. It was possible to determine a positive degree of acceptance and management of the English classes using the websites.

Concerning the data on English essential vocabulary acquisition using ICT in elementary school students, it is evident a remarkable improvement in their speaking skills. The use of websites that provide a digital resource to reinforce the teaching-learning process is highlighted. Thus, the average of 5.02/10 reported in the speaking skill pretest indicated a need for academic reinforcement. On the other hand, after having executed the activities of the educational intervention to improve teachers' digital competencies, the students' speaking skill posttest obtained 8.64/10 average. It ratifies that improving teachers' digital skills increase students' speaking skills.

According to all the results, the authors state that using ICT in the classroom contributes to developing the student's language skills. Teachers should use not only textbooks and theory but also virtual platforms and learning environments. They take advantage of that children quickly become familiar with technological resources. In addition, teachers are responsible for self-learning new and updated ways of teaching to go deeper into the field of ICT. They bring to the acquisition and practice of English as a foreign language.

Authors recommend that future and current teachers learn and research those technological tools that can be of great use in the development of their classes since there are many free tools available that allow the creation of content in any subject.

6. Conclusions

Based on the literature review and the results obtained in the research, the authors declare 100% compliance with the planned research aim: To determine the contribution of teachers' digital competencies to elementary school children's speaking skills in English as a Foreign Language. The participants reported a significant change in their speaking skills from 5.02 to 8,64 over 10,0 points. The weakness of this study is the size of the corpus, which does

not allow for generalizing the results. However, this research work contributes to the reflection on the digital competencies of English teachers and their contribution to improving elementary school students' EFL speaking skills performance. The authors invite the scientific community to carry out similar studies to generate new valuable information regarding the research line: Digital competencies and their contribution to English language teaching in elementary education.

References

- Abanto León, J. Y. (2022). El aprendizaje colaborativo y uso de las TIC en los docentes: revisión sistemática. Retrieved from: https://repositorio.ucv.edu.pe/bitstream/handle/20.500.12692/82893/Abanto_LJY-SD.pdf?sequence=1 (11 Feb 2023)
- Aguiar, B., Velazquez, R., & Aguiar, J. (2019). Innovación docente y empleo de las TIC en la Educación Superior. *Revistas Espacios*, 40(2) 1-20. Retrieved from: <http://repositoriobibliotecas.uv.cl/handle/uvscl/2134> (11 Jan 2023)
- Allais, C. (2015). *Focus on Oral Interaction* In: Rhonda Oliver, Jenefer Philp Oxford University Press, Oxford.
- Almerich, G., Orellana, N., Suárez, J. & Díaz, I. (2016). Competencias de los docentes en tecnologías de la información y la comunicación: un enfoque estructural. *ELSEVIER*, 110-125. DOI: <https://doi.org/10.1016/j.compedu.2016.05.002>
- Almurashi, W.A. (2016). An Introduction to Halliday's Systemic Functional Linguistics. *Journal for the Study of English Linguistics*, 4(1), 70-80. <https://doi.org/10.5296/jsel.v4i1.9423>
- Amaya, A., Zúñiga, E., Salazar, M., & Ávila, A. (2018). Empoderar a los profesores en su quehacer académico a través de certificaciones internacionales en competencias digitales. *Revista Apertura*, 10(1), 104-115. DOI: <http://dx.doi.org/10.32870/Ap.v10n1.1174>
- Arguel, A., Lockyer, L., Lipp, O. V., Lodge, J. M., & Kennedy, G. (June de 2017). *ResearchGate*. Retrieved from: Detecting Learners Confusion to Improve Interactive Digital Learning Environments: https://www.researchgate.net/publication/309366496_Inside_Out_Detecting_Learners_Confusion_to_Improve_Interactive_Digital_Learning_Environments. (10 Jan 2023).
- Bazalar, E. G. M. (2017). El uso de la plataforma moodle y el nivel de competencias digitales en los docentes de la escuela universitaria de educación a distancia-EUDED-UNFV 2017. Thesis of the program: Maestro en administración de la educación. Universidad cesar Vallejo. Retrieved from: <https://repositorio.ucv.edu.pe/handle/20.500.12692/14878> (19. Jan. 2022).
- Cutipa, L. A. (2020). *Competencias digitales en la retroalimentación formativa de docentes de una Institución Educativa de San Juan de Lurigancho*. Retrieved from: <https://hdl.handle.net/20.500.12692/61904> (10 Jan 2023).
- Domagała-Zyśk, E., Moritz, N., & Podlewska, A. (2021). English as a Foreign Language for Deaf and Hard of Hearing Learners. *Routledge Focus*. <https://doi.org/10.4324/9781003162179>
- Farfán, G., Villafuerte, J., Romero, A., & Intriago, E. (2017). Tecnologías de apoyo para el fortalecimiento de las destrezas comunicativas en lenguas extranjeras docentes de inglés. *Revista de Medios y Educación*, 51(1), 183-195. <http://dx.doi.org/10.12795/pixelbit.2017.i51.12>
- Gómez, O. Y. A. (2018). Las TIC como herramientas cognitivas. *Revista interamericana de investigación, educación y pedagogía*, 11(1), 67-80: <https://doi.org/10.15332/s1657-107X.2018.0001.07>
- Gomez-Torres, S. Y. (2022). Entornos virtuales en la enseñanza de los docentes de educación básica regular nivel primario: una revisión sistemática. Retrieved from: https://repositorio.ucv.edu.pe/bitstream/handle/20.500.12692/77658/Gomez_TSY-SD.pdf?sequence=1 (10 Mar 2023).
- Gámez, F. I. L., Rodríguez, M. R., & Torres, L. E. S. (2018). Uso y aplicación de las TIC en el proceso de enseñanza-aprendizaje. *Revista Científica de FAREM-Esteli*, (25), 16-30: <https://doi.org/10.5377/farem.v0i25.5667>
- Gürbüz, C., & Cabaroğlu, N. (2021). EFL students' perceptions of oral presentations: Implications for motivation, language ability and speech anxiety. *Journal of Language and Linguistic Studies*, 17(1), 600-614. Retrieved from: https://files.eric.ed.gov/fulltext/EJ1294925.pdf?fbclid=IwAR1tHcyLYCEwI_unIdq15qFTULI8i4jTgfbxOz8I7DKrPwPw3owI7tFFUZs (10. Feb. 2022)
- Halliday, M. & Matthiessen, C. (2004). *An introduction to functional grammar*. London: Routledge. Retrieved from: [https://www.scirp.org/\(S\(351jmbntvnsjtl1aadkposzje\)\)/reference/ReferencesPapers.aspx?ReferenceID=1793849](https://www.scirp.org/(S(351jmbntvnsjtl1aadkposzje))/reference/ReferencesPapers.aspx?ReferenceID=1793849). (11.Feb.2023).

- Halliday, M. (2008). *Complementarities in language* (1st ed.). Editorial Commercial Press. Retrieved from: [https://www.scirp.org/\(S\(351jmbntvnsjt1aadkposzje\)\)/reference/referencespapers.aspx?referenceid=2348269](https://www.scirp.org/(S(351jmbntvnsjt1aadkposzje))/reference/referencespapers.aspx?referenceid=2348269). Beijing.
- Hsu, T.-C. J. (October de 2015). *ResearchGate*. Obtenido de Telling tales: Using storytelling to teach EFL kindergarten students in Taiwan. Retrieved from: https://www.researchgate.net/publication/276343447_Telling_tales_Using_storytelling_to_teach_EFL_kindergarten_students_in_Taiwan/fulltext/5acba55ea6fdcc8bfc85fd70/Telling-tales-Using-storytelling-to-teach-EFL-kindergarten-students-in-Taiwan.pdf (19 Feb 2023).
- Islas, C. (2017). La implicación de las TIC en la educación: Alcances, Limitaciones y Prospectiva. *RIDE. Revista Iberoamericana para la Investigación y el Desarrollo Educativo*, 8(15), 861-876. <https://doi.org/10.23913/ride.v8i15.324>
- Janssen, J., Stoyanov, S., Ferrari, A., & Punie, Y. (July de 2013). *ResearchGate*. Retrieved from: Experts' views on digital competence: Commonalities and differences: https://www.researchgate.net/publication/244476899_Experts'_views_on_digital_competence_Commonalities_and_differences (19 Feb 2023).
- Jarrín, X., & Kim, C. (2019). Improving speaking skill using the speaking practice tool Spacedeck. *Espirales revista multidisciplinaria de investigación científica*, 3(1), 89–90. <https://doi.org/10.31876/er.v3i30.619>
- Khodabandeh, F. (s.f.). *Teaching English with Technology*. Retrieved from: The impact of storytelling techniques through virtual instruction on English students' speaking ability: <https://files.eric.ed.gov/fulltext/EJ1170637.pdf> (18 Feb 2023).
- López, A., Burgos, D., Branch, J. W., & Younes-Velosa, C. (2020). Un nuevo paradigma en la enseñanza universitaria basado en competencias digitales para profesores. *Campus Virtuales*, 9(2), 71-82. <http://uajournals.com/ojs/index.php/campusvirtuales/article/view/737> (22 Sep 2022)
- Luna, D. (2018). Cómo transformamos la vida de los colombianos a través de las TIC. Retrieved from: <https://davidluna.com.co> (1. Feb. 2022)
- Morales Urrutia, E. K., Morales Urrutia, X. A., & Ocaña Chiluisa, J. M. (2017). Las TICS en la educación intercultural. *Revista Publicando*, 4(11(1)), 369-379. Retrieved from: <https://revistapublicando.org/revista/index.php/crv/article/view/531> (11 Feb 2023)
- Moreno, M. (2017). Ventajas de estudiar con las nuevas tecnologías. UNI>ERSIA ESPAÑA. Retrieved from: <http://noticias.universia.es/ciencia-tecnologia/noticia/2017/08/23/1155196/ventajas-estudiar-nuevas-tecnologias.htm> (10. Mar. 2022).
- Murillo-Zamorano, L. R., Sánchez, J. Á., Godoy-Caballero, A. L., & Muñoz, C. B. (17 de March de 2021). *SpringerOpen*. Obtenido de Gamification and active learning in higher education: is it possible to match digital society, academia and students' interests?. Retrieved from: <https://educationaltechnologyjournal.springeropen.com/articles/10.1186/s41239-021-00249-y> (11 Feb 2023)
- Organización de las Naciones Unidas para la Educación, la Ciencia y la Cultura. [UNESCO]. (2018). *Las Tecnologías de la Información y la Comunicación (TIC) en la Educación*. Paris: UNESCO.
- Olsson, S. (2018). A qualitative study of how four compulsory school teachers view the role of oral proficiency. Retrieved from: https://www.diva-portal.org/smash/get/diva2:1187797/FULLTEXT01.pdf?fbclid=IwAR2p50ThXjWnsF8MtSYdW_8HTTYCJOvnp0KdvnK8ifvLuHLwhsf1416AsrY (10. Feb. 2022).
- Pita, G. E. C. (2018). Las TICs en las empresas: evolución de la tecnología y cambio estructural en las organizaciones. *Dominio de las Ciencias*, 4(1), 499-510. <http://dx.doi.org/10.23857/dom.cien.pocaip.2017.4.núm.1.enero.499-510>
- Pernyataan, Y. M. (2022). *University of Makassar*. Retrieved from: The Students' Interest in Using Duolingo as a Learning Media in Speaking: https://digilibadmin.unismuh.ac.id/upload/30388-Full_Text.pdf?fbclid=IwAR0sWE7hos71Xo6nww0LZHd9fpoJkECrgLL_6heOjIqRk9dfm9LDSht_yTY (10 Feb 2023).
- Piña, E. (2020). Los entornos virtuales de aprendizaje (EVA). Una Estrategia didáctica para la administración de unidades curriculares universitarias. *REDIUNP*, 1, 2, 18-27. <http://www.revistas.unp.edu.ar/index.php/rediunp/article/view/119/104>. (10 Feb 2023).
- Puentes, J.M. (2020). *Strengthening of the communicative competence of English, in the sixth grade students of the Caldas Institute, through a didactic strategy mediated by ICT*. Retrieved from: <http://hdl.handle.net/20.500.12749/12482>(10 Feb 2023)
- Quiñonez Pech, S. H. (2020). Competencia digital de los profesores de inglés en enseñanza primaria del sureste de México. *RIDE. Revista Iberoamericana para la Investigación y el Desarrollo Educativo*, 11(21). <https://doi.org/10.23913/ride.v11i21.752>
- Rodríguez, R. & Gómez, M. G. (2017). Competencias digitales en la enseñanza-aprendizaje del inglés en bachillerato. *Campus Virtuales*, 6(2), 51-59. Obtenido de: www.revistacampusvirtuales.e. (02 Jul 2022)

- Rodríguez, M. (2020). El uso del video para fortalecer la comprensión y producción oral (listening/speaking) en los estudiantes de Nivel III de inglés en un centro de enseñanza bilingüe de Barranquilla, Universidad del Norte (Thesis) Retrieved from: <https://manglar.uninorte.edu.co/handle/10584/9405> (19 Feb 2023)
- Saldaria, Elnida & Ariawan, Vina & Cahyani, Isah. (2019). Speaking skill of elementary students reviewed by gender. *Journal Prima Edukasia*. <https://doi.org/10.21831/jpe.v7i1.20363>
- Sousa, E., Cruz, E., & Albuquerque, F. (2022). Avaliação das Competências Digitais de alunos do 1.º Ciclo do Ensino Básico: Uma proposta metodológica. *New Trends in Qualitative Research*, 12, e608. <https://doi.org/10.36367/ntqr.12.2022.e608>
- Tamayo, W. (2018). Las competencias digitales de los docentes del LICGUA según el nivel de conocimiento, percepción y uso pedagógico de las TIC en los procesos de enseñanza aprendizaje (Master's tesis), Universidad Casa Grande. Departamento de Posgrado. Retrieved from: <http://dspace.casagrande.edu.ec:8080/bitstream/ucasagrande/1372/1/Tesis1568TAMc.pdf> (11 Feb 2023)
- Thandavaraj, E. J., Gani, N. A. N. & Nasir, M. K. M. (2021b). A Review of Psychological Impact on Students Online Learning during Covid-19 in Malaysia. *Creative Education*, 12(06), 1296-1306. <https://doi.org/10.4236/ce.2021.126097>
- Valdivieso, T. S. (2016). *Modelo de estándares de competencias digitales para los docentes de educación básica del cantón Loja* (Ecuador). FRetrieved from: <http://e-spacio.uned.es/fez/view/tesisuned:Educacion-Tsvaldivieso> (11 Feb 2023)
- Villafuerte, J. (2019). Tecnología de la información y comunicación y el desarrollo de la competencia comunicativa en inglés de los futuros docentes de lengua extranjera de Ecuador propuesta de intervención educativa. The Basque Country University, (Doctor Thesis). Recuperado de <https://dialnet.unirioja.es/metricas/documentos/TES/223605> (19 Feb 2023).
- Vinueza, S. F., & Simbaña Gallardo, V. P. (2017). Impacto de las TIC en la Educación Superior en el Ecuador. *Revista Publicando*, 4(1), 355-368. <https://revistapublicando.org/revista/index.php/crv/article/view/530> (12 Feb 2023).
- Wang, X. (2021). How Does Digital Competence Preserve University Students' Psychological Well-Being During the Pandemic? An Investigation From Self-Determined Theory. *Frontiers*. <https://www.frontiersin.org/articles/10.3389/fpsyg.2021.652594/full> (14 Feb 2023).
- Wang, X., Zhang, R., Wang, Z., & Li, T. (2021). How Does Digital Competence Preserve University Students' Psychological Well-Being During the Pandemic? An Investigation From Self-Determined Theory. *Front. Psychol*, Sec. Educational Psychology, 12(1) 1-20. <https://doi.org/10.3389/fpsyg.2021.652594>
- Wang, X., Zhang, R., Wang, Z., & Li, T. (April de 2021). *ResearchGate*. Obtenido de How Does Digital Competence Preserve University Students' Psychological Well-Being During the Pandemic? An Investigation From Self-Determined Theory: Retrieved from: https://www.researchgate.net/publication/351068272_How_Does_Digital_Competence_Preserve_University_Students'_Psychological_Well-Being_During_the_Pandemic_An_Investigation_From_Self-Determined_Theory (12 Feb 2023).
- Wild, S., & Heuling, L. S. (08 de June de 2020). How do the digital competences of students in vocational schools differ from those of students in cooperative higher education institutions in Germany?. Retrieved from: <https://ervet-journal.springeropen.com/articles/10.1186/s40461-020-00091-y> (19 Feb 2023)

Teaching and Promoting Independent Use of Reading Strategies in the Middle Schools

Yusuf Uyar¹, Murat Özbay²

¹ Gazi Faculty of Education, Gazi University, Ankara, Turkey

² Faculty of Education, Kırıkkale University, Kırıkkale, Turkey

Correspondence: Yusuf Uyar, Gazi Faculty of Education, Gazi University, Ankara, 06550, Turkey. Tel: +90 312 202 17 96-. E-mail: uyary@gazi.edu.tr

Abstract

The aim of this study is to determine the effect of complex tasks on independent strategy use. For this purpose, a two-stage study was carried out. At the first stage, reading strategies were taught to the students who were assigned the experimental groups through Gradual Release of Responsibility Model, and at the second stage, some complex tasks were designed; and were tested in order to see if they would have an impact on students' independent strategy use without the guidance of anyone. This study is a quasi-experimental study; and the study group consists of a total of 72 middle school students, 24 of which are in the experimental groups, while the remaining 48 students are in the control groups. The research results showed that explicit strategy instruction through the Gradual Release of Responsibility Model, and subsequently, that engaging students in complex tasks promote the independent strategy use.

Keywords: Gradual Release of Responsibility Model, Complex Tasks, Independent Strategy Use

1. Introduction

1.1 Introduce the Problem

The development of reading skill is one of the major areas in mother language education, particularly, with the objective defined as growing individuals being able to adapt to the changing world of today, having high order thinking skills, and having the capacity to renew themselves at any stages of their lives, reading skills has become more important as it plays a key role for all these qualities (Balci et al., 2012; Gallik, 1999; Stevens et al., 2020). Therefore, reading skill takes an important place both in school practices and in scientific studies.

Although studies on reading skills started in 1800s, the most important developments in the field were experienced after 1950s (Venezky, 1984). After 1950s, studies on reading were prominently affected by behaviorist approach, psycholinguists, information processing theory, socio-cultural approach and constructive approach, respectively (Alexander & Fox 2013; Dignath & Veenman, 2021; Ensar, 2014; Pearson, 2009). In fact, it is possible to say that

all these approaches are still maintaining their influence today. Especially, strategy use, which emerged parallel to the developments in cognitive science, and has become a subject matter of the ongoing studies (Balçı et al., 2013; Guthrie & Klauda, 2014; Hong-Nam et al., 2014; Kragler et al., 2015; Lipp & Hefrich 2016; de Milliano et al., 2016). Since the first studies on this field, many strategies have been developed such as summarizing, question generating, determining text structure, visualizing, inferring, activating background knowledge and monitoring comprehension; and they have been employed in the classrooms (Buehl, 2009; de Milliano et al., 2016; Guthrie et al., 1999; Harvey & Goudvis, 2007; Moreillon, 2007; Zwiers, 2010).

Experimental studies carried out for years show that strategy instruction has an impact on the development of reading comprehension skill (Bean & Steenwyk, 1984; Bouchamma et al., 2014; Guthrie et al., 1999; Homan et al., 1993; Hong-Nam et al., 2014; Kragler et al., 2015; Lin & Yu, 2016; Martin & Pressley, 1991; Suwantharathip, 2015; Taylor & Beach, 1984). And nowadays, the essential study subjects focus on two points. One of which is how to teach strategies. At the beginning, strategies were mostly taught via explicit instruction; however, although some studies report that explicit instruction is beneficial, some others suggest that students cannot benefit from explicitly instructed strategies (Paris et al., 1991). Later, with the impact of socio-cultural approach, practices which employed collaborative learning groups and peer learning emerged. Some of them are as follows: Peer-Assisted Learning Strategies (Fuchs et al., 2001; Mathes et al., 1998), Collaborative Strategic Reading (Klinger et al., 1998; Klinger & Vaughn, 1999), Reciprocal Teaching (Pratt & Urbanowski, 2016), and Transactional Strategies Instruction (Pressley et al., 1992). In addition to these techniques, another popular way of strategy instruction is GRRM (Pearson & Gallagher, 1983). In the current strategy instruction resources, it is emphasized that the model can be used in teaching strategies for reading (Buehl, 2009; Ensar, 2014; Harvey & Goudvis, 2007;). Furthermore, the GRRM is seen to be used by integrating it into certain practices mentioned above (for example, Peer Assisted Learning Strategies). One of the specific features making the GRRM an effective model is the teacher modeling. Teacher modeling in strategy teaching makes the strategy instruction more effective (Brown et al., 2013; Duffy, 1993). In fact, transfer of skills under the guidance of an adult is not a new method, and it is seen that different researchers use that method under different names (Palinscar & Brown, 1984; Randi & Corno, 2005). Furthermore, studying in collaborative groups can be deemed as another advantageous aspect of the method (Ensar, 2014).

Another issue that the studies focused on is how to promote students' independent use of strategies taught to them (Cromley & Wills, 2016; de Milliano et al., 2016; Lee & Schmitt, 2014; Marcell, 2007). The main issue that the researchers agreed upon is that when students feel they are comfortable in reading, they don't see the need for using strategies, and they use strategies when they have difficulty in understanding the reading passages (Guthrie & Taboada, 2004). From this point of view, tasks used in the classrooms should be designed in a way to motivate them to use strategies. Turner (1995) elaborated the tasks supporting students for independent strategy use, maintaining their motivation for the reading. Characteristics of these tasks which are referred to as complex tasks were also handled and described by different researchers in detail (Perry et al., 2004; Perry et al., 2008).

Gradual Release of Responsibility Model

Pearson and Gallagher first mentioned the Gradual Release of Responsibility Model (GRRM) in their studies (1983). The Model was shaped in the light of opinions of the educational scientists such as Piaget, Bandura and Vygotsky, who suggest that learning occurs through interactions with the environment, and took its final shape that can be employed for skill education in the current classrooms (Buehl, 2009; Ensar, 2014; Fisher & Frey 2008). In the GRRM model, the following sequence is followed: first of all, teacher explains explicitly how the strategies are used. Then he/she models the strategies. After modeling, teacher provides students with the tasks which allow students to use strategies and gain experience under their teacher's guidance; and finally, students use the strategy independently. At the beginning, the main responsibility belongs to relatively more experienced teacher; however, at the end of the process, the responsibility is released to the students who get declarative, procedural, and conditional knowledge of strategies and necessary experience; and at the intermediate stages the responsibility is shared between students and teacher (Duke & Pearson, 2002; Ensar, 2014; Fisher & Frey, 2008).

Complex Tasks

In the literature, it is argued that the tasks which are referred to as complex tasks (Turner, 1995) support strategy use in reading as well as students' motivation for reading. The complex tasks; (a) shouldn't be either below or far above the students' level, and should provide students with the opportunity to control the difficulty level; (b) should enable students to choose the text, etc. to read; (c) should allow students to control the process; (d) should make it possible for students to work with others (to receive help or feedback from their peers or teacher whenever they need); and (e) should enable students to evaluate their own products (Perry et al., 2004; Perry et al., 2008; Perry & Rahim 2011).

In general, the complex tasks should be slightly difficult for the students. However, the tasks that are far above the students' level and are impossible to be completed successfully will cause students to be disappointed and fed up with the tasks and to give up studying. Therefore, the tasks slightly above their level is the most appropriate ones. Perry and her colleagues note the followings for the complex tasks: they should involve "various information" (they should address information to be handled within a theme or unit – such as nature and universe, etc.); they should be intended for multiple purposes (to learn recent developments in space studies, to interrelate the texts they have read, to be able to work in groups); there shouldn't be any time limit (when necessary, teacher should give them a few weeks or months to enable them to access different texts, to read these texts, to analyze what they read, and to express what they learned in different ways); they should include cognitive and meta-cognitive processes (summarizing, making inferences, evaluating the process and the product created as a result of this process); they should make it possible to come up with different products at the end of the work (drafting a report, giving a verbal presentation, or preparing a booklet) (Perry et al., 2004; Perry et al., 2008).

The following information on reading education provided in Turkey is deemed to be beneficial; in demonstrating to what extent the treatment carried out within the scope of this study is different from the curriculum which is currently in practice.

Reading Instruction in Secondary Schools in Turkey

In Turkey, reading skill is addressed within the scope of Turkish courses from the first grade in the primary school to the eighth grade in the middle school. All the activities carried out in the classes are designed in accordance with the Turkish Instructional Program prepared by the National Ministry of Education on the basis of the principles of the constructive approach. The program defines the goals and the learning outcomes intended to be attained, teaching methods, assessment tools and evaluation techniques to be employed. Teachers are expected to work in accordance with this program. Furthermore, the texts to be read by the students are included in the course books; and the activities to be carried out by the teachers are involved in the same course books. In addition, teachers are not provided with teacher's books which describe how they will deliver the lessons and how they will implement the activities in classrooms. In brief, teachers often implement activities designed previously in accordance with the program.

Reading lessons aim at enabling students to learn the reading rules; and to understand, to analyze, to make sense of and to evaluate the text that they have read; and to adopt the habit of reading.

The instructional programs defining the content and quality of the reading education in Turkey do not include strategy instruction; but the workbooks include some activities (for example, organizing the information, making guesses, etc.) that require the use of some strategies. However, in such activities, students are not given an explanation that they are using a strategy; this strategy makes special contribution to comprehending the text, and they can use this strategy in similar reading passages in the future. Therefore, students don't know that there are some strategies they can use to understand the reading text; they don't think that what they have done in an activity during a lesson can be used in another similar text; more importantly they never learn how to implement a strategy even if they want to use a strategy. As a result, they cannot use reading strategies without guidance of the others. Using teaching strategies effectively and supporting independent use of them are two important issues in reading instruction. In this study, and as a reading researcher, I have focused on these two issues. Accordingly, the first aim of this study is determining the effectiveness of explicit reading strategy instruction through GRRM in Turkish

middle schools. The second objective of the study is determining the effectiveness of designing complex tasks in supporting independent strategy use.

2. Method

2.1 Research Design

The researcher used a quasi-experimental model with pretest-posttest control group. In fact, experimental studies are ideal for such kinds of studies which aim at determining how the variables affect each other. However, the fact that the study was carried out in the real classes where the teaching-learning activities were going on impeded the formation of artificial groups for the study. Under such circumstances, it is convenient to carry out quasi-experimental studies where it is not likely to assign students in an unbiased way; but the available groups can be allocated as experimental and control groups in an unbiased way (Creswell, 2009).

The quasi-experimental studies are open to some threats since they are deprived of unbiased allocation which provides some advantages in terms of internal validity (Crano & Brewer, 2002). In such cases, certain techniques are employed in order to minimize the factors threatening the internal validity. One of these techniques is to work with matched sample groups (Creswell, 2012; Fraenkel et al., 2012). As an unbiased allocation is not possible in the matched sample groups; students selected for the sample groups are matched in terms of some characteristics which are likely to affect the study results such as gender, age, race, intelligence level, reading comprehension level, etc.; however, that is not a complete matching (Fraenkel et al., 2012). Also, in this study, the matched groups are used in order to increase the internal validity as much as possible.

2.2 Participant (Subject) Characteristics

Study group consists of a total of 72 students studying in the 6th and 8th Grades of three public schools in three villages, who are affiliated to a province located in the western part of Turkey. Having an aim to work with the matched groups in the study, firstly, the clustering analysis was performed in order to form the experimental and control groups from the students having very similar characteristics. In order to carry out this analysis, 102 students in the 6th grade and 109 students in the 8th grade of five primary schools were requested to take reading comprehension tests and attitude scales for reading. In addition to these tests, information on the demographical characteristics of the students was collected. As a result of the analyses, an experimental group and two control groups each of which includes 12 students were formed at the 6th grade level and again an experimental group and two control groups of 12 students were formed at the 8th grade level.

2.3 Data Collection Tools

Personal Information Form: All the students who were accessible were requested to fill the Personal Information Form in order to gather information on the demographical characteristics of the students included in the study group, and to be able to match the experimental and control groups given the data collected. The form consists of questions to gather information on the gender, family income level, number of siblings (including themselves), and educational status of the parents of the students.

Comprehension Tests: A total of four reading comprehension tests were used within clustering analysis carried out in order to determine the experimental and control groups in the study. Out of four tests, two tests were applied to the 6th grade students and the other two were applied to the 8th grade students. Tests consist of a reading text and eight multiple-choice questions concerning the text. One of the two texts used for each grade level is informative while the other one is narrative.

The tests applied to the 6th grade students were developed by the researcher. Reliability coefficients of these tests are .78 and .77. Comprehension tests applied to the 8th grade were developed by Balci (2009); and the reliability coefficients of these tests are .75 and .79.

Attitude Scale: Before determination of the experimental and control groups, the Reading Attitude Scale (6th, 7th, and 8th Grades) developed by Özbay & Uyar (2009), for the students in the second stage of primary education was employed in order to measure emotional readiness of the students included in the study for reading. This scale was prepared as a 5-point Likert-type scale of 25 items with a four-factor structure.

Reliability coefficient of the scale, in other words, Cronbach Alpha value is .93. Factor loading of the items in the scale ranges from .514 to .762. Furthermore, fit index values reported after the confirmatory factor analysis of the scale are as follows: RMSEA value 0.041; SRMR value 0.042; GFI value 0.91; AGFI value 0.90; CFI value 0.99; NFI value 0.97.

Independent Strategy Use Rubric: Independent strategy use of the students during reading was scored with the independent strategy use rubric. In the rubric, scoring ranges from one to four points. If it is not observed that a student uses strategy in reading, student gets 1 point; if a strategy use is observed but is not suitable for the text, student gets 2 points; although the strategy is suitable for the text, if it is not applied effectively, student gets 3 points; and if a strategy suitable for the text is used effectively, then student gets 4 points. This rubric developed by the researcher for this study has an inter-rater reliability coefficient of .91.

2.4 Data Analysis

In order to adapt the data collected during the study to the analysis, primarily, the average of the measurements carried out before and after the intervention was calculated. Pretest and posttest scores of each student were generated by calculating the averages of two measurements done before the study, and three measurements performed after the study. After that, these data were analyzed through SPSS package program. In data analysis, descriptive statistics and ANOVA test were used.

2.5 Experimental Interventions

After the experimental and control groups were formulated, students in the experimental group received an awareness education for approximately two weeks, and in the meantime, it was investigated whether the students in the experimental and control groups used any reading strategies independently. Then, strategy instruction was delivered in accordance with the principles of the GRRM for 10 weeks. Three weeks were spent on determining text structures, whereas, one week was allocated for each of the other strategies.

After all these, students were trained in order for them to understand all the strategies, for approximately two weeks, also, students were observed in order to determine if there was any time-dependent regression in learning (forgetting, misuse, etc.); and in the meantime, some students were given supportive education through mini-lessons. The mini-lessons used in supportive strategy instruction were 10-15 minute lessons prepared in order to be delivered individually to each student, who needed these lessons to remind him/her of the use of a specific strategy. In these short lessons, students were taught on just the issues they need to repeat unlike the essential strategy teaching practices. In designing the content of these lessons, they were planned to be consistent with the stages of the GRRM used in strategy instruction. However, as the lessons were delivered in a limited time, some time-consuming activities like group work were not included in the lessons. The lessons delivered in line with the mentioned considerations consisted of the following stages: (a) explicit instruction, modeling and think-aloud, (b) teacher-guided performance, (c) independent performance.

Strategies taught within the scope of this study are as follows: activating and using prior knowledge, organizing the information, determining and using text structures, question generating, making predictions and inferences, visualization, summarizing and monitoring comprehension. It is observed that the programs specifically designed to develop reading skills in the past also included instructions of these strategies (National Reading Panel 2000; Wigfield et al., 2004). In brief, 3 months were dedicated for the strategy instruction.

After the follow-up period used to determine whether the students learned the strategies, the final stage of the study was launched. At this stage, certain tasks enabling students to maintain their motivation and to promote

independent strategy use were designed; and students were engaged in these tasks. And approximately 14 weeks (3.5 months) were dedicated to that process.

While the experimental groups were subjected to the abovementioned treatment, the control groups went on with receiving education in accordance with the instructional program which is implemented all over the country as mentioned above. Furthermore, the required measures were taken to make experimental group and control groups to spend equal time in and out of the school for reading studies.

3. Results

As seen in Table 1, the average score of the students in experimental group in independent strategy use rubric was 1.17 before the treatment; this score increased to 3.50 after the treatment. In the first control group, the same scores were 1.08 and 1.11, respectively and in the second control group they were 1.13 and 1.08, respectively. Accordingly, it is observed that scores of the students in the experimental group which were subject to the treatment increased significantly, whereas, scores of the students in the control groups didn't exhibit a significant change.

Table 1: Descriptive information of 6th graders

Groups	Pretest			Posttest		
	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>
Experiment (Grade 6)	12	1.17	.39	12	3.50	.27
Control 1 (Grade 6)	12	1.08	.19	12	1.11	.26
Control 2 (Grade 6)	12	1.13	.22	12	1.08	.21

Accordingly, independent strategy use levels of the 6th grade students receiving education in different ways exhibited a significant difference from pre-treatment period to post-treatment; in other words, it was revealed that the joint impact of the factors of receiving different instructions and repeated measurements on independent strategy use is significant [$F_{(2, 33)}=162.856, p<.001$]. This result seen in the Table 2 shows that receiving strategy instruction through the GRRM and subsequent engagement in complex tasks had a positive impact on the independent strategy use.

Table 2: Pretest - posttest ANOVA results in independent strategy use at the 8th grade level

Source of Variance	SS	DF	MS	<i>F</i>	<i>P</i>
Between Subjects					
Group	24.311	2	12.155	166.065	.000
Error	2.416	33	.073		
Within Subjects					
Pre-posttest	10.760	1	10.760	159.864	.000
<i>Pre-posttest*group</i>	21.922	2	10.961	162.856	.000
Error	2.221	33	.067		

In Table 3, it is seen that students in the experimental group got a score average of 1.12 in the independent strategy use rubric before the treatment, while this score increased to 3.75 after the treatment. In the first control group, these scores were 1.25 and 1.17, respectively; likewise, in the second control group, they were 1.17 and 1.19, respectively.

Table 3: Descriptive information of 8th graders

Groups	Pretest			Posttest		
	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>
Experiment 2 (Grade 8)	12	1.21	.33	12	3.75	.25
Control 3 (Grade 8)	12	1.25	.26	12	1.17	.17
Control 4 (Grade 8)	12	1.17	.25	12	1.19	.27

Accordingly, it is observed that the scores of the students in the experimental group subject to the treatment increased significantly, whereas, scores of the students in the control groups didn't exhibit a significant change.

In the light of the data, independent strategy use levels of the 8th grade students receiving education in different ways exhibited a significant difference from pre-treatment period to post-treatment; in other words, it was revealed that the joint impact of the factors of receiving different instructions and repeated measurements on independent strategy use is significant [$F_{(2, 33)}=227.919, p<.001$]. This result presented in the Table 4 shows that receiving strategy instruction through the GRRM and subsequent engagement in complex tasks had a positive impact on independent strategy use.

Table 4: Pretest - posttest ANOVA results in independent strategy use at the 8th grade level

Source of Variance	SS	DF	MS	<i>F</i>	<i>P</i>
Between Subjects					
Group	26.715	2	13.358	175.105	.000
Error	2.517	33	.076		
Within Subjects					
Pre-posttest	12.087	1	12.087	1206.235	.000
<i>Pre-posttest*group</i>	26.715	2	13.358	227.919	.000
Error	1.934	33	.059		

4. Discussion

Considering the pretest-posttest scores of both experimental and control groups, it is clearly seen that students need strategy instruction to learn why, when and how a strategy would be used properly. In the study, it is also revealed that strategy instruction through the GRRM is beneficial for middle school students. In the recent research conducted with several groups, researchers have found similar results (Concannon-Gibney & McCarthy, 2012; Lee & Schmitt, 2014; Nivala, 2016). Also, many researchers underlined that the GRRM allows effective teaching in many literacy subjects such as comprehension instruction, writing instruction, strategy instruction in reading and writing, and teaching critical-analytic thinking (Grote-Garcia & Frost, 2015; Murphy et al., 2016; Kozdras et al., 2015; Pratt & Urbanovski, 2015; Vaughn et al., 2015; White, 2016). After such an instruction, including teacher modeling with think-aloud, guided practice, and independent performance, students clearly learnt how to and when to use these strategies, and what to consider while using them. And this endows them with the strategy and knowledge required for the independent strategy use. Lee & Schmitt's (2014) empirical contributions showed that strategic behaviors of students need teachers' explicit instruction and support that is included by GRRM. Indeed, the effectiveness of the strategy instruction through GRRM has shown itself in the results of independent strategy use in this research. Nivala (2016), who reached similar results, also mentioned that students clearly reflect their learning in their products when they get adequate strategy instruction through GRRM.

Results of this research showed that solely having the strategy knowledge does not guarantee independent strategy use (Cromley & Wills, 2016; de Milliano et al., 2016; Lee & Schmitt, 2014; Marcell, 2007). No matter how they are taught, if students cannot use the strategies independently without guidance of another person after strategy instruction process, it is difficult to say that the strategy instruction has achieved its goals. Based on results of earlier research, we can say that independent strategy use is crucial in reading and writing (Almasi & Fullerton, 2012; Duke & Pearson, 2002). In the literature, it is stated that it will be beneficial to provide students with opportunities to show that they use the strategies (Guthrie & Taboada, 2004). Furthermore, it is argued that independent strategy use can be supported through some in-class practices like literature circle and R5 program (Kelley & Clausen-Grace, 2006, 2008). One of those classroom practices is designing complex tasks for students defined by Turner (1995), Perry et al., (2004), Perry et al., (2008) and Perry & Rahim, (2011). In this research, complex tasks were used to support independent strategy use in experimental groups. Results showed that, it is beneficial for their independent strategy use to engage students in complex tasks that are meaningful for them and where they can choose the texts to read and their friends to work with while performing the task, they can control the difficulty level and they can evaluate the products that they come up with. Findings of the other studies

performed on different grade levels also support the outcomes of this study (Perry & VandeKamp, 2000; Perry et al., 2004; Turner, 1995).

In conclusion the findings of this study showed that students need explicit instruction to use strategies in a proper way, and that GRRM is an effective way of such instruction. Especially, students highly benefit from teacher modeling with think aloud, guided practice and independent practice triad. GRRM also allows all students to get declarative, procedural, and conditional knowledge of reading strategies that they need when they try to use strategies independently.

Having declarative, procedural, and conditional knowledge of reading strategies is not enough to use these strategies independently. Because of that, teachers must design tasks and create classroom climate to support independent use of strategies. In summary, the combination of strategy instruction through the GRRM and complex tasks is beneficial for the middle school students in reading instruction.

Acknowledgments

The research reported here was funded by Gazi University Projects of Scientific Investigation (Project Number: 04/2011-34).

References

- Alexander, P.A., & Fox, E. (2013). A historical perspective on reading research and practice, redux. In D. E. Alverman, N. J. Unrau, & R. B. Ruddel (Eds.). *Theoretical models and processes of reading*, (6th ed., pp. 3-46). International Reading Association.
- Almasi, J. F., & Fullerton, S. K. (2012). *Teaching strategic processes in reading*, (2nd ed.). Guilford.
- Balcı, A., Coşkun, E., & Özçakmak, H. (2013). Trends in reading education: An analysis of postgraduate theses written in Turkey. *Procedia – Social and Behavioral Sciences*, 93, 1574-1579. <https://doi.org/10.1016/j.sbspro.2013.10.084>
- Balcı, A., Uyar, Y., & Büyükikiz, K. K. (2012). The examination of reading habits, frequency to use library and attitudes towards reading of 6th grade primary school students. *Turkish Studies - International Periodical for The Languages, Literature and History of Turkish or Turkic*, 7(4), 965-985. <http://dx.doi.org/10.7827/TurkishStudies.3795>
- Bean, T.W., & Steenwyk, F. (1984). The effect of three forms of summarization on sixth graders' summary writing and comprehension. *Journal of Reading Behavior*, 16(4), 297-307. <https://doi.org/10.1080/10862968409547523>
- Bouchamma, Y., Poulin, V., & Ruel, C. (2014). Impact of reading strategy use on girls' and boys' achievement. *Reading Psychology*, 35(4), 312-331. <https://doi.org/10.1080/02702711.2012.724043>
- Brown, A. L., Palinscar, A. S., & Armbruster, B.B. (2013). Instructing comprehension-fostering activities interactive learning situations. In D. E. Alverman, N. J. Unrau, & R. B. Ruddel (Eds.). *Theoretical models and processes of reading*, (6th ed., pp. 255-286). International Reading Association.
- Buehl, D. (2009). *Classroom strategies for interactive learning* (3rd ed.). International Reading Association.
- Concannon-Gibney, T., & McCarthy, M. J. (2012). The explicit teaching of reading comprehension in science class: A pilot professional development program. *Improving Schools*, 15(1), 73-88. <https://doi.org/10.1177/1365480211433726>
- Crano, W.D., & Brewer, M. B. (2002). *Principles and methods of social research* (2nd ed.). Lawrence Erlbaum.
- Creswell, J. W. (2009). *Research design: Qualitative, quantitative, and mixed methods approaches*. (3rd ed.). Sage.
- Creswell, J. W. (2012). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (4th ed.). Pearson Education.
- Cromley, J. G., & Wills, T.W. (2016). Flexible strategy use by students who learn much versus little from text: Transitions within think-aloud protocols. *Journal of Research in Reading*, 39(1), 50-71. <https://doi.org/10.1111/1467-9817.12026>
- de Milliano, I., van Gelderen, A., & Slegers, P. (2016). Types and sequences of self-regulated reading of low-achieving adolescents in relation to reading task achievement. *Journal of Research in Reading*, 39(2), 229-252. <https://doi.org/10.1111/1467-9817.12037>

- Dignath, C., & Veenman, M. V. J. (2021). The role of direct strategy instruction and indirect activation of self-regulated learning: Evidence from classroom observation studies. *Educational Psychology Review*, 33, 489-533. <https://doi.org/10.1007/s10648-020-09534-0>
- Duffy, G. G. (1993). Teachers' progress toward becoming expert strategy teachers. *The Elementary School Journal*, 94(2), 109-120. <https://doi.org/10.1086/461754>
- Duke, N. K., & Pearson, P. D. (2002). Effective practices for developing reading comprehension. In A. E. Farstrup & S. J. Samuels (Eds.). *What research has to say about reading instruction* (3rd ed., pp. 205-242). International Reading Association.
- Ensar, F. (2014). Skill education in Turkish language teaching: Gradual Release of Responsibility Model. *International Online Journal of Educational Sciences*, 6(1), 231-242
- Fisher, D. & Frey, R. (2008). *Better learning through structured teaching: A framework for the Gradual Release of Responsibility*. Association for Supervision and Curriculum Development.
- Fraenkel J. R., Wallen, N. E., & Hyun, H. H. (2011). *How to design and evaluate research in education* (8th ed.). McGraw-Hill.
- Fuchs, D., Fuchs, L. S., Thompson, A., Svenson, E., Yen, L., Al Otaiba, S., Yang, N., McMaster, K. N., Prentice, K., Kazdan, S., & Saenz, L. (2001). Peer-assisted learning strategies in reading: Extensions for kindergarten, first grade, and high school. *Remedial and Special Education*, 22(1), 15-21. <https://doi.org/10.1177/074193250102200103>
- Gallik, J. D. (1999). Do they read for pleasure? Recreational reading habits of college students. *Journal of Adolescent & Adult Literacy*, 42(6), 480-488. <https://www.jstor.org/stable/40014062>
- Grote-Garcia, S., Frost, C. (2015). Fostering close reading in the elementary classroom using patterned text. In E. E. Martinez, J. Pilgrim, & L. A. Sharp (Eds.). *Texas association for literacy education yearbook: Inspiring and transforming literacy*, (Vol. 3, pp. 2-16). Texas Association for Literacy Education.
- Guthrie, J. T., & Klauda, S. L. (2014). Effects of classroom practices on reading comprehension, engagement, and motivations for adolescents. *Reading Research Quarterly*, 49(4), 387-416. <https://doi.org/10.1002/rq.81>
- Guthrie, J.T., & Taboada, A. (2004). Fostering the cognitive strategies of reading. In J. T. Guthrie, A. Wigfield, & K. C. Perencevich (Eds.). *Motivating reading comprehension: Concept oriented reading instruction* (pp. 87-112). Lawrence Erlbaum.
- Guthrie, J. T., Wigfield, A., Metsala, J. L., & Cox, K. E. (1999). Motivational and cognitive predictors of text comprehension and reading amount. *Scientific Studies of Reading*, 3(3), 231-257. https://doi.org/10.1207/s1532799xssr0303_3
- Harvey, S., & Goudvis, A. (2007). *Strategies that work: Teaching comprehension for understanding and engagement*. Stenhouse.
- Homan, S. P., Klesius, J. P., & Hite, C. (1993). Effects of repeated readings and nonrepetitive strategies on students' fluency and comprehension. *Journal of Educational Research*, 87(2), 94-99. <https://doi.org/10.1080/00220671.1993.9941172>
- Hong-Nam, K., Leavell, A. G., & Maher, S. (2014). The relationships among reported strategy use, metacognitive awareness, and reading achievement of high school students. *Reading Psychology*, 35(8), 762-790. <https://doi.org/10.1080/02702711.2013.807900>
- Kelley, M. J., & Clausen-Grace, N. (2006). R5: The sustained silent reading makeover that transformed readers. *The Reading Teacher*, 60(2), 148-156. <https://doi.org/10.1598/RT.60.2.5>
- Kelley, M. J., & Clausen-Grace, N. (2008). *R5 in your classroom: A guide to differentiating independent reading and developing avid readers*. International Reading Association.
- Klingner, J. K., & Vaughn, S. (1999). Promoting reading comprehension, content learning, and English acquisition through Collaborative Strategic Reading (CSR). *The Reading Teacher*, 52(7), 738-747. <https://www.jstor.org/stable/20204676>
- Klingner, J. K., Vaughn, S., & Schumm, J. S. (1998). Collaborative Strategic Reading during social studies in heterogeneous fourth-grade classrooms. *The Elementary School Journal*, 99(1), 3-22. <https://doi.org/10.1086/461914>
- Kozdras, D., Joseph, C., & Schneider, J. J. (2015). Reading games: Close viewing and guided playing of multimedia texts. *The Reading Teacher*, 69(3), 331-338. <https://doi.org/10.1002/trtr.1413>
- Kragler, S., Martin, L., & Schreier, V. (2015). Investigating young children's use of reading strategies: A longitudinal study. *Reading Psychology*, 36(5), 445-472. <https://doi.org/10.1080/02702711.2014.884031>
- Lee, P. A., & Schmitt, M. C. (2014). Teacher language scaffolds the development of independent strategic reading activities and metacognitive awareness in emergent readers. *Reading Psychology*, 35(1), 32-57. <https://doi.org/10.1080/02702711.2012.674477>
- Lin, L. C., & Yun, W. Y. (2016). A think-aloud study of strategy use by EFL college readers reading Chinese and English texts. *Journal of Research in Reading*, 38(3), 286-306. <https://doi.org/10.1111/1467-9817.12012>
- Lipp, J. R., & Helfrich, S. R. (2016). Key reading recovery strategies to support classroom guided reading instruction. *The Reading Teacher*, 69(6), 639-646. <https://doi.org/10.1002/trtr.1442>

- Marcell, B. (2007). Traffic light reading: Fostering the independent usage of comprehension strategies with informational text. *The Reading Teacher*, 60(8), 778-781. <https://www.jstor.org/stable/20204538>
- Martin, V. L., & Pressley, M. (1991). Elaborative-interrogation effects depend on the nature of the question. *Journal of Educational Psychology*, 83(1), 113-119. <https://doi.org/10.1037/0022-0663.83.1.113>
- Mathes, P. G., Howard, J. K., Allen, S. H., & Fuchs, D. (1998). Peer-assisted learning strategies for first-grade readers: Responding to the needs of diverse learners. *Reading Research Quarterly*, 33(1), 62-94. <https://doi.org/10.1598/RRQ.33.1.4>
- Moreillon, J. (2007). *Collaborative strategies for teaching reading comprehension: Maximizing your impact*. American Library Association.
- Murphy, P. K., Firetto, C. M., Wei, L., Li, M., & Croninger, R. M. V. (2016). What really works: Optimizing classroom discussions to promote comprehension and critical-analytic thinking. *Policy Insights from the Behavioral and Brain Sciences*, 3(1), 27-35. <https://doi.org/10.1177/2372732215624215>
- National Reading Panel (2000). *Teaching children to read: An evidence-based assessment of the scientific research literature on reading and its implications for reading instruction*. National Institute of Child Health and Human Development.
- Nivala, J. A. (2016). *Motivating first grade struggling readers through comprehension strategy instruction*. [Unpublished master thesis]. Hamline University.
- Özbay, M., Uyar, Y. (2009). İlköğretim ikinci kademe öğrencileri için okumaya yönelik tutum ölçeğinin geliştirilmesi: Geçerlilik ve güvenilirlik çalışması [The development of reading attitude scale for secondary level students: Study on the validity and reliability] *Journal of New World Sciences Academy Education Sciences*, 4(2), 632-651.
- Palinscar, A. S., & Brown, A. L. (1984). Reciprocal teaching of comprehension fostering and comprehension monitoring activities. *Cognition and Instruction*, 1(2), 117-175. https://doi.org/10.1207/s1532690xci0102_1
- Paris, S. G., Wasik, B. A., & Turner, J. C. (1991). The development of strategic readers. In R. Barr, M. L. Kamil, P. B. Mosenthal, & P. D. Pearson (Eds.). *Handbook of reading research*, (Vol. II, pp. 609-640). Longman.
- Pearson, P. D., & Gallagher, M. C. (1983). The instruction of reading comprehension. *Contemporary Educational Psychology*, 8(3), 317-344. [https://doi.org/10.1016/0361-476X\(83\)90019-X](https://doi.org/10.1016/0361-476X(83)90019-X)
- Pearson, P. D. (2009). The roots of comprehension instruction. In S. E. Israel, & G. G. Duffy (Eds.). *Handbook of research on reading comprehension* (pp. 3-31). Routledge.
- Perry, N., Phillips, L., & Dowler, J. (2004). Examining features of tasks and their potential to promote self-regulated learning. *Teachers College Record*, 106(9), 1854-1878. <https://doi.org/10.1111/j.1467-9620.2004.00408.x>
- Perry, N. E., Hutchinson, L., & Thauberger, C. (2008). Talking about teaching self-regulated learning: Scaffolding student teachers' development and use of practices that promote self-regulated learning. *International Journal of Educational Research*, 47(2), 97-108. <https://doi.org/10.1016/j.ijer.2007.11.010>
- Perry, N. E., & Rahim, A. (2011). Studying self-regulated learning in classrooms. In B. J. Zimmerman, & D. H. Schunk (Eds.). *Handbook of self-regulation of learning and performance* (pp.122-136). Routledge.
- Perry, N. E., VandeKamp, K. J. O. (2000). Creating classroom contexts that support young children's development of self-regulated learning. *International Journal of Educational Research*, 33(7-8), 821-843. [https://doi.org/10.1016/S0883-0355\(00\)00052-5](https://doi.org/10.1016/S0883-0355(00)00052-5)
- Pratt, S. M., & Urbanowski, M. (2016). Teaching early readers to self-monitor and self-correct. *The Reading Teacher*, 69(5), 559-567. <https://doi.org/10.1002/trtr.1443>
- Pressley, M., Schuder, T., Bergman, J. L., & El-Dinary, P. B. (1992). A researcher-educator collaborative interview study of transactional comprehension strategies instruction. *Journal of Educational Psychology*, 84(2), 231-246. <https://doi.org/10.1037/0022-0663.84.2.231>
- Randi, J., & Corno, L. (2005). Teaching and learner variation. In P. Tomlinson, J. Dockrell, & P. Winne (Eds.), *Pedagogy--Teaching for learning* (pp. 47-69). British Psychological Society.
- Suwantharathip, O. (2015). Implementing reading strategies based on collaborative learning approach in an English class. *The Reading Matrix: An International Online Journal*, 15(1), 91-101.
- Stevens, E. A., Murray C. S., Fishstrom, S., & Vaughn, S. (2020). Using question generation to improve reading comprehension for middle-grade students. *Journal of Adolescent & Adult Literacy*, 64(3), 311-322. <https://doi.org/10.1002/jaal.1105>
- Taylor, B. M., & Beach, R. W. (1984). The effects of text structure instruction on middle-grade students' comprehension and production of expository text. *Reading Research Quarterly*, 19(2), 134-146. <https://doi.org/10.2307/747358>
- Turner, J. C. (1995). The influence of classroom contexts on young children's motivation for literacy. *Reading Research Quarterly*, 30(3), 410-441. <https://doi.org/10.2307/747624>
- Vaughn, M., Parsons, S. A., Gallagher, M. A., & Branan, J. (2015). Teachers' adaptive instruction supporting students' literacy learning. *The Reading Teacher*, 69(5), 539-547. <https://doi.org/10.1002/trtr.1426>
- Venezky, R. L. (1984). The history of reading research. In R. Barr, M. L. Kamil, & P. Mosenthal (Eds.). *Handbook of reading research* (pp. 3-38). Lawrence Erlbaum.

- White, A. (2016). Using digital think- alouds to build comprehension of online informational texts. *The Reading Teacher*, 69(4) 421-425. <https://doi.org/10.1002/trtr.1438>
- Wigfield, A., Guthrie, J. T., Tonks, S., & Perencevich, K. C. (2004). Children's motivation for reading: Domain specificity and instructional influences. *The Journal of Educational Research*, 97(6), 299-309. <https://doi.org/10.3200/JOER.97.6.299-310>
- Zwiers, J. (2010). *Building comprehension habits in grades 6-12: A toolkit of classroom activities*, (2nd ed). International Reading Association.

Translation Equivalence of Hyperbolic Expression used in iPhone 14, iPhone 14 Pro, and iPhone SE 2022 Official Webpages

Qotrunnada Sabila¹, Jumanto Jumanto², Rahmanti Asmarani³

^{1,2,3} English Department, Faculty of Humanities, Universitas Dian Nuswantoro, Semarang, 50131, Indonesia

Correspondence: Jumanto Jumanto, English Department, Faculty of Humanities, Universitas Dian Nuswantoro, Semarang, 50131, Indonesia. E-mail: ilhamj@dsn.dinus.ac.id

Abstract

This study aims to recognize the translation equivalence through the translation methods of hyperbolic expressions used in iPhone 14, iPhone 14 Pro, and iPhone SE 2022 official webpages. The data used in this study is the hyperbolic expressions gained from the official webpages of iPhone 14, iPhone 14 Pro and iPhone SE 2022. The research stages applied in this study are analyzing the data based on the qualitative method, adjusting the data with the categories of translation method, determining the categorization of the translation equivalence, organizing an explanation for each finding, and the final step is interpreting and concluding the analysis result. The finding results of hyperbolic expressions used in iPhone 14, iPhone 14 Pro, and iPhone SE 2022 official webpages are single-word hyperbole, phrasal hyperbole, clausal hyperbole, numerical hyperbole, superlative hyperbole, comparison hyperbole, and repetition hyperbole. Translation methods applied in iPhone 14 iPhone 14 Pro, and iPhone SE 2022 official webpages are word-for-word translation, literal translation, faithful translation, semantic translation, adaptation translation, free translation, idiomatic translation, and communicative translation. Translation equivalence strategy used in iPhone 14, iPhone 14 Pro, and iPhone SE 2022 is foreignization. The translator deliberately carries the culture of the source language into the target language to introduce the foreign product to the local society through the description on the webpages.

Keywords: Hyperbole, Hyperbolic Expression, Translation, Iphone Official Webpage, Translation Equivalence

1. Introduction

The existence of translation activity is an essential intermediary in defining many objects into different language forms. Nida and Taber (1974) explained that an optimum translation is a translation that sounds naturally that is not perceived through the translation process. Furthermore, it can fulfill the needs of the target readers who hold a right to receive a good quality translation result (Salsabila, R. & Jumanto, J., 2020). The presence of connection among countries and languages causes a translation to endure a significant role in cultural transmission so that when an unstable situation appears, the result of translation would deviate and be biased (Newmark, 1988). Aspects

of translation practices that should be considered into significant accounts among others are translation methods and translation equivalence.

1.1. Translation Method

Translation method is a particular procedure to translate a thing based on a specific translation plan (Anshori, 2010). Based on the definition, recognizing the translation method is significant to find out the way used by the translator in conveying the message universally and thoroughly of the source language into the target language. Each decision for the translation chosen by the translator would produce several options that can be applied so that it can affect the entire translation result (Molina & Albir, 2002). Newmark constructed a diagram to categorize the translation method into two types. The first is the methods that accentuates the source language, and the second is accentuated into target language. The category of the translation method is depicted through the V-diagram in Figure 1.

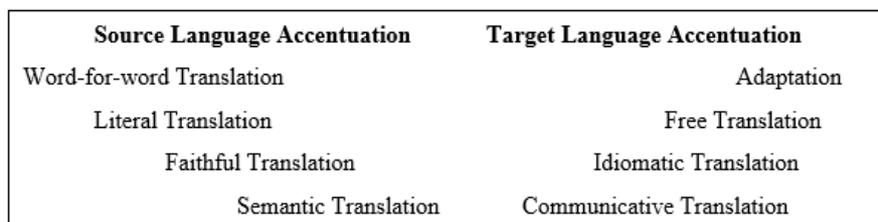


Figure 1: V-diagram of Translation Method by Newmark (1988)

1.2. Translation Equivalence

Venuti (2004) claimed that equivalence contains some variables that can identify equality between two different foreign messages, there are exactness, sufficiency, precision, correspondence, identity, and faithfully. Equivalence is possible to remove the existence of diversion in translation. The process starts with a comparison between the information and the making of response with the production through the target language and its culture. The equivalence message eventually depends on the identity of the situation. It is a possible thing to do that target language can preserve the reality of particular characteristics unknown by the source language (Vinay & Darbelnet, cited by Venuti, 2004).

Foreignization is an equivalence that takes side dominantly with the Source Language (SL). This translation is more accentuated regarding the language form and the genuineness of the grammatical of the source text rather than the target text (Venuti, cited by Oktafiana & Wibisono, 2020). Siregar (2016) defined that an accurate and acceptable translation is appropriate with the urge of the readers who expect the existence of SL culture or the language of the first writer as the embodiment of the culture within the translation is substantial for the society. Lezkovar (cited by Oktafiana & Wibisono 2020) also considered that foreignization processes an attempt to maintain a prevalent and unique culture of the SL even though it is unacceptable for the Target Language (TL). Moreover, the method of foreignization would be completely unfree from the domestic points and orders, including the growth of culture in the nation (Nott, cited by Venuti, 2004).

Domestication is an equality strategy that the accurate and acceptable translation belongs to the cultural society of TL. As a result, the translation would be unseen as a translation. Therefore, the translator is free to decide the necessity of the translation. Therefore, it does not turn out as foreign work (Siregar, 2016). Moreover, domestication is an equivalence that sided with the TL. This type of translation is more consider with the readability of the reader of the target text which is more concentrated on the grammatical and the message delivery style of the target text rather than the source text (Venuti, cited in Oktafiana & Wibisono, 2020). Arnold (cited by Venuti, 2004) recommends using a free domestication to produce a fluent and familiar that respects the moral value of the bourgeois in which the difference between foreign text and culture is disappeared because the translator has already omitted it.

Anshori (2010) defined that there is a connection between the translation method proposed by Newmark (1988) with the theory of foreignization and domestication proposed by Venuti (2004) as follows:

- 1) Foreignization use terms and words which “borrow” from the source of the language. Therefore, it is regarding word-for-word translation, literal translation, faithful translation, and semantic translation.
- 2) Domestication use the terms and words that “change” to the target language. Hence, it is related to adaptation translation, free translation, idiomatic translation, and communicative translation.

1.3. Hyperbole

Hyperbole is an object of aesthetic and rhetorical devices which offers an instrument to create something perceptible into imperceptible and something ordinary into extraordinary (Berlyne, cited by Barbu & Kleitsch, 2015). The effects generated by hyperbole are humorous, persuasive, and intuitive role. Another possible effect is a frightening reaction to something exaggerated as the embodiment of confusion (Barbu & Kleitsch, 2015). Claridge (2011) explained the hyperbole into seven categorizes, there are single-word hyperbole, phrasal hyperbole, clausal hyperbole, numerical hyperbole, superlative hyperbole, comparison hyperbole, and repetition hyperbole.

This study centered on analyzing the translation method and the categorization of equivalence of hyperbolic expressions within the English-Indonesian translation of iPhone 14, iPhone 14 Pro, iPhone SE 2022 official webpages. Several theories applied in this study are the theory of translation equivalence by Venuti (2004), the translation method by Newmark (1988), and the categorization of hyperbolic expressions by Claridge (2011). The data source is taken from iPhone 14, iPhone 14 Pro, iPhone SE 2022 official webpages. The data of this study are the hyperbolic expressions used in the English-Indonesian translation of iPhone 14, iPhone 14 Pro, iPhone SE 2022 official webpages.

This study was conducted to identify the types of hyperbole, describe the translation by recognizing the translation equivalence whether it is foreignization or domestication through the translation methods, and explain the differences of the hyperbolic expression translation in iPhone 14, iPhone 14 Pro, and iPhone SE 2022 official webpages. The researcher preferred to use several webpages of iPhone as the webpages not only present the original version of the description which is in English, but also show its translation, one of which is Indonesian. Furthermore, the researcher found one of phenomena about the translation methods used by the translator in translating the hyperbolic expressions, the finding example of which is pictured in Figure 1 and Figure 2.

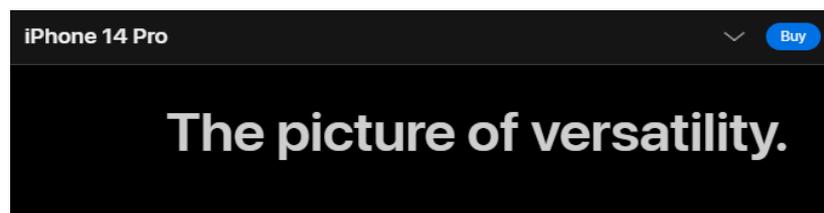


Figure 2: English Version Screenshot of Hyperbolic Expression of iPhone 14 Pro Official Webpage

Source: <https://www.apple.com/iphone-14>

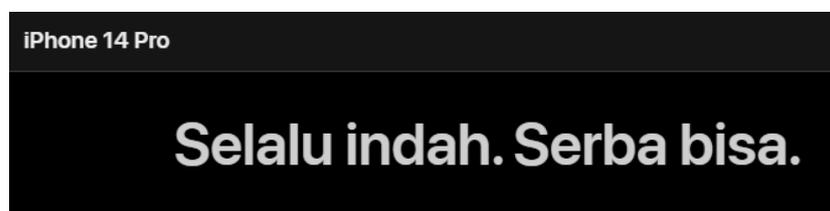


Figure 3: Indonesian Version Screenshot of Hyperbolic Expression of iPhone 14 Pro Official Webpage

Source: <https://www.apple.com/id/iphone-14>

According to the pictures above, a hyperbolic expression found in iPhone 14 Pro official webpage was “*The picture of versatility*” and translated into “*Selalu indah. Serba bisa*”. As known in the source language and the target

language above, both of them have highly distinct word structures and slightly similar meaning. In terms of structure, *the picture of versatility* is a noun phrase. Meanwhile, *Selalu indah. Serba bisa* is the combination of two adjective phrases. In the target language, the translator did not translate the noun phrase *the picture* and used the adjective phrase *selalu indah* as a replacement. Both forms are very dissimilar. Moreover, although the noun *versatility* and the adjective phrase *serba bisa* has quite the same meaning which is related to the ability in conducting many things, it is obvious that both have very distinct structure and way to transfer the message to the target reader.

The implementation of hyperbole by the writer is to create an overstate situation so that the literature produces a dramatic sense and increases attractiveness within the work. Thus, in terms of translation, the consideration in selecting the word becomes significant so that the message and the hyperbolic effect are still maintained and be well-delivered to the target language (Wahyuni & Pradhana, 2017). On the whole, identifying the equivalence of the translation through analyzing the translation methods of hyperbolic expressions used in iPhone 14, iPhone 14 Pro, and iPhone SE 2022 official webpages is essential to understand the partiality of the translator in delivering the message within these webpages. Concerning whether it would fulfill the necessity of the target reader or stand consistently on the side of the source language and its culture.

The other related studies are entitled *The Equivalence of Figurative Language Used in English and Indonesian Versions of Songs “Be Careful with my Heart (Tetaplah di Hatiku)” and “Denpasar Moon” created by Sahaduta & Nugroho (2013) conducted by Sahaduta & Nugroho (2013)*. The differences identified in this study is that figurative language, especially hyperbole, is only analyzed in general. Moreover, the category of translation equivalence did not mention the source appropriately, and the examination process of translation equivalence is not explained elaborately. Moreover, another study is entitled “A Translation Analysis of Superlative Form of Hyperbolic Expressions in The Novel Entitled “The Adventure of Sherlock Holmes by Sir Arthur Conan Doyle” by Yamananda (2016). A most recent study is done by Jumanto et al. (2022), which observes the performances of online translation machines through figurative language involvement. Jumanto et al. (2022) terms the figurative language with its denotative meaning as *metalanguage* which is based on human creative imagination. However, besides all the studies mentioned, the research gap found in this study is that the researcher assessed the translation quality using a theory from Nababan. In rating the quality, the researcher involved particular raters in determining the quality of the translation. The translation technique analyzed in this research is the translation technique by Molina and Albir (2022). The researcher used the theory of hyperbolic expressions from Cano Mora (2009) and focused more on the superlative degree within the collected data.

2. Method

This study applied a qualitative method as this method is appropriate for the purpose that the researcher want to achieve. Moreover, this method also can be conducted to coincide with the data collection process so that this study would be possible to develop flexibly and produce the data in many forms. The data sources is taken from iPhone 14, iPhone 14 Pro, iPhone SE 2022 official webpages on October 2022, which can be accessed on <https://www.apple.com/iphone-14/> and <https://www.apple.com/id/iphone-14/> (English and Indonesian version of iPhone 14 official webpage), <https://www.apple.com/iphone-14-pro/> and <https://www.apple.com/id/iphone-14-pro/> (English and Indonesian version of iPhone 14 Pro official webpage), and <https://www.apple.com/iphone-se/> and <https://www.apple.com/id/iphone-se/> (English and Indonesian version of iPhone SE 2022 official webpage). In collecting the data, the researcher accessed the official webpages of iPhone 14, iPhone 14 Pro, and iPhone SE 2022 and read the source data thoroughly to find the appropriate data for the research. After the source data was all-scanned, the researcher continued by finding the form of hyperbolic expressions according to Claridge (2011) in the original version (English) and the translation version (Indonesian) in the form of words, phrases, clauses, and sentences appropriately. The data findings are analyzed one after one by adjusting with the categories of translation method proposed by Newmark (1988), then determined the categorization of the translation equivalence, whether it is foreignization or domestication. It is would be categorized as a foreignization if the translator dominantly used the translation methods based on the source language accentuation. Meanwhile, it would be categorized as a domestication if the translator mainly applied the translation methods based on the target language accentuation.

3. Results

The researcher found hyperbolic expressions used in iPhone 14, iPhone 14 Pro, and iPhone SE 2022 official webpages in several forms according to the category of hyperbole by Claridge (2011). Thoroughly, the finding result of the hyperbolic expressions within the webpages are 75 expressions. There are 22 hyperbolic expressions on iPhone 14 webpage, 21 hyperbolic expressions on iPhone 14 Pro webpage, and 32 hyperbolic expressions on iPhone SE 2022 official webpage. Furthermore, based on the hyperbolic expression findings, the researcher continued by determined the translation method used by the translator according to Newmark (1988) individually. The finding or the result on the quantity and percentage of hyperbolic expressions within the three websites is presented in Table 1.

Table 1: Quantity and Percentage of Hyperbolic Expressions used in iPhone 14, iPhone 14 Pro, and iPhone SE 2022 Official Webpages

Types of Hyperbole	iPhone 14		iPhone 14 Pro		iPhone SE 2022	
	Qty	%	Qty	%	Qty	%
Single-word Hyperbole	9	40	6	28	14	44
Phrasal Hyperbole	3	14	8	38	12	37
Clausal Hyperbole	0	0	1	5	1	3
Numerical Hyperbole	0	0	1	5	1	3
Superlative Hyperbole	7	32	4	19	4	13
Comparison Hyperbole	2	9	1	5	0	0
Repetition Hyperbole	1	5	0	0	0	0
Total	22	100	21	100	32	100

The total findings of hyperbole types used in iPhone 14 which is 22 hyperbole expressions, single-word hyperbole is the highest amount of hyperbole types which appeared nine times (40%). Afterward, followed by superlative hyperbole which appeared seven times (32%), phrasal hyperbole which appeared three times (14%), comparison hyperbole which appeared two times (9%), repetition hyperbole which appeared one time (5%), and the lowest amount of hyperbole types are held by clausal and numerical hyperbole in which these types did not appear in iPhone 14 official webpage. The hyperbolic expressions used in iPhone 14 Pro official webpage is 21 expressions. The highest amount of hyperbole types used in iPhone 14 Pro official webpages is phrasal hyperbole in which each type totaling eight times appeared (38%), the second position is single-word hyperbole which appeared six times (28%), the third position is superlative hyperbole which appeared four times (19%), and the fourth position consists of three types of hyperbole which is clausal hyperbole, numerical hyperbole, and comparison hyperbole in which each type appeared one time (5%). Moreover, repetition hyperbole has not appeared in the findings of hyperbolic expressions used in iPhone 14 Pro official webpages. Meanwhile, the hyperbolic expressions found in iPhone SE 2022 official webpages is 32 expressions. As identical as the finding amount of iPhone 14 and iPhone 14 Pro official webpages, the types of hyperbole that often appeared are single-word hyperbole which appeared 14 times (44%). The second most appeared hyperbole type is phrasal hyperbole which is 12 times (37%). Henceforth, the third most appeared hyperbole type is superlative hyperbole which is four times (13%), and the fourth most appeared hyperbole type are clausal hyperbole and numerical hyperbole which are one time (3%) for each type. Subsequently, comparison and repetition hyperbole are not applicable to iPhone SE 2022 official webpage.

The bold parts on each webpage indicate the most frequently appeared and used of hyperbole type used in the webpages. In iPhone 14 and iPhone SE 2022 official webpages, single-word hyperbole is the dominant type applied. In accordance with Claridge's theory, single-word hyperbole is the most ordinary realization in which only a word causes exaggeration within a content. Moreover, this type has a particular impact. It is when the word is omitted the exaggerated effect also disappears. In the meantime, on iPhone 14 Pro official webpage, the most

frequently emerged is phrasal hyperbole. This type contains universal forms in which the hyperbole can be made in any word and sense. Claridge (2011) denoted that phrasal hyperbole is possibly arranged by other formats such as a number, superlative form, or any global descriptor.

Furthermore, the quantity and percentage of each method of translation applied in iPhone 14, iPhone 14 Pro, and iPhone SE 2022 official webpages can be seen in Table 2.

Table 2: Quantity and Percentage of Translation Methods applied in iPhone 14, iPhone 14 Pro, and iPhone SE 2022 Official Webpages

Translation Method	iPhone 14		iPhone 14 Pro		iPhone SE (2022)	
	Qty	%	Qty	%	Qty	%
Word-for-Word Translation	5	23	3	15	9	28
Literal Translation	6	27	4	19	3	9
Faithful Translation	5	23	4	19	3	9
Semantic Translation	4	19	4	19	9	28
Adaptation Translation	1	4	2	9	1	4
Free Translation	0	0	2	9	4	13
Idiomatic Translation	0	0	1	5	0	0
Communicative Translation	1	4	1	5	3	9
Total	22	100	21	100	32	100

The translator dominantly used the literal translation method as the translation method applied six times (27%) for each method in translating the hyperbolic expressions of iPhone 14 official webpages. Subsequently, the word for word translation and faithful translation were applied five times (23%) for each method, the semantic translation was applied four times (19%), the adaptation and communicative translation was applied only one time (4%) for each method. In the meantime, the free translation, and the idiomatic translation were not used by the translator in translating hyperbolic expressions of the iPhone 14 official webpage. Moreover, in translating the hyperbolic expressions of iPhone 14 Pro, the translator frequently applied the literal, semantic, and faithful translation in delivering the hyperbolic expressions of iPhone 14 Pro as it was used five times (19%) for each method. Afterward, the word-for-word translation was applied three times (15%), the free translation was applied two times (9%), the adaptation translation, the idiomatic translation and the communicative translation were also only applied one time (5%) for each method. Different from iPhone 14 and 14 Pro, the translator mostly applied the word-for-word translation and the semantic translation in translating hyperbolic expressions of iPhone SE 2022 which appeared nine times (28%) for each method. Thereafter, the free translation was applied four times (10%), the literal translation, the faithful translation, and the communicative translation were applied three times (9%) for each method, and the adaptation translation was applied one time (4%). Meanwhile, the idiomatic translation was not preferred by the translator to translate the hyperbolic expressions of iPhone SE 2022.

4. Discussion

This research indicates that the translator is truly accentuating the source language as the methods that emphasize the viewpoint of the source language reached higher than the other one. The researcher considers that the decision chosen by the translator indicated wisdom and carefulness in delivering the message. Besides, the translator recognized that the data sources hold much information and is attractively delivered since it was in the form of an advertisement. Hence, the translator attempted to keep the meaning of the source language almost thoroughly rather than misinformation occurring in the translation result.

4.1. Types of Hyperbole used in iPhone 14, iPhone 14 Pro, and iPhone SE 2022 Official Webpages

Based on Claridge (2011), each type of hyperbole found in iPhone 14, iPhone 14 Pro, and iPhone SE 2022 official webpages is described and accounted for below.

4.1.1 Single-word Hyperbole

Single-word hyperbole can be identified when there is any particular word that gives an exaggerated term within the context. Meanwhile, when the exaggerated word is deleted, it would go back to an ordinary context.

Excerpt (taken from iPhone 14 Official Webpage)

A magical new way to interact with iPhone

The word *magical* is another example of single-word hyperbole applied to the data found. According to Merriam-Webster Dictionaries, something that describes as magical, it is explained that the thing is extremely pleasant, inspiring, or enjoyable. The word *magical* represents an overstatement as the expression depicts that the new way to interact with iPhone is highly pleasurable. In case that the word *magical* is removed, probably it only shows a new way to interact with iPhone regularly. Therefore, it indicates that a single-word hyperbole is only a word that gives a huge impact within a particular context.

4.1.2 Phrasal Hyperbole

Phrasal hyperbole is a combination of hyperbole between senses and words. It usually appears in several kinds of phrases. The phrase that often comes up in hyperbolic meaning is a noun phrase (NP).

Excerpt (taken from iPhone 14 Pro Official Webpage)

An innovative 48MP camera for mind-blowing detail

Based on the structure, the phrase *mind-blowing detail* is a form of a noun phrase (NP) in which the adjective *mind-blowing* is a pre-modifier and the noun *detail* is the head. The NP *mind-blowing detail* is also a creative NP which is creatively converted from the standard NP *detail which blows the mind* (cf. Jumanto, 2017). Moreover, based on Oxford Learner's Dictionaries, the adjective *mind-blowing* is an extremely interesting and surprising feeling about a certain thing. The excerpt above explains the ability of the 48MP camera which is able to produce a very impressive detail of the picture.

4.1.3 Clausal Hyperbole

According to Claridge (2011), clausal hyperbole is formed as a combination of the two or more constituents of a clause. During analyze the types of hyperbole used in iPhone 14, iPhone 14 Pro, and iPhone SE 2022 official webpages, the researcher merely found one expression which evidenced a clausal hyperbole.

Excerpt (taken from iPhone SE 2022 Official Webpage)

The Retina HD display makes everything look incredible

This excerpt is categorized as a clausal hyperbole since the structure is in the form of a clause which becomes elucidatory of *the Retina HD display*. According to Oxford Learner's Dictionaries, the word *incredible* is an adjective that explains something that can be extremely good. In the context, the clausal hyperbole *everything looks incredible* functions to describe the performance of *the Retina HD display* which can create the maximum result so that everything that appears from the display looks in excellent quality. The adjective *incredible* is a highly effective way of presenting an exaggerated effect within the text.

4.1.4 Numerical Hyperbole

Numerical hyperbole is a type of hyperbole in which numbers has a big role to create exaggerated expressions on a larger-scale (Claridge, 2011). The use of numerical terms such as hundreds, thousands, etc., causes an effective and conspicuous exaggeration within a particular context without any detailed context needed.

Excerpt (taken from iPhone 14 Pro Official Webpage)

Putting tons of framing flexibility in your pocket.

The word *ton* indicates a numerical hyperbole as *ton* is part of a weight measurement. Based on Oxford Learners Dictionaries, *tons* can be applied in an informal form that can describe something in a high quantity. In the expressions above, the word *ton* represents the numerous flexible abilities in taking a picture with the camera.

4.1.5 Superlative Hyperbole

Superlative hyperbole is related to relativity in high potency (Claridge, 2011). Bolinger (in Claridge, 2011) defined that the superlative can bounce the scale of any adjective out of the limits.

Excerpt (taken from iPhone 14 Official Webpage)

Cinematic mode automatically shifts focus to the most important subject in a scene, just like filmmakers do.

The researcher highlighted the phrase *the most important subject in a scene* as a form of superlative. It can be characterized by determiner *the most* which based on Oxford Learner's Dictionaries, is defined as showing a number or amount in the largest degree. According to the expressions, the phrase *the most important subject in a scene* as a perfect, standard, M-H-M NP with *the most important* as pre-modifier and *in a scene* as post-modifier to the head *subject* (cf. Jumanto, 2017) has a role as an emphasis on the ability of the cinematic mode feature in which the feature can capture the most substantial object in the camera. Moreover, the phrase also works as an attraction to the target buyer who regularly wants to take their best and most significant picture.

4.1.6 Comparison Hyperbole

Comparison hyperbole is characterized as non-metaphorical comparison and using a comparative device such as the word *than*, *as*, or *like*. Claridge (2011) explained that the rule of comparison hyperbole enables to compare two entities which are totally impossible or are creating an impossibility result. Furthermore, conducting a comparison caused the entity being maximum.

Excerpt (taken from iPhone 14 Official Webpage)

Home movies that look like Hollywood movies

The comparison hyperbole in the finding known by the phrase *look like Hollywood movies*. As mentioned before, the preposition *like* indicates a comparative article that has meaning to show an equation between two particular entities. Moreover, the comparative phrase *look like Hollywood movies* is intended to represent that the ability of the iPhone in making videos has the best quality so that it can be equated with Hollywood movies. Whereas, creating a Hollywood movie is not effortless work. It certainly requires a lot of jobs that are impossible to easily follow by the capability of a phone. Therefore, the comparative phrase above definitely compares two things that are resulting in an impossibility.

4.1.7 Repetition Hyperbole

According to Claridge (2011), repetition form in hyperbole is the simplest way to say that something is more than another. It is conducted by restating the same thing several times without any interruption. Moreover, repetition creates something more significant and communicatively engaging. In this study, the researcher only identified one repetition of hyperbole within the data source.

Excerpt (taken from iPhone 14 Official Webpage)

Big and bigger

Repetition form is found in the adjective *big* which means something in the large size, amount, or degree. The repetitive expressions *big and bigger* are used to explain the particular size and emphasize the length of the iPhone.

4.2. Translation Method of Hyperbolic Expressions used in iPhone 14, iPhone 14 Pro, and iPhone SE 2022 Official Webpages

After identifying hyperbolic expressions in the data source, the researcher continued to examine the method applied in the translation of iPhone 14, iPhone 14 Pro, and iPhone SE 2022 official webpages. Hence, the description of the analysis result about the use of the translation method would be interpreted below.

4.2.1 Word-for-word Translation

Nababan (as cited in Anshori, 2010) explained that fundamentally, the word-for-word translation method is tightly bound to word structure. In translating, the translator only finds the equivalent word of the source language in the target language without altering the word structure within the translation.

Excerpt (taken from iPhone SE 2022 Official Webpage)

SL: The Retina HD display makes everything look incredible

TL: *Layar Retina HD membuat segalanya tampak luar biasa*

Another example of word-for-word translation is the hyperbolic expressions *everything look incredible* translated according to the structure of the source language into *segalanya tampak luar biasa*. In this process, the translator translated the message as equal to the sequence of the word in the source language. In the translation, *everything* is translated into *segalanya*, *look* is translated into *tampak*, and *incredible* is translated into *luar biasa*. Even though the expressions is translated structurally into the target language, the meaning of the source language is still easy to be understood by the reader of the target language.

4.2.2. Literal Translation

Anshori (2010) elucidated in the beginning that a literal translation is conducted similarly to word-for-word translation, but then, the translator attempted to adjust the wording of the translation with the wording of the target language. This method is applied when the sentence structure of the source language is distinct from the sentence structure of the target language.

Excerpt (taken from iPhone 14 Pro Official Webpage)

SL: The most secure facial authentication in a smartphone

TL: *Autentikasi wajah paling aman di ponsel pintar*

This is an example of how the translator translated the source text into the target text literally as every word is translated appropriately but in terms of the structure, the translator changed into the target language viewpoint. It can be identified by the difference in the structure that occurred in both the source language and the target language. In the source language, the structure of the phrase consists of article + pre-modifier (adjective) + head (noun) in which the article *the*, the pre-modifier *most secure*, and the noun head *facial authentication*. Meanwhile, in the phrase structure of the target language, Maryono (2010) explained that one of the structures of the noun phrase is (noun + noun) + adjective. (Noun + noun) functions as a center, and the adjective function as an attribute. In the target language, *autentikasi wajah* is a center which is (noun + noun), and *paling aman* is an attribute which is an adjective.

4.2.3. Faithful Translation

Newmark (1988) defined that faithful translation is conducted to create a meaning contextually of a source language. Moreover, Puspita (2020) elucidated that to translate faithfully, the translator needs to deliver the meaning of cultural words and at the same time retain the grammatical and lexical aspects of the source language within the translation. Flora (as cited in Puspita 2020) explained that faithful translation is when a translator attempts to maintain the meaning of the sentence but it is changeable and related to the context.

Excerpt (taken from iPhone SE 2022 Official Webpage)

SL: Almost 1.8 million awe-inspiring apps

TL: *Hampir 1,8 juta aplikasi yang menginspirasi*

Andrian (2014) explained that faithful translation is a translation that endeavors to retain the aspect of the format in the source language to exist in the target language so that the reader can still notice completely the faithful of the word used in the target language. It can be identified through excerpt 3 that the hyperbole expressions *awe-*

inspiring is translated into *menginspirasi*. According to Oxford Learner's Dictionary, *awe-inspiring* means to express admiration greatly for a certain thing. Here, the translator delivered the message from the source language into the target language faithfully since the word form of *menginspirasi* is the most loyal to the hyperbolic expressions *awe-inspiring*.

4.2.4. Semantic Translation

Semantic translation is related to aesthetical form and flexibility of the translation result. Newmark (1988) emphasized that semantic translation should regard the beauty and natural component within the source language even sacrificing the literal meaning. In the excerpt above, the researcher described how semantic translation is applied in translating the hyperbolic expressions by the translator.

Excerpt (taken from iPhone 14 Official Webpage)

SL: High resolution and color accuracy make everything look sharp and true to life

TL: *Resolusi dan akurasi warna yang tinggi menjadikan semuanya terlihat tajam dan begitu hidup.*

According to Oxford Learner's Dictionaries, the phrasal hyperbole *true to life* is categorized as an idiomatic form that expresses that an invention seems tangible. Furthermore, the translation in the target language *begitu hidup* also an expression to show an aesthetic value as it explains that *hidup* means something remains, exists, and does not disappear. Both the source text and the target text contain an aesthetic expressions and quite identical meaning. Similar to the explanation before, although the phrasal hyperbole *true to life* is an idiom. However, the idiomatic form was not maintained by the translator in the translation result and could not be classified as an idiomatic translation. Hence, the researcher decided that the method used in translating the hyperbole is a semantic translation.

4.2.5. Adaptation Translation

Newmark (1988) elucidated that adaptation translation is the method the translator delivers the message by converting the cultural meaning of the source language to the cultural meaning of the target language. Moreover, Anshori (2010) considered that adaptation translation is a type of translation method in which the meaning of the target language is freest and closest to the message of the target language.

Excerpt (taken from iPhone SE 2022 Official Webpage)

SL: A camera you'll instantly click with.

TL: *Kamera yang langsung klik dengan Anda.*

The excerpt is identified as the adaptation translation as the source language and the target language have different terms. According to Collins Dictionaries, *instantly* is an adverb of manner arranged from the countable noun *instant + ly* in which *instant* explain a certain period in an extremely short time. In the target language, the adverb *instantly* was translated into *yang langsung* in which *yang* is a conjunction, and *langsung* is an adverb that means something comes without any intermediary and stopping. In terms of contextual meaning, *instantly* and *yang langsung* have a similar meaning which is to explain something immediately. Even though both terms are expressed in different cultural words, the meaning of the term was well-delivered to the target reader.

4.2.6. Free Translation

Newmark (1988) elucidated that free translation is conducted by creating the meaning without considering the form of the source language. This method allows the translator to sharpen the creativity in delivering the meaning of the source language to the target language.

Excerpt (taken from iPhone SE 2022 Official Webpage)

SL: Music, made magic

TL: *Musik semakin merdu*

The excerpt is identified as a free translation as the target language is translated freely from the source language. In the source language, *made magic* means an activity to create something in the sense of sorcery (Collins Dictionaries, 2022). In relation to the context, it means the iPhone SE 2022 can elevate the music in a better way in which it is portrayed as magic. According to Oxford Learner's Dictionary, *magic* means a certain high quality

or the ability of something so that the noun *magic* can produce an extra meaning for the product. Furthermore, in the target language, the expression *semakin merdu* has closely related to the music. *Semakin* is an adverb that means an action to escalate, and *Merdu* means something pleasant to hear. Contextually, *semakin merdu* shows that the music produced by the iPhone SE 2022 would sound better. The translation of the hyperbole *made magic* into *semakin merdu* is also a creative human translation that no translation machine can probably do, which transfers the metalanguage (connotation) *made magic* into the object language (denotation) *semakin merdu* (see: Jumanto et al., 2022). Thus, although both languages have their own way of delivering the message without any relation in terms of diction, their intended meaning was equal and delivered appropriately.

4.2.7 Idiomatic Translation

According to Puspita (2020), idiomatic translation is a translation that is related to the expressions of an idiom that appeared in the source language and the target language. In the process of the translation, Anshori (2010) explained that in the translation process, the translator reproduces the message of the source language which contains a familiarity effect and idiomatic expressions in which not obtained from the source language.

Excerpt (taken from iPhone 14 Pro Official Webpage)

SL: See why the new Super Retina XDR display is like nothing else.

TL: *Lihat mengapa layar Super Retina XDR baru tidak ada duanya.*

According to Oxford Learner's Dictionaries, the idiom *like nothing else* means nothing another action can do except the one mentioned. Furthermore, Puspita (2020) explained that idiomatic expressions should be delivered into the idiomatic expressions as well. In the target text, the translator translated the idiom *like nothing else* into another idiom that is *tidak ada duanya*. The idiom *tidak ada duanya* means nothing for the second option. Hence, it has a similar meaning to the idiom *like nothing else*, so it can be categorized as an idiomatic translation.

4.2.8 Communicative Translation

Andrian (2014) explained that communicative translation is a translation in which the meaning of the message is a significant aspect yet does not have to translate freely. In accordance with the title, communicative translation absolutely pays attention to the communicative principle which is the reader and the purpose of the translation.

Excerpt (taken from iPhone 14 Official Webpage)

SL: Our longest battery life ever

TL: *Baterai kami yang paling tahan lama*

The communicative translation involves the point of view of the target reader so that the purpose of the message would be well-received by the target reader. In this excerpt, the expression *our longest battery life ever* wants to present that the battery life of the iPhone 14 has the biggest power. Meanwhile, in the target language, the term *longest* is rarely used to describe something in terms of durability. In the translation, the use of the term *tahan lama* which means to explain something in a long-lasting was a proper decision by the translator to deliver the meaning of *longest battery life* instead of maintaining the literal meaning. Accordingly, the message of the source language is already conveyed communicatively in the target language.

4.3. Translation Equivalence of Hyperbolic Expressions used in iPhone 14, iPhone 14 Pro, and iPhone SE 2022 Official Webpages

The researcher attempted to adjust and summarize the result of the analysis of the translation method of hyperbolic expressions used in iPhone 14, iPhone 14 Pro, and iPhone SE 2022 Official Websites to discover the equivalence degrees of the translation. Table 3 presents the equivalence degrees of the three webpages.

Table 3: The Equivalence Degrees of the Translation Methods of Hiperbolic Expressions Used in iPhone 14, iPhone 14 Pro, and iPhone SE 2022 Official Webpages

	Translation Method	iPhone 14	iPhone 14 Pro	iPhone SE 2022
Foreignization	Word-for-word	23%	15%	28%
	Translation			
	Literal Translation	27%	19%	9%

	Faithful Translation	23%	19%	9%
	Semantic Translation	19%	19%	28%
Total		92%	72%	74%
	Adaptation Translation	4%	9%	4%
	Free Translation	0%	9%	13%
Domestication	Idiomatic Translation	0%	5%	0%
	Communicative Translation	4%	5%	9%
Total		8%	28%	26%

The translator tended to use the foreignization strategy to translate the hyperbolic expressions used in iPhone 14, iPhone 14 Pro, and iPhone SE 2022. It indicates that all of the webpages are more accentuated and are on the side of the source language rather than the target language. Thus, it also can be perceived that the translator was highly considered of the language form and the genuineness of the grammatical of the source language. In terms of cultural value, it can be seen that the products are globally produced that affect the way to market, one is through the advertisement on the webpage. A probability that might cause the translator to tend to foreignization is the translator deliberately carries the culture of the source language into the target language. It is because the translator has a role as a bridge to introduce the foreign product to the local society through the explanation on the webpages since the products are world widely sold. Thus, the translator attempted to maintain the culture that existed in the source language to the target language, so one of the main purposes of the company can be achieved. Some risks might happen to the target reader. The target readers who do not care about the method used by the translator to deliver the meaning would not have bothered by the language phenomenon since they only focus on the product offered. Meanwhile, for the target readers who are concerned by the language things or require some further explanations through the webpages, it might bring up misconception and confusion by them to understand the intention of the source language. Therefore, it depends on the translator about how the meaning should be conveyed appropriately to the target reader.

The entire types of hyperbole according to Claridge (2011) such as single-word hyperbole, phrasal hyperbole, clausal hyperbole, numerical hyperbole, superlative hyperbole, comparison hyperbole, and repetition hyperbole appeared within the official webpages of iPhone 14, iPhone 14 Pro, and iPhone SE 2022. The translation method applied by the translator was dominantly based on the source language accentuation such as word-for-word translation, literal translation, faithful translation, and semantic translation. Therefore, the translation equivalence regarding to the most applied methods is foreignization. The translator intentionally brings the culture of the source language or the foreign language into the target language or the local language to introduce the foreign product specifications to the local society through the description of the products in the webpages.

Acknowledgment

The authors would like to express their sincere gratitude to the Rector of Universitas Dian Nuswantoro, Semarang, Indonesia, the Dean of Faculty of Humanities, and the Head of English Department. The authors also thank the Language Advisor of this thesis, Professor Jumanto Jumanto, for all the valuable suggestions as well as the guidance, from the initial thesis draft through the completion of the thesis and its conversion into a journal manuscript.

References

- Aditiawan, R. T. (2020). Penggunaan Frasa Nomina dalam Surat Kabar Jawa Pos: Kontruksi Frasa Nomina [Use of Noun Phrases in Jawa Pos Newspaper]. *Belajar bahasa: jurnal ilmiah program studi pendidikan bahasa dan sastra Indonesia, Volume 5*, (2), 221-232. DOI: 10.32528/bb.v5i2.3243
- Aljadaan, N. (2018). Understanding Hyperbole. *Arab World English Journal*, October 2018, 1-31. DOI: <https://dx.doi.org/10.24093/awej/th.212>
- Anshori, S. (2010). Teknik, Metode, dan Ideologi Penerjemahan Buku Economic Concepts of Ibn Timiyah” ke dalam Bahasa Indonesia dan Dampaknya Pada Kualitas Terjemahan [Techniques, Methods, and Ideologies in the Translation of the Book “Economic Concepts of Ibn Timiyah” into Indonesian and the Effects on Translation Quality]. *A Master's Thesis*. Universitas Sebelas Maret Surakarta, 2010. <https://core.ac.uk/download/pdf/12348182.pdf>
- Barbu-Kleitch, Oana. (2015). Use of Hyperboles in Advertising Effectiveness. *International Conference RCIC' 15: Redefining Community in International Context*. Brasov, 21-23 May 2015, pp. 175-184. <https://www.afahc.ro/ro/rcic/2015/rcic'15/PC/Barbu-Kleitsch.pdf>
- Chen, S. Y. (2014). Bilingual Advertising in Melbourne Chinatown. *Journal of International Students*, Volume 4, (4), 389-396. DOI: <https://doi.org/10.32674/jis.v4i4.457>
- Claridge, C. (2011). *Hyperbole in English* (M. Kyto, Ed.). Cambridge University Press. DOI: <https://doi.org/10.1017/CBO9780511779480>
- Cook, G. (2001). *The Discourse of Advertising* (2nd Edition). United Kingdom: Routledge.
- Creswell, J. W. (2009). *Research Design Qualitative, Quantitative, and Mixed Methods Approaches* (V. Knight, S. Connelly, L. Habib, S. K. Quensenberry, & M. P. Scott, Eds.; 3rd Edition). New York: SAGE Publications.
- Fan, Y. (2013, December). The Lexical Features of English Advertisement. *Proceedings of the 2013 International Conference on the Modern Development of Humanities and Social Science*. Dordrecht: Atlantis Press.
- Goddard, A. (2001). *The Language of Advertising* (R. Carter & A. Goddard, Eds.). Great Britain: Taylor & Francis e-Library.
- Jumanto, Jumanto. (2017). *Noun Phrases: A Set of Comprehensive Facts and Some Theoretical Tendencies* (Second Edition). Yogyakarta: Morfalingua. ISBN/ISSN. 978-602-60133-3-0.
- Jumanto, J., Nugroho, R. A., & Basari, A. (2018). Pragmatics and Translation: A Preliminary Study. *Shaping New Understandings in ELT*, 17-26. Malaysia: Universiti Putra Malaysia. https://spel3.upm.edu.my/max/dokumen/MICELT_MICELT_2018_-_PROCEEDINGS.pdf
- Jumanto, J., Asmarani, R., Rizal, S. S., Sulistyorini, H. (2022). The Discrepancies of Online Translation-Machine Performances: A Mini-Test on Object Language and Metalanguage. *2022 International Seminar on Application for Technology of Information and Communication (iSemantic)*, Semarang, Indonesia, 2022, pp. 27-35, doi: 10.1109/iSemantic55962.2022.9920394. <https://ieeexplore.ieee.org/document/9920394>.
- Keraf, G. (1991). *Diksi dan Gaya Bahasa* (7th Edition). Jakarta: PT Gramedia Pustaka Utama.
- Kilian, F. R. (2019). The English - Indonesian Translation Analysis of Figurative Language in the Novel “To Kill a Mockingbird” by Harper Lee. *JELLT*, 3, (2), 57-68. DOI: <https://doi.org/10.36597/jellt.v3i2.5995>
- Maryono. (2010). Frasa Nomina yang Terdiri dari Tiga Kata dalam Bahasa Indonesia [Noun Phrases with Three Words in Indonesian]. *A Master's Thesis*. Universitas Sanata Dharma, 2010. <https://repository.usd.ac.id/25502/>
- Mc Millan, J., & Schumacher, S. (2014). *Research in Education Evidence-Based Inquiry* (7th Edition). London: Pearson Education Limited. <https://files.pearsoned.de/ps/ext/9781292035871>
- Molina, L., & Albir, A. H. (2002). Translation Technique Revisited: A Dynamic and functionalist Approach. Barcelona: Universitat Autònoma de Barcelona. https://ddd.uab.cat/pub/artpub/2002/137439/meta_a2002v47n4p498.pdf
- Newmark, P. (1988). *A Textbook of Translation* (1st Edition). Rome, Italy: Prentice Hall.
- Nida, E. A., & Taber, C. R. (1982). *The Theory and Practice of Translation* (Vol. 8). Leiden: E.J Brill.
- Nugraha, A., Nugroho, M. A. B., & Rahman, Y. (2017). English - Indonesian Translation Methods in the Short Story “A Blunder” by Anton Chekhov. *Indonesian EFL Journal*, 3, (1), 79-86. DOI: <https://doi.org/10.25134/iefj.v3i1.656>
- Oktafiana, Y., & Wibisono, G. (2020). Ekuivalensi Terjemahan Subtitle Film Better Days 《少年的你》 Versi Bahasa Mandarin (Bsu) Dengan Versi Bahasa Indonesia (Bsa). *Jurnal Pendidikan Bahasa Mandarin Unesa* [Translation Equivalence of the Film Subtitle Better Days of the Mandarin Version (SL) and the Indonesian Version (TL)], 3, (2), 1-15. <https://ejournal.unesa.ac.id/index.php/manadarin/article/view/46836>
- Prajutha, R. (2010). Domestication and Foreignization Strategies on Translated Novel of “The Tales of Beedle the Bard”. An Undergraduate's Thesis. Malang: Universitas Brawijaya. <http://repository.ub.ac.id/id/eprint/100307/>

- Purnastuti, L. (2004). Perdagangan Elektronik: Suatu Bentuk Pasar Baru yang Menjanjikan? [E-Commerce: A New Form of Promising Market?]. *Jurnal Ekonomi & Pendidikan*, 1, (1), 10-22. <https://journal.uny.ac.id/index.php/jep/article/view/669/533>
- Puspita, A. T. (2020). The Use of Newmark Translation Methods in English to Indonesian Rendering of Austen's Emma. *An Undergraduate's Thesis*. Semarang: Universitas Negeri Semarang. <http://lib.unnes.ac.id/41252/>
- Sahaduta, Y., & Nugroho, R. A. (2013). The Equivalence of Figurative Language used in English and Indonesian Versions of Songs "Be Careful with My Heart (Tetaplah di Hatiku)" and "Denpasar Moon." An Undergraduate's Thesis. Semarang: Universitas Dian Nuswantoro. <https://repository.dinus.ac.id/>
- Salsabila, R., & Jumanto, J. (2020). Translation Strategies for Cultural Expressions in Garuda Indonesia's Inflight Magazine "Colors." *Journal BASIS*, 7, (1), 185-198. DOI: <https://doi.org/10.33884/basisupb.v7i1.1899>
- Sari, D. N., & Jumanto, J. (2015). A Contrastive Analysis between English Idioms and Their Indonesian Translations in the Novel The Girl on the Train by Paula Hawkins (2015). *E-Structural*, 1, (1), 88-100. <https://publikasi.dinus.ac.id/index.php/estructural/article/view/1824>
- Siregar, R. (2016). Pentingnya Pengetahuan Ideologi Penerjemahan Bagi Penerjemah [The Importance of Knowledge on Translation Ideologies for Translators]. *Jurnal Penelitian Pendidikan Bahasa Dan Sastra*, 1, (1), 1-8. <https://media.neliti.com/media/publications/289234-pentingnya-pengetahuan-ideologi-penerjem-74a3ae35.pdf>
- Suprpto, Tarjana, S., & Nababan. (2019). A Study on the Techniques and Methods of the Translation of the Political Text in the International Political News in Printed Media. *Proceeding of International Conference on Art, Language, and Culture*. Surakarta: Universitas Negeri Sebelas Maret. <https://jurnal.uns.ac.id/icalc/article/view/28324>
- Tommy, Andrian. (2014). Klasifikasi Ragam Penerjemahan Berdasarkan Metode Penerjemahan dalam Diagram V Peter Newmark: Kajian Teoretis Aplikatif [Classification of Translation Types Based on Translation Methods within Peter Newmark's V Diagram: An Applicative Theoretical Study]. *Prosiding Seminar Hasil Penelitian Semester Ganjil 2013/2014*, (1), 45-66. ISSN 2337-7976
- Venuti, L. (2004). *The Translation Studies Reader* (L. Venuti & M. Baker, Eds.). Great Britain: Taylor & Francis e-Library.
- Venuti, L. (2004). *The Translator's Invisibility* (S. Bassnett & Lefevere Andre, Eds.). Great Britain: Taylor & Francis e-Library.
- Wahyuni, L. M. S., & Pradhana, N. I. (2017). Penerjemahan Majas Hiperbola dalam Novel "Kazemachi No Hito" Karya Ibuki Yuki [The Translation of Hyperboles in the Novel "Kazemachi No Hito" by Ibuki Yuki]. *Jurnal Humanis, Fakultas Ilmu Budaya Unud*, 20, 1 Agustus 2017, 57-65. <https://scholar.google.co.id/citations?user=EPT82XcAAAAJ&hl=en>
- Yamananda, I. (2016). A Translation Analysis of Superlative Form of Hyperbolic Expressions in the Novel Entitled "The Adventure of Sherlock Holmes" by Sir Arthur Conan Doyle. *An Undergraduate's Thesis*. file:///C:/Users/ASUS/Downloads/COVER.pdf.



Redundancy and Economy as a Dialectical Manifestation of Language Units

Isayeva Safura Ilgar Gizi¹

¹ Western Caspian University. <https://orcid.org/0000-0003-0822-1222>

Abstract

This article deals with the principles of redundancy and economy as a dialectical manifestation of language units. In language, the principles of excess and economy form a dialectical unity. The ratio of economy and redundancy depends on the morphological structure of the language, the functioning of its elements, the analyzed level, the duality of language units, etc. What appears as surplus from one point of view is perceived as economy from another; often those that are redundant in content are considered economical in expression. In order to correctly assess the role and place of the principle of economy in the development and functioning of the language, it is necessary to investigate what the essence of this principle is, its source and the means of its implementation in the language. The study investigated that the principle of economy is universal, that is, it acts as one of the main reasons for changes in all languages. The study concluded that the principles of economy and redundancy help to reveal the essence of the most important processes of language activity. It is necessary to see the manifestation of economy not only where the language "shrinks", but also where it "expands".

Keywords: Economy, Redundancy, Language System, Tendency, Speech

1. Introduction

It has been repeatedly noted in the literature that two opposite tendencies constantly operate in natural language: the tendency to save effort and the tendency to provide redundancy. The action of these tendencies is directly related to the intentions of the two main participants in speech activity - the speaker and the listener. From the speaker's point of view, of course, it is better to choose a more economical means for expressing thoughts, i.e. the speaker saves "generative" means. The listener, on the other hand, saves "perceptual" means, i.e. interested in the simplest possible transition from text to thought (meaning), which is facilitated by the optimal level of redundancy; so the direct opposition economy and redundancy is not quite correct; more correct contrasting what exactly is saved by each participant communications. However, in order not to break the tradition, in the following presentation we will use the terminological phrase "principle of economy" to refer to the mechanisms and results of activities of these mechanisms to ensure "generative" economies. Unfortunately, in the history of linguistics, the complex interplay of relevant principles has been neglected. The most famous was the principle of economy ((Zipf1949; Martinet 1960; Uldall 1960), etc.), although often this principle, or law, is mentioned together with the "opposite" principle of redundancy. And if the principle of economy is always presented at the level of linguistic regularity, then redundancy is very often characterized negatively, as a speech deficiency.

2. Objective of the study

The purpose of the work is to give a general description of the principles of redundancy and economy, their being a dialectical manifestation of language units, defining the relationship between them, identifying the difficulties of redundancy in speech.

3. Methodology

Research methods include direct contextual analysis, cognitive-linguistic, or linguistic description. With the help of these methods the main features of redundancy and economy are clarified. To solve the tasks set, these make it possible to subject the empirical material to a comprehensive linguistic consideration.

4. Presentation and discussion

Historically, approaches to redundancy in linguistics have varied. A. Martine shows that redundancy does not play a serious role in the communication process, but only formally participates. G. Gleason states that redundancy is not a defect or deficiency in language and considers it, on the contrary, one of the important aspects of language activity. N.B. Mechkovskaya (Mechkovskaya, 2003) mentions that redundancy is characteristic of all natural languages as a universal language phenomenon. According to L.R. Zinder, (Zinder, 1979) the correct understanding of speech depends not only on the quality of communication, but also on the redundancy inherent in information. Over-specification and increased predictability lead to information duplication and redundancy. We will incorporate this idea. According to Hunnicutt, "Redundancy points to a more linguistically sound definition, claiming systematicity in human language (and speech). It refers to the information above what is important in a complete sentence" (Hunnicutt, 2016). This definition means that grammar will be a tool related to linguistic redundancy. Most of the definitions given to the principle of sufficiency are functional in nature. These definitions focus on the purpose of redundancy.

In contrast to economy, characterized by minimum respiratory consumption, which ensures the accuracy and compactness of speech, the excess may at first glance appear to be a loss of speech energy, but in fact, it can be interpreted as a reduction of mental energy consumption. Characterized as an excess of linguistic means, surplus as a concept opposed to economy is related to the conditions in which the exchange of ideas takes place. If communication takes place in an unfavorable environment accompanied by obstacles, then redundancy plays an important role in the effective decoding of information by the addressee. In this section, redundancy and economy in language are explored as actual problems. In language, the principles of redundancy and economy form a dialectical unity. The ratio of economy and redundancy depends on the morphological structure of the language, the functioning of its elements, the analyzed level, the duality of language units, etc. What appears as surplus from one point of view is perceived as saving from another; often those that are redundant in content are considered economical in expression. According to Academician K. Abdullayev, *"the fact that sentence members perform a certain function is related to the principle of economy language tools, which have a certain value from a functional point of view in the structure of the sentence"* (Abdullayev, 1998). He writes: *"The famous Russian scientist B.A. Serebrennikov notes that the human body is the source of the tendency to save. The principle of economy in language is a concrete manifestation of the instinct of self-defense. This is a specific reaction to the overworking of physiological tension, a process that complicates the work of memory, resists any disturbance to the implementation of some functions in the brain related to the generation and perception of speech"* (Abdullayev, 1998). A.Martinet's thoughts about redundancy are interesting: *"If we consider the redundancy of speech exchange conditions to be important for effective communication, it may at first look like a waste of articulate energy, but in most cases it is an abbreviation"* (Martinet, 1987). According to N.V. Grudeva, *"redundancy acts in the form of duplication and is the verbal repetition of any elements of meaning in the sentences in contact"* (Grudeva, 2008).

Despite considering the principle of economy together with redundancy the most famous of which was considered the principle of economy. For the first time, M. Yusifov carried out the most comprehensive study of the principle of economy in Azerbaijani linguistics. In 1976, he defended his candidate's thesis on "Economics in the language

system (based on the materials of the Azerbaijani language)" and analyzed 14 very important aspects related to economies in the work. According to the scientist, "*Language economy is a legitimate linguistic phenomenon and it determines the emergence of certain norms.*" Moreover, *if the principle of economy is presented at the level of linguistic regularity, the excess is often characterized as a lack of speech*" (Yusifov, 1976). Short scientific essays are devoted to the principle of economy in "Linguistic encyclopedias" and explanatory dictionaries published in Azerbaijan in different years. For example, in the book "Encyclopedia of Linguistics" published by "Mutercim" publishing house in 2008, the "the principle of economy" is reflected as follows: "... the law of energy conservation [using less energy], which is characterized as one of the factors influencing changes in language, in essence, the ability of the speaker to express his opinion with little effort [energy] in his speech. The law of thrift manifests itself at all levels of language. The law of economy, based on the principle of spending the least amount of effort, is the reduction of sounds, sound combinations, syllables, etc. in different parts of words. It manifests itself in the following way: For example, in Azerbaijani [sora-sonra, savayi-savay], [Tarverdi-Tanriverdi], [tabeliy-tabelik], etc. At the word correction level, there are various abbreviations and acronyms, compound words, etc. are units and events related to economy". Many issues related to the interpretation of linguistic redundancy remain unresolved to this day. These issues are partially and vaguely revealed in some works. In most cases, redundancy is studied as a concept opposite to the concept of "language economy". The principle of linguistic redundancy is characteristic of all levels of language. In linguistic studies, it is noted that redundancy at the phonetic level can be manifested in the involuntary repetition of sound. Adequacy is realized at the morphematic level in the form of unnecessary affixes, which may indicate the speaker's lack of education. At the stylistic-syntactic level, redundancy manifests itself in the form of repetition, pleonasm, tautology or hypercharacterization. It is observed at the stylistic level, in empathetic constructions, at the grammatical level, in the repetition of time constructions with appropriate temporal words. There is also purely lexical redundancy in the language. For example: *a large institution of higher education with 47000 students (Outstanding University, 2007)...is now Germany's undisputed capital city and the seat of its government and parliament (Hofmann,2017).- 47000 students (Eminent University, 2007)....is now the undisputed capital city of Germany and the seat of its government and parliament (Hofmann, 2017)*. If there are 47 thousand students in an educational institution, this undoubtedly confirms that the institution is large. In the second example, according to ABBYY Lingvo, the word *capital* means "a city or town that serves as the governmental and administrative center of a country or region." This begs the question - why are duplicate elements used here?

Consider another example:

"As you know, 2009 was the International Year of Astronomy, during which numerous scientific and educational events were held around the world" (Davidov, 2010). As it is known, 2009 was the International Year of Astronomy, and this year numerous scientific and educational events were held throughout the world (Davidov, 2010). In the given example, we encounter three cases of redundancy in the language: (As it is known,)- it is an input expression that does not carry new information; if the word has been used in the world, the (whole) word is redundant, there is no need to use the (numerous) word in front of scientific research. The development of colloquial speech is subject to specific principles and laws, which leave a mark on the selection of certain language units and conditions of use. One of the main principles is the principle of economy in language. Although the functioning and development of the language is related to many processes that take place in it, the level of spread of these processes is different. Some processes can have a universal character, find their expression in all languages, while others have a specific national character. One of such universal processes is the tendency to save language resources. However, it should be noted that the value and attitude given to this principle in different periods and by different linguists were ambiguous. Some linguists consider economy as the main law of language development, others consider it as one of the main driving forces in language development, and the rest are skeptical about the importance of the role of this principle in the development of language. In order to correctly assess the role and place of the principle of economy in the development and functioning of the language, it is necessary to investigate what the essence of this principle is, its source and the means of its implementation in the language.

The principles of economy and redundancy help to reveal the essence of the most important processes of language activity. They are considered together with concepts such as "concreteness", "simplicity", "compactness", which

are directly related to the term "economy". Their study depends on the variety of styles. Excess in speech is a careless attitude to language, a person should express himself clearly, concretely and without emotion at that moment. According to him, "simplicity has only one drawback, and that is uncertainty. In English, a superlative is a linguistic construction that consists of two or more words with a similar or identical meaning. This means that if one or more words can be removed from a statement without losing its meaning, it is redundant. The use of unnecessary expressions is considered bad style because they make it difficult to understand the text. For example, *I was going to send an email to you*. The meaning would not change if *just email* was used instead of *send an email* in this sentence. In another sentence - *He had money sufficient enough to buy a new flat*. If the word *sufficient* was removed from this sentence, the word *enough* would be enough and the meaning would not be harmed. Obviously, if these sentences are cleaned of redundancy, they will be easier to read. In addition, sometimes the use of unnecessary expressions gives the impression that the writer does not really understand what he is talking about. The structure of the language is characterized by the predominance of the principle of economy between its individual levels. I. A. Baudouin de Courtenay also emphasized this in his studies (Baudouin de Courtenay 1963). Moreover, this principle was first applied in phonetic studies and was adopted into the field of phonology only after the 1930s. In essence, the language discards unnecessary expressions and tries to preserve the most necessary ones to express the idea. K. Hasanova writes: "*In our opinion, it is more correct to clarify the issues related to the problem of saving from the point of view of prose texts in the following directions: language-thought-objective and subjective reality-saving principle. Meaning-structure systems form the basis of this quadrilateral. Saving can be detected through both meaning and structure. One of the main conditions for the principle of economy is artistic generalization*". She gives such an example: "*The doctor's duty is to look after the patient; The student's duty is to read the lesson*." In other words, they are used in the plural sense, that is, the words *student* and *doctor* actually came out in the sense of *students* and *doctors*. Sometimes it can be used in texts with very little meaning" (Hasanova, 2021).

The french linguist A. Martinet wrote in the 50s of the last century that "*language is a means of expressing thought that is constantly affected by two opposite forces. On the one hand, language is constantly changing, because the need for new expressions of the thoughts and feelings of the speakers is constantly increasing, and, of course, their means of expression are becoming more complex. On the other hand, the language does not change, because the inertia of the speakers makes itself felt, which leads to a general limitation of the means of linguistic expression*" (Martinet, 1987). Thus, from the analysis of A. Martinet's position, it follows that the language is a small force, energy or regulated by the law of economy. According to him, "*linguistic economy is a synthesis of forces operating in the language*" (Martinet, 1987).

The principle of economy is applied to the description of one or another level of the language structure. N.S. Trubetskoy, who pays special attention to the study of phonology, believes that "*each language has a certain number of applications, characterized by the potential possibilities of systematic oppositions in relation to them*" (Trubetskoy, 1969). The principle of sufficiency has been included in the methods of determining the amount of information in the light of the new theory of communication by the American mathematician J. Shannon in linguistics since the 40s of the last century. The well-known Russian linguist Yu.S. Maslov emphasizes that the language, along with economy, includes several means of formal expression, i.e., the same information. This includes both lexical and grammatical meanings (Maslov, 1987). For example, in the sentence */Two days ago we were in the library//* - the past tense is expressed in two ways. On the one hand, it is expressed by the lexeme of the past tense (*two days ago*) and the verb (*to be*). There is a similar situation in Russian. Thus, the sentence */Yesterday we took our little daughters to the Zoo//* is expressed in three additional formats. Such redundancy cannot be considered unnecessary, because they act as an additional means of linguistic expression. According to L.R. Zinder, "*for the correct perception of the information transmitted by the speaker, not only the quality of the transmission channel is needed, but also the factor of how much redundancy there is.*" (Zinder, 1979).

Among linguists, there are still those who believe that redundancy serves to reduce the loss of transmitted information, and this is due to the unique feature of each natural language (Susov, 2006). In some sources, the degree of clarity in the Russian language is about 80%, and in the English language this figure reaches 70-80%. In other languages, it is difficult to tell the excess, because such a result is possible only as a result of special studies. Research shows that redundancy is not repetition, nor it is necessarily related to repetition. American linguist G. Gleason gives the following definition of redundancy: "*Redundancy is a special term in information*

theory and presents it as the difference between the theoretical possible transmission capacity of the code that can match the information term and the average amount transmitted” (Gleason, 2008).

In English words "then", "there", "the", etc. the first "t" is followed by an "h". Here the freedom to choose the second letter is very limited. So, for example, "x" and "l" are not observed here, or they are rarely observed, and they are very rare in foreign words. What has been said so far is about written English. Redundancy also occurs in spoken English. The concept of "language economy" has been around for a long time, but its widespread use is observed in the last twenty-five years, especially among developing researchers. The expression "economy in language" is not less used by scientists who are engaged in the creation of all kinds of artificial languages for one purpose or another. Linguists who study the natural languages of the peoples of the world also began to write about "language economy". All this suggests that the concept of "economy" needs linguistic analysis. It is not uncommon to hear that the spoken style of language is "more economical" than the written style. The language of the newspaper is "more economical" than the language of the magazine. A telegraphic message is "more economical" than a message sent by regular or registered mail. Dialogue is "more economical" than monologue, the language of a good stylist is "more economical" than the language of a bad stylist, etc. All these judgements, which are often correct in themselves, have nothing to do with the general problem presented here, which is the beginning of this presentation. In these listed differences, we are talking about different genres and styles, different conditions in which communication takes place, and finally, different abilities and professional "skills" of people who resort to this or that type of communication. Speaking about the reasons for the elimination of linguistic redundancies, G. Paul notes: *"The useless loading of the memory plays a sufficient basis for the elimination of these redundancies"* (Paul, 1960). G. Paul in the chapter "Economy of language means" holds the opinion that *"language activity is characterized by a certain tendency to economy" according to which "in all cases the language develops methods of expression, which contain as much as necessary for understanding"*. He talks about linguistic economy in his quantitative concept. All the examples he gives show a tendency towards nonsense along the length of the speech chain. G. Paul writes, *"The number of used means depends on the situation of the speech context or more or less similarities in the moral reserve of the speakers. Under certain conditions, with the help of one word, an idea that would require a long sentence under other conditions can be conveyed quite clearly"*. P. Passy, W. Whitney, G. Suit, O. Jespersen were systematic researchers of economy in language as the most important phenomenon of communication. Trying to scientifically explain some phonetic changes, P. Passy focuses not only on how these changes occur, but also why they occur. As a result of his research, he found that language has a *"least-effort search"*, so that in some cases phonetic changes can be accurately explained by saving pronunciation effort. It uses other language phenomena, such as tone, stress, etc. emphasizes that changes in the phonological system of the French language occur not only in vowels, but also in consonants (Passy, 1906).

P. Passy reveals the following facts:

- 1) the language constantly tries to get rid of excess;
- 2) language always tries to emphasize what is necessary.

These two principles of P. Passy applied to linguistic diachrony can be equally distinguished when analyzing the synchronic state of language and speech. P. Passy calls the first trend "principle of economy", and the second "principle of emphasis"(Passy, 1906). These two principles are consistently contradictory. According to P. Passy, the saving principle is not the main driving force in language development, but it is very active. He writes: *"Weak accentuation of a less important syllable, blending of sounds, loss of redundant or weak distinguishing elements, adoption of two consecutive sounds, shortening of long words- all these changes are the result of economy"* (Passy,1906). Linguistic redundancy, which is a specific feature of dialogic speech, is usually related to extralinguistic factors (often psychological, conveying the emotional state of dialogue participants). It always manifests itself on two levels: syntactic and semantic. Semantic redundancy requires special signs, which finds its expression in syntactic redundancy. In general, redundancy implies the presence of certain repetitions or additional characters. It becomes clear that redundancy in language is created by us not only objectively, but also when necessary, especially when we want to make the message more convincing. When talking about the need to interrupt information, one important condition must be observed in each specific case, which can be done up to a certain limit, after which it becomes impossible to restore the message. J. Pierce notes in this regard: *"Until now, we have tried to completely eliminate redundancy in order to transmit only the absolute minimum information that*

allows us to recover the original message. But if such an elimination is carried out successfully enough, any error in the transmission of the message, will distort or change its meaning” (Pierce, 1967).

In our opinion, the most adequate assessment of the reasons underlying the tendency to economize in language is given by B.A. Serebrennikov. He believes that *"the source of the economy tendency is the human body. The principle of economy in language is one of the special manifestations of the instinct of self-preservation. This is a kind of reaction against excessive spending of physiological efforts, all kinds of disturbances that make it difficult to perform certain brain functions related to memory, production and perception of speech. Denying the role of economy in language is equivalent to denying all the protective functions of the human body"* (Serebrennikov, 1974). Indeed, many things in language depend on the characteristics of a person's purely biological organization. The human body is by no means indifferent to how the language mechanism works. It tries to respond in a certain way to all phenomena arising in the language mechanism that do not adequately correspond to certain physiological characteristics of the organism. Thus, *"there is a constant tendency of the language mechanism to adapt to the characteristics of the human body, which is practically expressed in tendencies of a more concrete nature"* (Serebrennikov, 1974). One of these trends is the tendency to save language resources, which is explained by the biological characteristics of the human body and is manifested in the most diverse languages of the world. Moreover, the biological characteristics, which are similar in all races and peoples, allow us to speak of the tendency to thrift as a universal law. The physiological commonality of the structure of the brain and the organs of perception is a condition for the same reflection of the surrounding world and, as a result, the commonality of logical thinking. It makes it possible to choose the same or at least similar means to express these ideas. In the process of development, according to the 'natural laws of evolution', language goes from complex to simple. "Long words become short, "one-word sentences become one-word sentences." The English used to use constructions like *we tellen*, but now they use *we tell* (the ending is lost). If language itself tends to simplify, as Spencer suggests, people can speed up this process by actively influencing language. Therefore, a similar process in the field of stylistics makes itself felt especially insistently. Good style is the ability to present ideas in a way that can be understood with as little mental effort as possible. Here the most diverse concepts are amazingly mixed. The ability to express ideas in simple and clear language is in itself a proof of excellent skill of the speaker or writer. Moreover, such art reveals not only the high culture of man, but also the high level of development of the language used by the speakers. All this is undeniable. But it has nothing to do with the process of turning long words and sentences into short words and sentences, this process is observed in the history of world languages. P. Passy well understood the constant conflict between the tendency of the neighboring phonemes of the speech stream to assimilate and the conservative effect of the system, and expressed it as follows: *"Two consecutive sounds always strive for assimilation. This tendency is opposed by the need to maintain meaningful differences.* (Passy,1906). He believes that the changes in the speaker's speech are unconscious. He says, "it's not about consciously keeping essentials and consciously letting go of excess. If I neglect an important element, I am misunderstood, trying to improve and perhaps exaggerate; if I neglect the element, they understand me well and I do it again. " (Passy,1906). We think that P. Passy contradicts himself with his opinion. This raises several questions. First, what kind of unconsciousness can we talk about when a person understands, and secondly, how does a person determine what is important or redundant in his expression and how does he make a choice in favor of eliminating redundant elements? Thirdly, why does a person, seeing that it is well understood, begin to use such constructions again and again in the future? It seems to us that the answer to these questions lies in the conscious nature of speech activity. If it were not so, our language would be overloaded with excesses, which would hinder communication between interlocutors, such as action and mutual understanding, and would practically reduce them to nothing.

One of the most general principles for classifying the superlative is its relationship to the language system and norm, which allows distinguishing mandatory and additional forms. As for functional redundancy, it occurs only in speech when more than one means is used to express the appropriate meaning. For example:

- 1) I'll call him tomorrow.
- 2) I called him yesterday.

In these examples, the future (1) and past (2) tenses have a double meaning: the form of the verb and the adverb. An adverb of definite time indicates the time of an action and makes grammatical devices of future or past unnecessary. Such redundancy arises when word forms work in the relevant environment and can be called

functional or speech redundancy. Depending on the context (verbal, situational, "psychological", etc.), there are several types of redundancy: conditional and unconventional. Conditional redundancy is determined by the language norm in certain situations and verbal contexts: *beautiful miracle, a wondrous miracle* (Filippova, 2011). Unconventional redundancy, unlike convention, is not fixed in language norms and has a unique character, determined by the communication situation, the individual communicative competence of the speaker, or both factors: *"He began to rest. And immediately, you know, very extreme boredom was revealed* (Filippova, 2011).

According to N.S. Zhukov and S.A. Burlak, system redundancy is the result and precondition of language changes. On the one hand, it is related to the development of the language system and is explained by it, and on the other hand, such redundancy makes further transformations in the language system possible, as it ensures their painless flow for the communication process (Zhukov, 2006). Systemic redundancy is manifested in the contradiction of the norms, processing and possibilities of the language system. System redundancy is explained by the presence and determination of certain meanings in a specific language system and the forms that implement them. However, the occurrence of this excess cannot be explained only by the internal features of the language system. The communicative function of the language and the conditionality of the system redundancy ensure the implementation of this function accordingly. Due to communicative necessity, redundancy is divided into two parts, communicatively important and unimportant. Communicatively significant redundancy, in turn, has several forms that serve the implementation of various communicative tasks in situationally and significantly defined contexts. Such forms of excess depend on the functional styles of the text, genres and types, and other stylistic features of the text. (Filippova, 2011). In execution, two forms of the expression of redundancy are distinguished: active and passive. Active redundancy is unique in each act of verbal communication and is carried out in a certain situational and textual context. Passive redundancy is included in the language system at different levels of its hierarchy. I.N. Filippova writes that *"passive redundancy at the phonetic-phonological level is expressed by the maximum frequency of the main tone, the main stressed syllable, reducing the tempo and changing the tone"* (Filippova, 2011).

Research shows that the principle of economy is also reflected in elliptical sentences. In writing - text, e-mail or postcard - elliptical sentences save space, time, character count and most importantly, effort! In spoken speech, the same principle plays its role - saving time. After all, when everything is clear and without using additional words, a person expresses his opinion. Another very important reason for using elliptical sentences is to avoid unnecessary repetition. Consider such a sentence: *I know, you don't trust me, you don't trust your mother, you don't trust your sister, but who do you trust, what is your goal?* In this sentence, we observe the repetition of the word *"you don't trust"* several times. If we implement the principle of economy here, then the sentence - *You don't trust me, your mother, your sister* - will appear and we will avoid repetition without harming the meaning. The principle of economy manifests its universal role from another point of view, that is, it finds its expression at all levels of the language system. Of course, the means of implementing this principle at each level have their own characteristics and should be considered separately. The result of the manifestation of economy principle at different levels is always the same: it is both a reduction in the speech chain and a saving of effort and time. Because the language system is hierarchical, we believe that the multi-layered structure of language makes language a very economical and flexible means for satisfying human expressive needs. This multi-layered nature provides a significant economy of linguistic means in the expression of various mental contents.

Thus, economy in language manifests itself in two directions. The use of language as a means of communication, based on saving all kinds of efforts, stemming from the human body itself, its psychophysiological characteristics, predetermines the use of shorter, condensed forms at each level of the language system. When these forms are added to each other, in general, it allows us to talk about the influence of the principle of economy in the language, in general, economy in the language as a whole. The dialectical unity of the general and the particular is manifested here.

5. Conclusion

Summing up, it should be said that the means of creating redundancy are idioethnic in nature. First of all, this refers to the redundancy of the language as a code. So, among the specific means of creating redundancy of the

Russian language are developed inflectional morphology and morphonological alternations. At the same time, there are grounds to assert that the means of creating text redundancy are also not universal. Languages may vary from each other not only in that they omit more easily (the rules of the ellipsis), but also in that they repeat more easily (the rules of redundancy). Different types of texts have different degrees of redundancy. Depending on the type of text, its overall redundancy can be formed due to different components. Thus, any written text is opposed to a spoken one: in written texts, the means of creating redundancy are concentrated primarily in the texts themselves (and not in the characteristics of the context, including the non-verbal context). Grammatical redundancy is notoriously higher in written texts. At the same time the level lexical redundancy in colloquial texts can be higher than in more standard (e.g. newspaper) texts. We came to the conclusion that the principle of economy in language and speech is universal, due to its penetration into all levels of the language system. The reason for this is the hierarchical distribution of the tiers of the language system: phonetic, morphological, lexical, syntactic, as well as the text as a unit of the highest level. Another side of the universality of linguistic economy is that it operates in all languages, since, based on the concept of B.A. Serebrennikov, biological characteristics are almost identical in all races and peoples.

References

- Abdullayev, K.M. (1998). Theoretical problems of Azerbaijani language syntax / K.M.Abdullayev. - Baku: Maarif, 281 p.
- Baudouin de Courtenay, I.A. (1963). Selected works on general linguistics. M.,
- Davydov, V.A.2. Space and fundamental science: state and prospects [Electronic resource] / V.A. Davydov, Yu.N. Makarov // Earth and Universe. - 2010. - No. 2. - Access mode: <http://earth-and-universe.narod.ru>
- Filippova, I.N. (2011). Classification of verbal redundancy // Vestnik MGOU. Series "Linguistics". No. 1 - P. 150-156.
- Grudeva, E.V (2008). Text redundancy, reduction and ellipsis. Abstract diss. ... doc. philol. Sciences. SPb., 342 p.
- Gleason G. (2008). Introduction to descriptive linguistics. M,
- Hunnicut Sh. (2016). Intelligibility Versus Redundancy- Conditions of Dependency, Sage journals, Language and Speech, Vol.28, Issue 1.
- Hoffmann T. (2017). Construction Grammars. The Cambridge Handbook of Cognitive Linguistics. Cambridge: Cambridge University Press., 45 p.
- Hasanova, K.N. (2021). Manifestation of economy in prose texts at the phonomorphological level. // K.N. Hasanova. Linguistic problems. International scientific journal. - Baku, No. 2, - p. 138-144.
- Martinet A. (1987). Principles of economy in phonetic changes. / A. Martinet, - Moscow, 1960, -263 p.
- Maslov, Yu.S. (1987). Introduction to linguistics. M.,
- Mechkovskaya, N. B. (2003). Common linguistics: Structural and social typology.
- Paul G. (1960). Principles of language history. M.
- Passy, P.P. (1906). Petite Phonetique Comparee (Classic Reprint): Des Principales Langues Europeennes, Harvard University, 132 p.
- Pierce, Ch.S. (2001). Criticism and semiotics. Novosibirsk: Iteya, 110 p.
- Susov, I.P. (2001). Activity, consciousness, discourse and language system // -Kaliningrad: Language communication: processes and units. – 1988, – p. 7-13.
- Susov, I.P., (2006). Introduction to language knowledge. M.
- Serebrennikov, B.A. (1974). Probabilistic substantiations in comparative studies. / B.A. Serebrennikov, Moscow.
- Shannon K. (1963). Theory of communication in secret systems // Shannon K. Works on the theory of information and cybernetics. M.
- Shannon, C. E. (1951). Prediction and Entropy of Printed English // The Bell System Technical Journal Vol.30. №1.
- Trubetzkoy, N.S. (1969). Principles of Phonology. The Center for Research in Languages, 352 p.
- Uldall, X. И. (1960). Basics of glossematics // New in linguistics. M., Issue 1.
- Yusifov, M.I. (1976). Economy in language system (on Azerbaijani language materials) dissertation submitted for the degree of philologist.e.nam. / M.I. Yusifov, -Baku, 169p.
- Zinder, L.R. (1979). General phonetics. M.,
- Zipf, G. K. (1949). Human behavior and the principle of least effort. Cambridge,
- Zhukova, L.K., Kotov B.S. (2006). Some aspects of acronyms in computer terminology. In Culture of the peoples of the Black Sea region, 76, p. 42-46.



The Investigation of Turkish Teacher Candidates' Attitudes to Digital Reading and Time of Printed and Digital Reading

Selvi Demir¹

¹ Kilisli Muallim Rifat Faculty of Education, Kilis 7 Aralık Universtiy, Kilis, Turkey

Correspondence: Selvi Demir, Kilisli Muallim Rifat Faculty of Education, Kilis 7 Aralık Universtiy, Kilis, Turkey. Tel: +90348 8142662 Ext. 1797. E-mail: slv.demir@gmail.com

Abstract

In this study, the printed and digital reading times of Turkish teacher candidates, their digital reading characteristics, their digital reading preferences and their attitudes towards digital reading were revealed. In this study, print and digital reading times and attitudes towards digital reading were examined in terms of various variables (gender, grade level, reading preference, digital book reading status, digital text reading status without internet, digital library status, book reading habit and digital reading level). In the research, relational and single survey models, which are among the general survey models of quantitative research methods, were used together. The study group of the research consisted of 173 Turkish teacher candidates studying in the fall semester of the 2022-2023 academic year. As a result of the research, there is a positive difference between the daily printed resource reading time and the digital resource reading time of the Turkish teacher candidates; On the other hand, it was detected that there was a negative and low-level significant relationship between their attitudes towards digital reading. Besides, it was detected that there was a moderate positive relationship between the duration of digital resource reading and their attitudes towards digital reading and digital reading characteristics. In addition, it was detected that the daily printed resource reading time of Turkish teacher candidates differs according to their reading habits. However, it has been detected that daily digital resource reading time differs according to reading preferences, digital book reading, digital library status, reading habits and digital book reading levels. It was detected that the attitudes of teacher candidates towards digital reading differ according to their grade level, reading preference, digital book reading status, digital text reading status without internet, digital library status and digital reading levels.

Keywords: Printed Reading, Digital Reading, Attitude, Turkish Teacher Candidates

1. Introduction

1.1 Introduce the Problem

Reading, the most effective and oldest form of learning, which is an individual, mental and creative process, is an activity or state of interest for using free time, monitoring economic, cultural and technological developments, and learning new things (Aksaçoğlu, & Yılmaz, 2007). Reading is an action that provides new opportunities for an

individual to see and direct events and situations. This accumulation and productivity that an individual has achieved in his own life are revealed only as a result of sound reading (Şahenk Erkan, Balaban Dağal & Tezcan, 2015). It is very important for learning to be based on such solid foundations in terms of an individual's intellectual development (Gönen 2007). Reading, which is the most basic way to have knowledge of the past and to follow the world of the future, is evaluated as one of the four basic language skills (Arıcı, 2012). Bireyin bizatihi kendisini daha iyi ve doğru biçimde anlatmasına olanak tanıyan okuma, bireyde hayal gücünün, yeteneklerin, soyut düşüncelerin, yaratıcılığın, zihinsel ve psikomotor becerilerin gelişimine katkı sunmaktadır (Aksaçlıoğlu, & Yılmaz, 2007).

Reading has found an expansion area towards digital sources in addition to printed sources with the spread of technology in recent years. As a matter of fact, printed sources such as newspapers, magazines, books have also become readable in digital media as e-newspapers, e-magazines, e-books. Thanks to communication tools such as computer, tablet, mobile phone, electronic reading activity have taken its place in life quite widely. Devices such as computers, tablets, mobile phones lay out all the desired resources in front of individuals with great ease with a single button. Thus, newspapers, books, current publications, magazines, which are sometimes difficult to transport, are always ready to be read inside the digital device (Yurdakal & Susar Kırmızı, 2021). As a matter of fact, various digital tools surrounding the environment have changed the reading behavior of today's people; they have differentiated their reading habits and differentiated their reading needs (Odabaş, Odabaş & Binici, 2020). This differentiation has brought the concept of digital reading to the agenda. Concordantly, in a narrow sense, printed sources such as newspapers, magazines, books can be read digitally as e-newspapers, e-magazines, e-books; in a broad sense, any kind of reading done in a digital environment can be defined as digital reading. Since digital reading offers features such as moving images and sound, it affects more than one sense organ of individuals. From this point of view, it is very easy in the interpretation process. For this reason, digital reading is becoming more common day by day, especially among young people. Young people prefer to travel with a library in their pockets instead of getting lost among the printed books. While the books on the shelves are only accessible in the same environment, the pages in the digital environment are ready to be accessed at any time (Yurdakal & Susar Kırmızı, 2021). Lemken (1999) emphasizes that there are some differences between reading from digital tools and reading from printed materials in terms of technique, presentation and interaction. Başaran (2014) states that reading in digital environment increases the interaction of the reader with the text, makes it easier to read and understand what he is reading, and has some advantages such as intertextuality and affordability. In the study conducted by Dağtaş (2013), it is stated that there are many benefits such as getting rid of the responsibility of carrying books, avoiding paper waste, getting to a large number of sources quickly, arousing more curiosity about texts in digital media, and making these texts open to evaluation and interpretation. Güneş (2010) argues that digital reading has various benefits because it allows the reader in the digital environment to access information quickly, understand information, learn and transfer it quickly.

Digital reading has its advantages as well as disadvantages (Ceylan & Koç Çiçekli, 2020). One of the most well-known disadvantages is that the eyes get tired as a result of reading for a long time in a digital environment and related problems arise (Duran & Dolaylar Özkul, 2015). Again, in the reading process, the reading in the digital environment is interrupted due to various stimuli such as news, advertising, which are outside the content in the digital environment (Ercan & Ateş, 2015). Boz (2018) emphasizes that students do not want to read in a digital environment for various reasons, such as quick distraction on digital devices, harm to health by digital devices, it is quite difficult to mark certain places in a text, take notes, underline lines in a digital environment, they do not understand what they are reading from a digital device very well and they like to read from paper. Although there are some disadvantages of reading in a digital environment, it can be said that the popularity of reading in a digital environment in a broader sense will gradually increase as a requirement of our time.

1.2 Explore Importance of the Problem

As a requirement of our age, it can be said that the popularity of digital reading in a broader sense will increase gradually. As a matter of fact, in the study conducted by Akçaoğlu Saydim (2017), more than half of the teachers (58.5%) indicate that they prefer reading in a digital environment (Akt., Yurdakal & Susar Kırmızı, 2021). It has also been revealed in various studies that the attitudes of young people towards digital reading have increased

especially in recent years. For example, in the study conducted by Gençtürk (2022), although the reading rate of young people in the print media is higher than in the digital media, it is stated that especially men prefer digital reading; states that individuals' reading options include social media content, electronic communication tools, websites and blogs. Therefore, it can be said that digital reading has an important place in the lives of individuals. For this reason, it is thought that examining the digital reading levels and attitudes of Turkish teacher candidates (TTC) is very important for education.

1.3 Describe Relevant Scholarship

In the field of undergraduate (Akbaba, 2017; Arı & Demir, 2013; Arslan, Çelik & Çelik, 2009; Batur, Gülveren & Bek, 2010; Bozpolat, 2010; Demir, 2015; Elkatmış, 2015; Özbay, Bağcı & Uyar, 2008; Yılmaz, Köse & Korkut, 2009), secondary education (Akkaya & Özdemir, 2013; Çeçen & Deniz, 2015) and the habits or attitudes of secondary school students (Balcı, 2009; Can, Deniz & Çeçen, 2016; Demir, 2009; Gönen, Öncü & Işıtan, 2004; Mete, 2012); As it is found that the factors affecting the habit of reading (Aksaçlıoğlu & Yılmaz, 2007; Biçer & Ercan, 2017; Sağlam, Suna & Çengelci, 2008; Uslu Üstten, 2014) are examined, the opinions of teachers (Dağtaş, 2013), teacher candidates (Elkatmış, 2018; Gömleksiz, Kan & Fidan, 2013; Kuru, 2018; Maden, 2012; Odabaş, Odabaş & Binici, 2020; Odabaş, Odabaş & Sevmez, 2018; Ulu & Zelzele, 2018), high school (Çelik, 2015; Maden & Maden, 2016), secondary school (Boz, 2018; Soyuçok & Mazman Akar, 2018) and primary school students (Macit & Demir, 2016) to study digital reading has been found. Moreover, the relationship between the metaphoric perceptions of the teacher candidates for digital reading (Azizoğlu & Okur, 2018) and reading tendencies and reading interests (Bulut & Karasakaloğlu, 2019), the effect of digital reading on reading comprehension (Aydemir İleri, Öztürk & Horzum, 2013; 2014; Batluralkız, 2018; Duran & Alevli, 2014; Ercan & Ateş, 2015; Kuru, Kaşkaya & Calp, 2017; Özen & Ertem, 2014; Tiryaki, & Karakuş, 2019) Dağtaş, 2013a) and the attitude towards Turkish lesson (Yaman & Dağtaş, 2013b) have various studies in which the effect is investigated. However, the daily printed and digital reading times of the TTC, digital reading features, digital reading preferences and attitudes towards digital reading are examined in relation to various variables (gender, grade level, reading preference, digital book reading status, digital text reading status without internet, digital library status, book reading habit and digital reading level). In this respect, it is thought that the current study will contribute to the relevant literature.

1.4 The Purpose of The Research

The aim of the current research is to reveal the daily printed and digital reading time of TTC and digital reading characteristics, digital reading preferences and attitudes towards digital reading, and various variables (gender, grade level, reading preference, digital book reading status, digital text reading status without internet, digital library status, book reading habit and digital reading level) of daily printed and digital reading times and digital reading times. Concordantly, the problem sentence of the research was created as follows: "What is the level of relationship between the daily printed and digital reading time of TTC and the attitudes towards digital reading, digital reading preferences and digital reading and gender, grade level, reading preference, digital book reading status, digital text reading status, digital library status, book reading habits and digital reading level variables make a statistically significant difference in their attitudes towards digital reading?"

2. Method

The general survey model was used in this research. The general scanning pattern is "the scanning arrangements made on the entire universe or a group, sample or sample to be taken from it in order to make a general judgment about the universe in a universe consisting of a large number of elements. Single or relational scans can be performed with general survey models. In most studies, arrangements are made that will allow both single and relational scans" (Karasar, 2011, p. 79). The screening pattern, which is one of the quantitative research processes, is defined as "the opinions of participants about a topic or event, or their interests, skills, abilities, attitudes, etc. research conducted on relatively larger samples, whose characteristics are usually detected, compared to other research, is called survey research pattern" (Büyüköztürk et al., 2016, p. 177).

2.1 Participant Characteristics

The participants of the research are 173 teacher candidates studying at Kilis 7 Aralık University during the fall semester of the 2022-2023 academic year. 74.6% (n=129) of the teacher candidates between the ages of 18-35 are women and 25.4% (n=44) are men. Some introductory information about the participants with an average age of 22.1 is presented in Table 1.

Table 1: Features of the participants

Gender	n	%
Female	129	74.6
Male	44	25.4
Grade level	n	%
1. grade	49	28.3
2. grade	38	22
3. grade	42	24.3
4. grade	44	25.4
Age	n	%
18-20 age	76	43.9
21-22 age	60	34.7
23-24 age	18	10.4
25 age and over	19	11

2.2 Data Collection Tools

The data collection tools of the research consist of the “Personal Information Form” created by the researcher and the “Attitude Scale towards Digital Reading for Teacher Candidates”, which was added to the literature by Yurdakal and Susar Kırmızı (2021).

2.2.1 Personal Information Form

The research group’s “gender, grade level, reading preference, digital book reading status, digital text reading status without internet, digital library status, book reading habit and digital reading level” were collected through the “Personal Information Form” created by the researcher.

2.2.2 Attitude Scale Towards Digital Reading for Teacher Candidates

One of the data collection tools of the research, the “Attitude Scale Towards Digital Reading for Teacher Candidates” is a measurement tool developed by Yurdakal and Susar Kırmızı (2021) in the five-point likert type. The scale, which has a Cronbach’s Alpha value of 0.956 and consists of 31 items, consists of two subscales. The first subscale explains 33.22% of the total variance; the second subscale explains 21.08%. The factor item load values of the items included in the first subscale range from 0.81 to 1-0,535; and the factor load values of the items included in the second Decalogue range from 0.791 to -0.476. The factor load values of the items included in the Decalogue scale range from 0.81 to 1-0,535. The total explained variance value of the two factors is 54.30%. After confirmatory factor analysis, “IFI value is 0.92; NFI is 0.89; NNFI is 0.92; IFI is 0.92; CFI is 0.92; RMSEA is 0.12 and X^2/sd value is 2.75” were found (Yurdakal and Susar Kırmızı, 2021).

2.3 Analysis of Data

In the research, along with the “Personal Information Form”, the “Attitude Scale for Teacher Candidates Towards Digital Reading” was applied to teacher candidates. The data obtained from the scale forms completed in an average time of 15 minutes were entered into the SPSS 21.00 statistical package program and the data were analysed through this program. In the analyses, firstly, normality tests of the data and appropriate statistical analyses were performed by taking into account the homogeneity of the variances. In the normality test performed

on the obtained data, all of the data did not show a normal distribution (Kolmogorov-Smirnov and Shapiro-Wilk significance value= $p < .05$) has been identified. Therefore, non-parametric tests were used in statistical analyses. TTC' daily printed and digital reading times and attitudes towards digital reading were analysed Decently for this reason while "spearman rank differences correlation analysis" test was used from non-parametric tests. When interpreting the correlation, it was evaluated that "the correlation coefficient between 0.70-1.00 as an absolute value, a high level of correlation between 0.70-0.30, and a low level of correlation between 0.30-0.00" (Büyükoztürk, 2014, p. 32). In addition, the daily printed and digital reading times of the TTC and their attitudes towards digital reading according to various variables (gender, grade level, reading preference, digital book reading status, digital text reading status, digital library status, book reading habits and digital reading level) The "Mann Whitney U Test", which is known as the non-parametric equivalent of "independent samples for independent samples, and the "Kruskal Wallis H Test" which is equivalent of "one-way analysis of variance analysis (Anova)" were used. When determining the source of the differences, "Post Hoc Tamhane" was made. In addition, percentage, average, frequency and standard deviation values were calculated from basic statistics. $p < .05$ significance level was taken into consideration when evaluating the results obtained from the data.

3. Results

In the current research, first of all, the attitude levels of TTC towards digital reading were detected. Then, the daily printed and digital reading times of the TTC, digital reading characteristics, digital reading preferences and attitudes towards digital reading have been revealed in relation to and daily printed and digital reading times and digital reading attitudes towards various variables (gender, grade level, reading preference, digital book reading status, digital text reading status, digital library status, book reading habit and digital reading level). Firstly, some descriptive data related to daily printed and digital reading times of participants, digital reading characteristics, digital reading preferences and attitudes towards digital reading were analysed and the results obtained are in Table 2. Within the scope of the data in the Table 2, the average reading time of TTC in daily printed sources is 63.7 minutes, while the average reading time in daily digital sources is 103.1 minutes. Therefore, it can be said that prospective Turkish teachers devote more time to reading digital resources.

Table 2: Some descriptive data related to print and digital reading time and digital reading feature, digital reading preference and attitude towards digital reading

Daily Reading time and attitude	\bar{X}	Median	Mode	ss	Variance	Skewness	Kurtosis	Ranj
Printed source reading time (min)	63.7	60	60	49.8	2486.8	2.730	14.361	410
Digital source reading time (min)	103.1	75	120	87.4	7641.2	1.388	1.450	375
Digital reading feature	80.2	80	78	10.6	112.4	-1.751	7.383	71
Digital reading preference	29.3	29	27	5.1	25.1	.914	1.706	31
Attitude towards digital reading	109.5	109	108	11.8	140.5	-.481	2.193	80

3.1 Attitude Towards Digital Reading

The "Attitude Scale towards Digital Reading" developed for participants consists of 31 statements in five-point likert type. Therefore, the highest score from this scale is 155 and the lowest score is 31. Concordantly, participants' attitudes towards digital reading are low (31-72), middle (73-113) and high (114-155), and the analysis results are in Table 3. Within the scope of the data in the Table 3, 1.2% of the prospective teachers participating in the study have low, 65.3% middle and 33.5% have a positive attitude towards high digital reading. The average of participants' attitudes towards digital reading is =109.5. This finding shows that the attitudes of pre-service teachers towards digital reading are at an intermediate level.

Table 3: The level of attitude towards digital reading

Attitude Level	n	%
Low (31-72)	2	1.2
Middle (73-113)	113	65.3
High (114-155)	58	33.5
Total	173	100

In the current research, in addition to the attitudes of TTC towards digital reading, their attitudes were analysed according to “digital reading characteristics” and “digital reading preferences”, which are sub-dimensions of the “Attitude Scale towards Digital Reading”. Concordantly, the “digital reading characteristics” sub-dimension consists of 20 expressions. Therefore, the highest score from this scale is 100 and the lowest score is 20. Concordantly, participants’ attitudes towards digital reading are low (20-46), middle (47-73) and high (74-100), and the analysis results are in Table 4. Within the scope of the data in the Table 4, it is seen that none of the participants participating in the study had a low level of attitude towards digital reading, 16.2% of them had a positive attitude towards digital reading at an intermediate level and 83.8% at a high level. The average attitude of prospective teachers towards digital reading characteristics is =80.2. This finding shows that the attitudes of pre-service teachers towards digital reading features are positive at a high level.

Table 4: The level of attitude towards digital reading features

Level of Attitude	n	%
Low (20-46)	---	---
Middle (47-73)	28	16.2
High (74-100)	145	83.8
Total	173	100

The attitudes of TTC towards “digital reading preferences” were also examined. The “digital reading preferences” sub-dimension, which is one of the sub-dimensions of the “Attitude Scale towards Digital Reading”, consists of 11 expressions. Therefore, the highest score from this scale is 55 and the lowest score is 11. Concordantly, the attitude levels of participants towards speech were considered in three groups as low (11-25), medium (26-40) and high (41-55) and the analysis results are in Table 5. Within the scope of the data in the Table 5, it is seen that 23.7% of the prospective teachers participating in the study have low and 1.7% of 74.6% have a high level of digital reading preference. The average attitude of prospective teachers towards digital reading preference is =29.3. This finding shows that the attitudes of prospective teachers towards digital reading preferences are at an intermediate level.

Table 5: The level of attitude towards digital reading preference

Level of Attitude	n	%
Low (11-25)	41	23.7
Middle (26-40)	129	74.6
High (41-55)	3	1.7
Total	173	100

3.2 The Relationship Between Printed and Digital Reading Time and Digital Reading Ability, Digital Reading Preference and Attitude Towards Digital Reading

In the current study, the relationship between TTC’ daily printed and digital reading time and digital reading feature, digital reading preference and attitudes towards digital reading was examined. The findings obtained are presented in Table 6.

Table 6: Correlation analysis results of sperman sequence differences related to printed and digital reading time and digital reading ability, digital reading preference and attitudes towards digital reading

Daily reading time and attitude		1	2	3	4	5
1- Printed source reading time (min)	Correlation coefficient	1				
	p	---				
2- Digital source reading time (min)	Correlation coefficient	.246	1			
	p	.001	---			
3- Digital reading feature	Correlation coefficient	-.135	.333	1		
	p	.076	.000	---		
4- Digital reading preference	Correlation coefficient	-.144	.111	.136	1	
	p	.059	.145	.075	---	
5- Attitude towards digital reading	Correlation coefficient	-.188	.324	.886	.531	1
	p	.013	.000	.000	.000	---

n=173, p<.05

In the analyses, a negatively low level of significant relationship was found between the daily printed source reading time and the attitude towards digital reading between the digital source reading time. There was no significant relationship between printed resource reading time and digital reading feature and digital reading preference, which is one of the sub-dimensions of the digital reading. It was found that there was a statistically significant relationship between the digital resource reading time and the attitude towards digital reading, and this relationship was positively moderate. However, there was no significant relationship between digital reading time and digital reading preference. A significant relationship was detected between the attitudes of TTC towards digital reading and digital reading feature between the high level and digital reading preference, while a significant relationship was not detected between digital reading feature and digital reading preference (Table 6).

3.3 Difference of Printed and Digital Reading Time and Attitude Towards Digital Reading According to Gender

In the research, “Mann Whitney U Test” was applied to detect whether there is a significant difference between daily printed and digital reading time and attitude towards digital reading by gender and the analysis results are in Table 7.

Table 7: Attitudes towards digital reading with daily printed and digital reading time according to gender

Daily reading time and attitude	Gender	n	Row avr.	Sequence	z	p
Printed source reading time (min)	Female	129	85.56	11037	-1.474	.140
	Male	44	91.23	4014		
Digital source reading time (min)	Female	129	83.74	10802.5	-1.217	.223
	Male	44	96.56	4248.5		
Attitude towards digital reading	Female	129	84.29	10874	-	-
	Male	44	94.93	4177		

n=173, p<.05

Table 7 shows that the TTC had daily printed (U=2652.0, p<.05) and digital (U=2417.5, p<.05) resource reading time and attitudes towards digital reading (U=2489.0, p<.05) it was detected that it did not show a statistically significant difference by gender.

3.4 The Difference Between the Printed and Digital Reading Time and the Attitude Towards Digital Reading by the Grade Level

In the research, “Kruskal Wallis H” was applied to detect whether there is a significant difference between daily printed and digital reading time and attitude towards digital reading by grade level and the analysis results are in Table 8.

Table 8: Attitudes towards digital reading with daily printed and digital reading time by grade level

Daily reading time and attitude	Grade level	n	Row avr.	sd	X^2	p	Significant difference
Printed source reading time (min)	1. (A)	49	94.37				
	2. (B)	38	95.5	3	4.450	.217	---
	3. (C)	42	79.15				
	4. (D)	44	78.94				
Digital source reading time (min)	1. (A)	49	72.64				
	2. (B)	38	90.51	3	5.795	.122	---
	3. (C)	42	93.05				
	4. (D)	44	94.18				
Attitude towards digital reading	1. (A)	49	65.34				
	2. (B)	38	95.88	3	13.574	.004	A-D
	3. (C)	42	90.6				
	4. (D)	44	100.02				

n=173; p<.05

As indicated in Table 8, the TTC' printed ($X^2 = 4.450$; $p > .05$) and digital ($X^2 = 5.795$; $p > .05$) the reading time of the source did not show a significant difference by the grade level, but their attitudes towards digital reading ($X^2 = 13.574$; $p < .05$) it has been detected that it shows a difference according to. The “Post Hoc Tamhane” test was applied to detect which groups the difference was between. According to the attitude towards digital reading, a significant difference was found in favor of fourth grades only between first grades and fourth grades.

3.5 The Difference between Printed and Digital Reading Time and Attitude towards Digital Reading By Reading Preferences

TTC were asked a question about “which of the printed and digital sources they prefer to read more” in the research, and the “Mann Whitney U Test” was applied to detect whether there is a significant difference between the daily printed and digital reading time and attitude towards digital reading by reading preference, and the analysis results are in Table 9. The “Mann Whitney U Test” was applied to detect whether there is a significant difference between the daily printed and digital reading time and the attitude towards digital reading.

Table 9: Attitudes towards digital reading with daily printed and digital reading time by reading preferences

Daily reading time and attitude	Reading preferences	n	Row avr.	Sequence	z	p
Printed source reading time (min)	Printed source	132	84.17	11110.5	-1.353	.176
	Digital source	41	96.11	3940.5		
Digital source reading time (min)	Printed source	132	71.31	9413.5	-7.433	.000
	Digital source	41	137.5	5637.5		
Attitude towards digital reading	Printed source	132	75.35	9946	-5.495	.000
	Digital source	41	124.51	5105		

n=173, p<.05

When Table 9 was examined, it was detected that the daily printed source reading times of TTC did not show a statistically significant difference according to their source reading preferences ($U = 2332.5$, $p > .05$). However, the

daily digital resource reading time of TTC ($U=635.5$, $p<.05$) and their attitudes towards digital reading ($U=1168.0$, $p<.05$) shows a statistically significant difference by the source reading preferences. When the rank averages are taken into account, it has been detected that this difference is in favor of those who read digital sources.

3.6 The Difference Between the Printed and Digital Reading Time and the Attitude Towards Digital Reading By the Digital Book Reading Situation

TTC was asked a question about “whether they read books decently in digital environment” and the “Mann Whitney U Test” was applied to detect whether there is a significant difference between the daily printed and digital reading time and attitude towards digital reading by the digital book reading situation and the analysis results are in Table 10.

Table 10: For digital reading with daily printed and digital reading time by the digital book reading situation

Daily reading time and attitude	Reading digital books	n	Row avr.	Sequence	z	p
Printed source reading time (min)	Yes.	67	87.87	5887.5	-1.185	.853
	No.	106	86.45	9163.5		
Digital source reading time (min)	Yes.	67	105.13	7043.5	-3.806	.000
	No.	106	75.54	8007.5		
Attitude towards digital reading	Yes.	67	110.01	7370.5	-4.807	.000
	No.	106	72.46	7680.5		

$n=173$, $p<.05$

TTC' daily reading time of printed sources, as given in Table 10, did not show a statistically significant difference compared to the digital book reading status ($U=9163.5$, $p>.05$). However, the daily digital reading time of the participants ($U=8007.5$, $p<.05$) and their attitudes towards digital reading ($U=7680.5$, $p<.05$) it was detected that it showed a statistically significant difference by the digital book reading situation. When the rank averages are taken into consideration, it has been detected that this difference is in favor of those who read digital books.

3.7 The Difference between the Printed and Digital Reading Time and the Attitude towards Digital Reading By the Digital Text Reading Situation Without Internet

TTC were asked “whether there are electronic texts they can read in the digital environment even if there is no internet” in the research, and the “Mann Whitney U Test” was applied to detect whether there is a significant difference between the daily printed and digital reading time and attitude towards digital reading by the digital text reading situation without internet, and the analysis results are in Table 11.

Table 11: Attitudes towards digital reading with daily print and digital reading time by the digital reading situation without Internet

Daily reading time and attitude	Digital text reading without internet	n	Row avr.	Sequence	z	p
Printed source reading time (min)	Yes.	72	87.08	6269.5	-.017	.986
	No.	101	86.95	8781.5		
Digital source reading time (min)	Yes.	72	93.74	6749.5	-1.504	.133
	No.	101	82.19	8301.5		
Attitude towards digital reading	Yes.	72	108.15	7787	-4.694	.000
	No.	101	71.92	7264		

$n=173$, $p<.05$

As given in Table 11, TTC did not make a statistically significant difference by the digital text reading status without internet reading time ($U = 3630.5$, $p>.05$) and digital ($U = 3150.5$, $p>.05$). However, it has been detected that the attitudes of the participants towards digital reading ($U = 2113.0$, $p<.05$) showed a statistically significant difference by the reading status of digital text without internet. Considering the average sequence, it was detected that this difference is in favor of those with digital text without internet in digital environment.

3.8 The Difference Between Printed and Digital Reading Time and Attitude Towards Digital Reading By The Digital Library Situation

TTC were asked “Do they have a library in digital environment” in the research and the “Mann Whitney U Test” was applied to detect whether there is a significant difference between daily print and digital reading time and attitude towards digital reading by the digital library status and the analysis results are in Table 12.

Table 12: Attitudes towards digital reading with daily print and digital reading time by the digital library status

Daily reading time and attitude	Digital library status	n	Row avr.	Sequence	z	p
Printed source reading time (min)	Yes.	41	88.72	3637.5	-.255	.798
	No.	132	86.47	11413.5		
Digital source reading time (min)	Yes.	41	100.66	4127	-2.01	.044
	No.	132	82.76	10924		
Attitude towards digital reading	Yes.	41	112.57	4615.5	-3.746	.000
	No.	132	79.06	10435.5		

n=173, p<.05

As given in Table 12, it was detected that the daily printed resource reading times of participants did not show a statistically significant difference compared to the digital library status ($U=2635.5$, $p>.05$). However, the daily digital reading time of participants ($U=2146.0$, $p<.05$) and their attitudes towards digital reading ($U=1657.5$, $p<.05$) it was detected that it showed a statistically significant difference by the digital library status. According to the rank averages, it has been detected that this difference is in favor of those with a digital library.

3.9 The Difference between Printed and Digital Reading Time and Attitude towards Digital Reading By Reading Habit

TTC were asked about their “reading habits in general” in the study and “Kruskal Wallis H” was applied to detect whether there is a significant difference between daily printed and digital reading time and attitude towards digital reading by book reading habit and the analysis results are in Table 13.

Table 13: Attitudes towards digital reading with daily printed and digital reading time by reading habit

Daily reading time and attitude	Book reading habit	n	Row avr.	sd	X^2	p	Significant difference
Printed source reading time (min)	Low level (A)	23	68.96				A-C
	Middle level (B)	125	83.86	2	14.263	.001	B-C
	High level (C)	25	119.28				
Digital source reading time (min)	Low level (A)	23	67.98				A-C
	Middle level (B)	125	84.83	2	11.686	.003	B-C
	High level (C)	25	115.34				
Attitude towards digital reading	Low level (A)	23	83.89				
	Middle level (B)	125	86.63	2	.318	.853	---
	High level (C)	25	91.72				

n=173; p<.05

As it is reached in Table 13, the attitudes of the TTC for digital reading ($X^2 = .318$; $p>.05$) did not show a statistically significant difference according to the reading habit but printed ($X^2 = 14.263$; $p<.05$) and digital ($X^2 = 11.686$; $p<.05$) It has been detected that it shows a significant difference by the source reading time. The “Post Hoc Tamhane” test was applied to detect which groups the difference was between. Concordantly, it has been detected that the difference by the reading time of both printed and digital resources is between those with high-

level reading habits and those with intermediate and decile reading habits and is in favor of prospective teachers with high-level reading habits.

3.10 The Difference between the Printed and Digital Reading Time and the Attitude towards Digital Reading By the Digital Reading Level

In the research, the TTC were asked about their “proficiency in reading in digital environments”. “Kruskal Wallis H” was applied to detect whether there is a significant difference between daily printed and digital reading time and attitude towards digital reading by digital reading level and the analysis results are in Table 14.

Table 14: Attitudes towards digital reading with daily printed and digital reading time by digital reading level

Daily reading time and attitude	Digital reading level	n	Row avr.	sd	X^2	p	Significant difference
Printed source reading time (min)	Very low level (A)	24	97.1				
	Low level (B)	45	79.3	3	2.312	.510	---
	Middle level (C)	79	86.88				
	High level (D)	25	91.54				
Digital source reading time (min)	Very low level (A)	24	67.27				
	Low level (B)	45	72.54	3	15.412	.001	A-D
	Middle level (C)	79	93.08				B-D
	High level (D)	25	112.74				
Attitude towards digital reading	Very low level (A)	24	40.08				A-C
	Low level (B)	45	69	3	47.156	.000	A-D
	Middle level (C)	79	98.94				B-C
	High level (D)	25	126.72				B-D; C-D

n=173; p<.05

As given in Table 14, it was detected that the daily printed source reading times of participants did not show a statistically significant difference compared to the digital reading level ($X^2 = 2.312$; $p > .05$). However, the daily digital resource reading time of participants ($X^2 = 15.412$; $p < .05$) and their attitudes towards digital reading ($X^2 = 47.156$; $p < .05$) it was found that it showed a statistically significant difference by the digital reading level. The “Post Hoc Tamhane” test was applied to detect which groups the difference was between. According to the analyses conducted, it was found that the difference in the context of digital resource reading time was only between very weak and weak and pre-service teachers with high-level digital reading, and in favor of those with high-level digital reading. In addition, in the context of attitudes towards digital reading, it has been found that the difference between those who are very weak and weak and those who have an intermediate and high level of digital reading is in favor of those who have an upper and intermediate level of digital reading. At the same time, a significant difference was found between the attitudes of the TTC with medium and high -level digital readings towards digital reading, and this difference was found to be in favor of those who have senior digital readings.

4. Discussion

In the current research, the daily print and digital reading times and digital reading characteristics, digital reading preferences and attitudes of TTC towards digital reading have been revealed relativistically; daily print and digital reading times and attitudes towards digital reading have been examined in terms of various variables such as “gender, grade level, reading preference, digital book reading status, digital text reading status without internet, digital library status, book reading habit and digital reading level”.

It has been detected that the attitudes of TTC towards digital reading are at an intermediate level, their attitudes towards digital reading features, which are one of the lower dimensions of the attitude towards digital reading

scale, are high and their attitudes towards digital reading preferences are at an intermediate level. Although the attitudes of prospective Turkish teachers towards reading are at an intermediate level, they are based on printed sources (63.7 min.) of the reading time allocated to digital resources (103.1 min.) it was found to be less than the reading time they allocated. Gençtürk (2022), on the other hand, emphasizes in his study that the reading rates of young people in printed media are higher than in digital media. When the literature was examined, it was found that the digital reading self-efficacy perceptions of teacher candidates were at a high level (Gömleksiz, Kan & Fidan, 2013; Sarıkaya, 2019; Ulu & Zelzele, 2018) or sufficient (Elkatmış, 2018), as well as moderate level (Bulut & Karasakaloğlu, 2019; Ceylan & Koç Çiçekli, 2020) or insufficient (Esmer, 2013). In the Maden and Maden (2016) study, it is emphasized that the digital reading self-efficacy perceptions of secondary school students are moderate; in the Boz (2018) study, a significant majority of secondary school students do not prefer to read in a digital environment, and Macit and Demir (2016) study shows that about half of primary school students' digital reading skills are partially adequate.

There is a positive relationship between the daily printed and digital resource reading times of TTC; On the other hand, a negative and low-level significant relationship was found between attitudes towards digital reading. In other words, it can be said that as the daily printed resource reading time of teacher candidates increases, there is an increase in digital resource reading time, but it causes a decrease by creating a negative effect on their attitudes towards digital reading. TTC' digital resource reading time and attitudes towards digital reading and digital reading characteristics were found to have a decently positive relationship between the positive and moderate level. Concordantly, it can be said that as the amount of time teacher candidates devote to digital reading increases, their attitudes towards digital reading also increase; again, there has been an increase in their attitudes towards digital reading features, which are one of the sub-dimensions of the attitude scale towards digital reading. However, no significant relationship was found between the digital reading time of TTC and their digital reading preferences, which is one of the sub-dimensions of the attitude scale towards digital reading.

It can be said that the attitudes of TTC towards digital reading with daily printed and digital resource reading times do not show a difference according to gender; the gender factor does not affect their attitudes towards digital reading with daily printed and digital resource reading time. As a matter of fact, a study conducted by Ceylan and Koç Çiçekli (2020) shows that the digital reading self-efficacy perceptions of TTC are not affected by the gender factor; similarly, Başaran's (2014) study emphasizes that gender does not have a significant effect on the speed of reading text in a digital environment, understanding the text and attitude towards the text. However, in the study conducted by Sarıkaya (2019), it was concluded that the digital literacy levels of female students are better than the digital literacy levels of male students. Again, there are various studies in the literature in which the self-efficacy perceptions of digital reading of female teacher candidates (Tiryaki & Karakuş, 2019; Ulu & Zelzele, 2018) and their interests are better (Bulut & Karasakaloğlu, 2019). Moreover, similar results can be said for students studying at different levels of education. For example, it is one of the results obtained in the literature that women students are more successful in digital reading compared to male students at the elementary school (Macit & Demir, 2016) and middle school (Ercan & Ateş, 2015; Duran & Alevli, 2014) level. In contrast to these studies, there are also various studies in the literature in which male students are more successful in digital reading or have a higher self-efficacy perception (Esmer, 2013; Maden & Maden, 2016; Soyuçok & Mazman Akar, 2018).

It can be said that the daily printed and digital resource reading times of TTC do not show a difference according to the classroom level; the classroom level is not a factor affecting the daily printed and digital resource reading time. However, it has been detected that the attitudes of TTC towards digital reading show a difference according to the class level and this difference is in favor of the upper classes. Therefore, in this research, it can be said that the grade level is not effective on the reading time of TTC in print and digital sources; but it is effective on their attitudes towards digital reading. There are also studies in the literature that show that individuals' digital literacy levels are affected by the classroom variable, such as studies that are not affected by the classroom variable (Özbaş & Kuralbayeva, 2018; Sarıkaya, 2019) (Göldağ & Kanat (2018). In the study conducted by Ceylan and Koç Çiçekli (2020), it was detected that the digital reading self-efficacy perceptions of prospective Turkish teachers were affected by the classroom variable.

It has been detected that the daily printed resource reading times of TTC do not show any difference according to their resource reading preferences; however, their digital resource reading times differ according to their attitudes towards digital reading source reading preferences. In other words, it can be said that the reading preferences of prospective Turkish teachers make a decisive difference on digital resource reading times, attitudes towards digital reading, and this difference is in favor of digital resource readers compared to those who read printed resources.

It was found that a significant majority of TTC (76.3%) prefer to read printed sources. Considering the reasons why printed sources are preferred more than digital sources in general, various reasons such as rapid distraction on digital devices; harm to health of digital devices; difficulty marking certain places of a text, taking notes, underlining lines in a digital environment; not understanding the text read from a digital device very well and liking to read printed sources more (Boz, 2018) constitute the limiting aspects of reading in a digital environment. However, although for these reasons, teacher candidates prefer to read printed sources, in the current research it has been detected that the time TTC devote to reading digital sources is more than to reading printed sources. As a matter of fact, the average daily printed resource reading time of TTC is 63.7 minutes, while the time they devote to daily digital resource reading time is 103.1 minutes. Concordantly, the digital resource reading time of TTC who prefer to read digital books rather than printed sources and devote more time can be evaluated as a result of which their attitudes towards digital reading are expected to be more positive. As a matter of fact, findings supporting this conclusion have been reached in the current study.

It was detected that the daily printed resource reading times of TTC did not show any difference compared to their digital book reading situations; however, their digital resource reading times and their attitudes towards digital reading differed according to their digital book reading situations. In other words, it can be said that the digital book reading status of TTC makes a decisive difference on digital resource reading time, attitudes towards digital reading, and this difference is in favor of those who read digital books compared to those who do not read digital books. In the research, it was found that a significant majority of TTC (61.3%) do not prefer to read books in a digital environment; very few prefer (38.7%). However, as stated earlier, it was stated that the time TTC devote to daily digital resource reading time is more than the time they devote to reading printed resources. Concordantly, the digital resource reading time of TTC who read digital books can be evaluated as a result of which it is expected that their attitudes towards digital reading will also be more positive. The findings obtained in the current study also support this situation.

It has been detected that the daily printed and digital resource reading times of TTC do not differ according to the digital text reading situation without the Internet; however, the attitudes of teacher candidates towards digital reading differ according to the digital text reading situation without the Internet, and this difference is in favor of those who read text without the Internet. In this research, 41.6% of TTC read any text in a digital environment without the Internet, while 58.4% do not read any text in a digital environment. When the literature was examined, there were no studies in which teacher candidates' daily print and digital resource reading times and attitudes towards digital reading were examined according to the digital text reading situation without internet. However, a study conducted by Sarıkaya (2019) found a significant difference in the total score and technical sub-dimension score according to the daily internet usage time variable in the digital literacy status of prospective Turkish teachers. TTC with a daily internet usage time of less than 1 hour had a digital literacy level of 63.58, those between 1-2 hours had a digital literacy level of 61.50 and those with more than 2 hours had a digital literacy difference of 65.88. Concordantly, it can be said that the duration of Internet use and the non-Internet text reading situations of TTC both have a positive impact on their digital literacy levels and attitudes towards digital reading.

It has been detected that the daily printed resource reading times of TTC do not show a difference according to the digital library status; however, the digital resource reading times differ according to the digital reading attitudes and the digital library status, and this difference is in favor of those who have a digital library. When the literature was examined, there were no studies in which the daily printed and digital resource reading times and attitudes towards digital reading of teacher candidates were examined according to the digital library status. Although the results of the literature studies could not be compared with the findings of the current research in this respect, it has been found that the number of books students have in the literature has a significant effect on their oral self-efficacy perceptions (Demir & Börekcü, 2021). It can be predicted that digital libraries, which contain many books,

can have an impact on individuals' daily reading time of printed and digital resources and their attitudes towards digital reading. As a matter of fact, it can be said that the digital libraries owned by prospective Turkish teachers create a significant difference on their reading time of digital resources and their attitudes towards digital reading.

TTC' attitudes towards digital reading did not show any difference according to reading habits; however, it was detected that they showed a difference according to the daily reading time of printed and digital sources, and the difference in question was between those with high-level reading habits and those with moderate and decile reading habits. When the literature is examined, the reading habit in general is divided into three categories: high-level reader (reader who reads 2 books or more books per month), medium-level reader (reader who reads 1 book per month) and low-level reader (reader who reads 1 book or fewer books in 2 months) (Akt., Aksaçoğlu, & Yılmaz, 2007). In this research, it was detected that 13.3% of TTC are in the category of poor level reader, 72.3% are intermediate level reader and 14.4% are in the category of high-level reader. When the literature is examined, it is known that the habit of reading books has many important contributions for individuals. For example, the habit of reading books directly contributes to mental development; allows him to use his native language correctly and adequately; directly helps to enrich his vocabulary; contributes to the development of a healthy and strong personality; helps strengthen communication skills; increases educational and educational success (Aksaçoğlu, & Yılmaz, 2007). However, in this research, it has been detected that the attitudes of TTC towards digital reading do not show any difference according to the habit of reading books. Despite this, in this research, it can be said that the daily printed and digital resource reading time differs according to book reading habits, and the daily printed and digital resource reading time of high-level readers is more positive compared to low-level readers.

It has been found that the daily printed resource reading times of prospective Turkish teachers do not show a statistically significant difference compared to the digital reading level; however, the attitudes of prospective teachers towards digital reading with daily digital resource reading times show a difference according to the digital reading level. Concordantly, it can be said that as the digital reading levels of teacher candidates increase, their attitudes towards digital reading also increase with daily digital resource reading times in general. In this research, it was found that 13.9% of prospective Turkish teachers have very poor, 26% have poor, 45.7% have intermediate and 14.4% have high-level digital reading level. As it can be seen, almost half of the TTC consider themselves to be at an intermediate level in digital reading. Similar results have been found in studies in the literature (Bulut & Karasakaloğlu, 2019; Ceylan & Koç Çiçekli, 2020). However, when the literature was examined, there were no studies in which teacher candidates' daily reading time of printed and digital resources and their attitudes towards digital reading were examined according to the digital library status. In addition to the current study, it is proposed to conduct similar studies with different sample groups.

References

- Akbaba, R. S. (2017). Türkçe öğretmeni adaylarının okuma alışkanlıkları ve okumaya yönelik tutumları [Reading habits of the Turkish teacher candidates and eligibility for reading]. *Turkish Studies- International Periodical for the Languages, Literature and History of Turkish or Turkic*, 12(18), 35-52, doi: 10.7827/TurkishStudies.12215
- Akkaya, N., & Özdemir, S. (2013). Ortaöğretim öğrencilerinin okumaya yönelik tutumlarının incelenmesi (İzmir-Buca örneği) [An investigation of high school students' attitudes towards reading (İzmir-Buca sample)]. *Bartın Üniversitesi Eğitim Fakültesi Dergisi [Bartın University Journal of Faculty of Education]*, 2(1), 75-96.
- Aksaçoğlu, A. G., & Yılmaz, B. (2007). Öğrencilerin televizyon izlemeleri ve bilgisayar kullanmalarının okuma alışkanlıkları üzerine etkisi [Impactsof watching television and computer usingon students' reading habits]. *Türk Kütüphaneciliği [Turkish Librarianship]*, 21(1), 3-28.
- Arı, E., & Demir, M. K. (2013). İlköğretim bölümü öğretmen adaylarının kitap okuma alışkanlıklarının değerlendirilmesi [Assessing reading habits of student teachers' at department of elementary education]. *Ana Dili Eğitimi Dergisi [Journal of Mother Tongue Education ADED – JOMTE]*, 1(1), 116-128. doi: 10.16916/aded.16025
- Arıcı, A. F. (2012). *Okuma eğitimi [Reading education]*. Ankara: Pegem Akademi.

- Arslan, Y., Çelik, Z., & Çelik, E. (2009). Üniversite öğrencilerinin okuma alışkanlığına yönelik tutumlarının belirlenmesi [Determination of university students' attitudes toward reading habit]. *Pamukkale Üniversitesi Eğitim Fakültesi Dergisi [Pamukkale University Faculty of Education Journal]*, 26(26), 113-124.
- Aydemir İleri, Z., Öztürk, E., & Horzum, M. B. (2013). Ekrandan okumanın 5. sınıf öğrencilerinin bilgilendirici ve öyküleyici metin türünde okuduğunu anlama düzeylerine etkisi [The effect of screen reading on 5th grade students' reading comprehension levels in informative and narrative text type]. *Kuram ve Uygulamada Eğitim Bilimleri [Educational Sciences in Theory and Practice]*, (13), 2263-2276.
- Azizoğlu, İ. A., & Okur, A. (2018). Türkçe öğretmeni adaylarının ekrandan okumaya yönelik metaforik algıları [Metaforic perspectives from Turkish teacher candidates for reading from screen]. *Mehmet Akif Ersoy Üniversitesi Eğitim Fakültesi Dergisi [Journal of Mehmet Akif Ersoy University Faculty of Education]*, (46), 1-21. doi: 10.21764/mauefd.334140
- Balcı, A. (2009). *İlköğretim 8. sınıf öğrencilerinin okuma alışkanlık ve ilgileri üzerine bir araştırma [A research on elementary 8th grade students' reading habits and interests]*. (Doctoral Thesis). Retrieved from the National Thesis Center of the Council of Higher Education. (Thesis No. 228411)
- Başaran, M. (2014). 4. sınıf seviyesinde ekrandan ve kâğıttan okumanın okuduğunu anlama, okuma hızı ve metne karşı geliştirilen tutum üzerindeki etkisi [Effect of reading on screen and paper on elementary school 4th grade students' reading comprehension reading speed and their attitudes]. *Uşak Üniversitesi Sosyal Bilimler Dergisi [Uşak University Journal of Social Sciences]*, 7(2), 248-268.
- Batluralkız, Ç. (2018). *Basılı ve dijital ortamlarda ortaokul öğrencilerinin okuduğunu anlama becerilerinin karşılaştırılması [Comparing the reading comprehension skills of primary school students in print vs digital setting]*. (Master's thesis). Retrieved from the National Thesis Center of the Council of Higher Education. (Thesis No. 533987)
- Batur, Z., Gülveren, H., & Bek, H. (2010). Öğretmen adaylarının okuma alışkanlıkları üzerine bir araştırma: Uşak eğitim fakültesi örneği [A study about preservice teachers reading habits: Sampling of usak education faculty]. *Uşak Üniversitesi Sosyal Bilimler Dergisi [Uşak University Journal of Social Sciences]*, 3(1), 32-49.
- Biçer, A., & Ercan, Z. G. (2017). Okul öncesi öğretmen adaylarının okuma alışkanlığına etkileyen faktörlerin incelenmesi (Trakya Üniversitesi örneği) [Determining of factors affecting the reading habits of preschool teacher candidates (a trakya university sample)]. *Trakya Üniversitesi Eğitim Fakültesi Dergisi*, 7(1), 42-55.
- Boz, S. M. (2018). *Öğrencilerin dijital okuma kültürü [Students' digital reading culture]*. Ankara: Eğitim Teknolojileri Geliştirme ve Projeler Daire Başkanlığı. http://yegitek.meb.gov.tr/meb_iys_dosyalar/2018_11/06102914_serpil.pdf
- Bozpolat, E. (2010). Öğretmen adaylarının okuma alışkanlığına ilişkin tutumlarının değerlendirilmesi (Cumhuriyet Üniversitesi Eğitim Fakültesi Örneği) [Evaluation of teacher candidates' attitudes towards reading habits (Cumhuriyet University Faculty of Education Example)]. *Zeitschrift für die Welt der Türken-Journal of World of Turks*, 2(1), 411-428.
- Bulut, B., & Karasakaloğlu, N. (2019). Öğretmen adaylarının dijital okuma eğilimleri ile okuma ilgileri arasındaki ilişki [The relationship between pre-service teachers' digital reading tendencies and reading interests]. E., Babaoğlu Çelik, E., Kırıl and A., Çilek (Eds.), *Eğitim Araştırmaları-2019 [Educational Research-2019]* (pp. 136- 147). Ankara: Eyuder Yayınları.
- Büyüköztürk, Ş. (2014). *Sosyal bilimler için veri analizi el kitabı [Manual of data analysis for social sciences]*. Ankara: Pegem
- Büyüköztürk, Ş., Kılıç-Çakmak, E., Akgün, Ö. E., Karadeniz, Ş., & Demirel, F. (2016). *Bilimsel araştırma yöntemleri [Scientific research methods]*. Ankara: Pegem Akademi.
- Can, A., Deniz, E. & Çeçen, M. A. (2016). Ortaokul öğrencilerinin okuma tutumları [Reading attitudes of middle school students]. *Turkish Studies- International Periodical for the Languages, Literature and History of Turkish or Turkic*, 11(3), 645-660. doi: 10.7827/TurkishStudies.9311
- Çeçen, M. A., & Deniz, E. (2015). Lise öğrencilerinin okumaya yönelik tutumları: Diyarbakır ili örneği [high school students' attitudes towards reading: The case of Diyarbakır]. *Mustafa Kemal Üniversitesi Sosyal Bilimler Enstitüsü Dergisi [Mustafa Kemal University Journal of Social Sciences Institute]*, 12(30), 193-212.
- Çelik, T. (2015). Öğrencilerin e-kitap okuma tutumlarının incelenmesi [Investigation of student's e-book reading attitudes]. *Turkish Studies- International Periodical for the Languages, Literature and History of Turkish or Turkic*, 10(3), 271-284. doi: 10.7827/TurkishStudies.7803
- Ceylan, B., & Koç Çiçekli G. (2020). Türkçe öğretmeni adaylarının ekran okuma öz yeterlik algılarının incelenmesi [Investigating screen reading self-efficacy perceptions of Turkish teacher candidates]. *Eğitim Felsefesi ve Sosyolojisi Dergisi [Journal of Educational Philosophy and Sociology]*, 1(1), 1-18. doi: 10.29329/jeps.2020.284.1
- Dağtaş, A. (2013). Öğretmenlerin basılı sayfa ve ekrandan okuma tercihleri ile eğitimde elektronik metin kullanımına yönelik görüşleri [On-printed page and screen reading preferences of teachers' with their views on the use of electronic text in education]. *Turkish Studies- International Periodical for the Languages, Literature and History of Turkish or Turkic*, 8(3), 137-161. doi: 10.7827/TurkishStudies.4390

- Demir, S. & Börekçi, M. (2021). Ortaokul öğrencilerinin sözlü anlatım öz yeterlik algılarına çeşitli değişkenlerin etkisi [The effect of various variables on the perception of verbal lecture self-efficacy of secondary school students]. *Ana Dili Eğitimi Dergisi [Journal of Mother Tongue Education]*, 9(1), 94-110.
- Demir, S. (2015). Üniversite öğrencilerinin okuma tutum ve alışkanlıkları üzerine bir değerlendirme [An evaluation in reading skills and habitudes of undergraduate students]. *Uluslararası Türkçe Edebiyat Kültür Eğitim (TEKE) Dergisi [International Journal of Turkish Literature, Culture and Education (TEKE)]*, 4(4), 1657-1671. doi: 10.7884/teke.531
- Demir, T. (2009). İlköğretim II. kademe öğretmen adaylarının okuma alışkanlıkları üzerine bir araştırma (Gazi Üniversitesi örneği) [A survey on reading habits of prospective teachers for elementary school's second grade (case of Gazi University)]. *Turkish Studies- International Periodical for the Languages, Literature and History of Turkish or Turkic*, 4(3), 717-745. doi: 10.7827/TurkishStudies.703
- Duran, E., & Alevli, O. (2014). Ekrandan okumanın sekizinci sınıf öğrencilerinde anlamaya etkisi [The effect of reading on screen on comprehension of eight grade students]. *Okuma Yazma Eğitimi Araştırmaları [Research in Reading & Writing Instruction]*, 2(1), 1-11.
- Duran, E., & Dolaylar Özkul, İ. (2015). Ekran okuryazarlığının gelişimi ve geleceğine yönelik tahminler [The development of screen literacy and predictions for the future]. *Uşak Üniversitesi Sosyal Bilimler Dergisi [Uşak University Journal of Social Sciences]*, 8(4), 281-296.
- Elkatmış, M. (2015). Sınıf öğretmenleri adaylarının okuma ilgi ve alışkanlıkları [Pre-service classroom teachers' reading interests and habits]. *Kastamonu Eğitim Dergisi [Kastamonu Journal of Education]*, 23(3), 1223-1240.
- Elkatmış, M. (2018). Sınıf öğretmenlerinin ekran okumaya yönelik görüşleri [Classroom teacher's opinions for screen reading]. *Kırıkkale Üniversitesi Sosyal Bilimler Dergisi (KÜSBD) [Kırıkkale University Journal of Social Sciences (KÜSBD)]*, 8 (1), 203-222.
- Ercan, A. N., & Ateş, M. (2015). Ekrandan okuma ile kâğıttan okumanın anlama düzeyi açısından karşılaştırılması [The comparison of reading from paper and screen in terms of comprehension levels]. *Turkish Studies- International Periodical for the Languages, Literature and History of Turkish or Turkic*, 10(7), 395-406. doi: 10.7827/TurkishStudies.8032
- Esmer, B. (2013). *Sınıf öğretmeni adaylarının elektronik ortamlarda okuma becerilerinin değerlendirilmesi [Evaluation online reading comprehension skills of elementary preservice teachers]*. (Master's thesis). Retrieved from the National Thesis Center of the Council of Higher Education. (Thesis No. 333523)
- Gençtürk, G. (2022). *Dijital ortamın gençlerin okuma alışkanlıklarına etkisi: İstanbul'da durum [The effect of digital environment on reading habits of young people: A sample of Istanbul]*. (Master's thesis). Retrieved from the National Thesis Center of the Council of Higher Education. (Thesis No. 709158)
- Göldağ, B., & Kanat, S. (2018). Güzel sanatlar eğitimi alan öğrencilerin dijital okuryazarlık durumları [Digital literacy status of the students who studied fine arts education]. *Jass Studies-The Journal of Academic Social Science Studies*, (70), 77-92.
- Gömlüksiz, M. N., Kan, A. Ü., & Fidan, E. K. (2013). Öğretmen adaylarının ekran okuma özyeterlik düzeylerine ilişkin görüşleri [Prospective teachers' perceptions of screen reading self-efficacy]. *Erzincan Üniversitesi Eğitim Fakültesi Dergisi [Journal of Erzincan University Faculty of Education]*, 15(2), 138-159.
- Gönen, M. (2007). *Öğretim boyunca okuma alışkanlığı, okuma kültürü ve okullarda uygulama sorunları toplantısı [Reading habit during teaching, reading culture and application problems in schools]*. Ankara: MEB Yayınları.
- Gönen, M., Öncü, Ç. E., & Işıtan, S. (2004). İlköğretim 5. 6. ve 7. sınıf öğrencilerinin okuma alışkanlıklarının incelenmesi [Examination of reading habits of primary education 5th, 6th and 7th grade students]. *Milli Eğitim Dergisi [National education journal]*, 32(164), 7-34.
- Güneş, F. (2010). Öğrencilerde ekran okuma ve ekranik düşünme [Thinking based on screen and screen reading of students]. *Mustafa Kemal Üniversitesi Sosyal Bilimler Enstitüsü Dergisi [Journal of Mustafa Kemal University Institute of Social Sciences]*, 7(14), 1-20.
- Karasar, N. (2011). *Bilimsel araştırma yöntemi [Scientific research method]*. Ankara: Nobel Akademik Yayıncılık.
- Kuru, O. (2018). Sınıf öğretmenliği 3. sınıf öğrencilerinin kâğıttan ve ekrandan okuma becerilerinin çeşitli değişkenler açısından incelenmesi [Examining the skills of 3rd grade class teachers department students on reading from paper and from the screen in terms of several variables]. *İnönü Üniversitesi Eğitim Fakültesi Dergisi [Inönü University Journal of the Faculty of Education]*, 19(2), 36-52. doi: 10.17679/inuefd.323135
- Kuru, O., Kaşkaya, A., & Calp, Ş., (2017). İlkokul 4. sınıf öğrencilerinin kâğıttan ve ekrandan okuduğunu anlama becerilerinin sınanması; Öğretmen ve öğrenci görüşleri [Comparison of the reading skills of 4th grade primary school students from the paper and from the screen, the viewpoints of teachers and students]. *Sosyal Bilimler Dergisi [Journal of Social Sciences]*, 7(13), 70-84.
- Lemken, B. (1999). *E-Book the missing link between paper and screen*. <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.46.5481&rep=rep1&type=pdf>

- Macit, İ., & Demir M. K. (2016). Dördüncü sınıf öğrencilerinin ekran okuma becerilerinin değerlendirilmesi [Evaluation of screen reading skills of 4th grade elementary students]. *Turkish Studies- International Periodical for the Languages, Literature and History of Turkish or Turkic*, 11(3), 1647-1664. doi: 10.7827/TurkishStudies.9228
- Maden, S. (2012). Ekran okuma türleri ve Türkçe öğretmen adaylarının ekran okumaya yönelik görüşleri [Screen reading types and opinions of prospective teacher of turkish language towards screen reading]. *Dil ve Edebiyat Eğitimi Dergisi [Journal of Language and Literature Education]*, 1(3), 1-16.
- Maden, S., & Maden, A. (2016). Ortaöğretim öğrencilerinin ekran okumaya yönelik tutumları [The attitudes of secondary school students towards screen reading]. *Uluslararası Türkçe Edebiyat Kültür Eğitim (TEKE) Dergisi [International Journal of Turkish Literature, Culture and Education (TEKE)]*, 5(3), 1305-1319.
- Mete, G. (2012). İlköğretim 8. sınıf öğrencilerinin okuma alışkanlığı üzerine bir araştırma (Malatya ili örneği) [A research on elementary 8th grade students' reading habits (Malatya sample)]. *Dil ve Edebiyat Eğitimi Dergisi [Journal of Language and Literature Education]*, 1(1), 43-66.
- Odabaş, H., Odabaş Z. Y., & Sevmez, H. (2018). Üniversite öğrencilerinde dijital / e-kitap okuma kültürü: Selçuk Üniversitesi örneği [Digital / e-book reading culture in university students: Selçuk University sample]. *DTCF Dergisi [Journal DTCF]*, 58(1), 139-171. doi: 10.33171/dtcfjournal.2018.58.1.8
- Odabaş, H., Odabaş, Z. Y., & Binici, K. (2020). Dijital bilgi kaynakları ve ortamlarının üniversite öğrencilerinin okuma davranışlarına etkileri [The effects of digital information sources and media on the reading behavior of university students]. *Milli Eğitim Dergisi [National education journal]*, 49(227), 89-116.
- Özbay, M., Bağcı, H., & Uyar, Y. (2008). Türkçe öğretmen adaylarının okuma alışkanlığına yönelik tutumlarının çeşitli değişkenlere göre değerlendirilmesi [Evaluation of the preservice Turkish teachers' attitudes towards reading habit according to some variables]. *İnönü Üniversitesi Eğitim Fakültesi Dergisi [Inönü University Journal of the Faculty of Education]*, 9(15), 117-136.
- Özen, M., & Ertem, İ. S. (2014). Metinleri ekrandan okumanın anlam kurma üzerine etkisi [The effect of screen reading of texts on meaning making]. *The Journal of Academic Social Science Studies*, (24), 319-350. doi: 10.9761/JASSS2161
- Özerbaş, M. A. & Kuralbayeva, A. (2018). Türkiye ve Kazakistan öğretmen adaylarının dijital okuryazarlık düzeylerinin incelenmesi [A review of digital literacy levels of future primary-school and secondary-school teachers in Turkey and Kazakhstan]. *MSKU Eğitim Fakültesi Dergisi [MSKU Journal of Education]*, (5), 16-25.
- Sağlam, M., Suna, Ç., & Çengelci, T. (2008). Öğretmen adaylarının okuma alışkanlıklarını etkileyen etmenlere ilişkin görüş ve önerileri [Opinions and suggestions of pre-service teachers on the factors affecting their reading habits]. *Milli Eğitim Dergisi [National education journal]*, 37(178), 8-23.
- Sankaya, B. (2019). Türkçe öğretmen adaylarının dijital okuryazarlık durumlarının çeşitli değişkenler açısından değerlendirilmesi [Evaluation of digital literacy status of prospective turkish teachers in terms of various variables]. *Uluslararası Sosyal Araştırmalar Dergisi [The Journal of International Social Research]*, 12(62), 1098-1107. doi: 10.17719/jisr.2019.3122
- Soyuçok, M., & Mazman Akar, S. C. (2018). Ortaokul öğrencilerinin ekran okumaya karşı tutumlarının bazı değişkenler açısından incelenmesi [Investigation of the attitudes of secondary school students on screen reading by some variables]. *Türkiye Eğitim Dergisi [Turkish Journal of Education]*, 3(2), 17-30. doi: 11.11111/ted.xx
- Şahenk Erkan, S. S., Balaban Dağal, A., & Tezcan, Ö. (2015). Öğretmen adaylarının yazılı ve dijital okuma alışkanlıklarının değerlendirilmesi [Evaluation of teacher candidates' printed media and digital reading habits]. *Uluslararası Eğitim Bilimleri Dergisi [The Journal of International Education Science]*, 2(2), 122-134.
- Tiryaki, E. N., & Karakuş, O. (2019). Türkçe öğretmen adaylarının dijital uygulama ile okuduğunu anlama becerisinin incelenmesi [Investigation of the skilling skills of Turkish teacher candidates reading by digital practice]. *İleri Eğitim Çalışmaları Dergisi [Journal of Advanced Education Studies]*, 1(1), 1-11.
- Ulu, H., & Zelzele, E. B. (2018). Öğretmen adaylarının ekran okuma öz yeterlik algılarının incelenmesi [Investigation of screen reading perceptions selfefficacy pre-service teachers]. *Uluslararası Türkçe Edebiyat Kültür Eğitim (TEKE) Dergisi [International Journal of Turkish Literature, Culture and Education (TEKE)]*, 7(4), 2608-2628.
- Uslu Üstten, A. (2014). 8. sınıf öğrencilerinin televizyon izleme sürelerinin okuma alışkanlıkları üzerine etkisi [Impacts of time spent in watching television on 8th grade students' reading habits]. *Turkish Studies- International Periodical for the Languages, Literature and History of Turkish or Turkic*, 9(3), 1511-1521. doi: 10.7827/TurkishStudies.6260
- Yaman, H., & Dağtaş, A. (2013a). Ekrandan okumanın okumaya yönelik tutuma etkisi [Impact of screen reading towards attitudes of reading]. *Eğitimde Kuram ve Uygulama [Journal of Theory and Practice in Education]*, 9(4), 314-333.

- Yaman, H., & Dağtaş, A. (2013b). Ekrandan okumanın Türkçe dersine yönelik tutuma etkisi [Impact of screen-reading towards attitudes of Turkish lesson]. *The Journal of Academic Social Science Studies*, 6(7), 1233-1250. doi : 10.9761/JASSS1803
- Yılmaz, B., Köse, E., & Korkut, Ş. (2009). Hacettepe üniversitesi ve Bilkent üniversitesi öğrencilerinin okuma alışkanlıkları üzerine bir araştırma [A research on reading habits of Hacettepe university and Bilkent university students]. *Türk Kütüphaneciliği [Turkish Librarianship]*, 23(1), 22-51.
- Yurdakal, İ. B., & Susar Kırmızı, F. (2021). Öğretmen adayları için dijital okumaya yönelik tutum ölçeği (DOTÖ): Geçerlik ve güvenirlik çalışması [Attitude scale towards digital reading (DRAS) for preservice teachers: Validity and reliability study]. *Buca Eğitim Fakültesi Dergisi [The Journal of Buca Faculty of Education]*, (51), 137-159. doi: 10.53444/deubefd.788603

The Story of the Bow and Arrow: Through the Eyes of Children

Aylin Özge Pekel¹, Esra Soy², Nagihan Kırıkoglu¹, Hacı Ahmet Pekel¹

¹ Faculty of Sport Sciences, Gazi University, Ankara, Türkiye

² Institute of Educational Sciences, Gazi University, Ankara, Türkiye

Correspondence: Nagihan Kırıkoglu, Faculty of Sport Sciences, Gazi University, Ankara, Türkiye.
Tel: +905065666387. E-mail: nagihankirikoglu@gazi.edu.tr

Abstract

The aim of this study is to determine children's metaphorical perceptions and drawings of the traditional concept of Turkish archery. In this study, which aims to uncover and examine metaphorical meanings, the phenomenology pattern was used. The research group was determined through easy-to-access sampling. A total of 60 athletes between the ages of 7 and 12 (40 males and 20 females) who studied in sports schools in the traditional Turkish archery discipline participated in the study in Ankara during the 2020-2021 season. In order to determine the perceptions of the children participating in the research on the concept of traditional Turkish archery through metaphors; "Traditional Turkish archery like/similar; because" and drawing a figure reflecting their thoughts on the concept of traditional Turkish archery. Children who were asked to explain the metaphor they used with the phrase "because" were given sufficient time to complete their figures. Content analysis technique was used in the evaluation of the data. In conclusion; While drawings containing materials specific to the disciplines were encountered in the drawings of the participants, happy human figures who had fun while doing sports were also frequently encountered. The sizes of the materials of the traditional Turkish archery of the children and the drawings were supported by figures containing positive energy such as the sun.

Keywords: Drawing, Metaphor, Phenomenology, Qualitative Research, Sports, Traditional Turkish Archery

1. Introduction

Archery is the oldest sporting art of the early days, but it is still an active sport today (Öngel, 2001). Archery was used to sustain the life of mankind, hunt and sustain its generations, while at the same time being an effective weapon in countering enemies. Equipment such as bows, arrows, horses and tents of the nomadic Turkish people living on Asian steppes has been of great importance in their daily lives. Turks managed to keep this sport alive until the beginning of the 20th century (Bir et al., 2006). Traditional Turkish Archery continues to develop today by being listed by UNESCO as an intangible cultural heritage site in 2019.

Metaphors have many features, from raising the motivation of athletes in traditional Turkish Archery and other sports disciplines, solving cognitive complexes and facilitating learning in teaching new skills in physical

education classes. Metaphors are also used to make sense of many sports-related concepts (İnan et al., 2019). Kövecses (2002) stated in his study that we could establish a relationship between our minds and concepts without changing the actual meaning of the concepts, thanks to metaphors. According to Lakoff and Johnson (2008), most people produce metaphors in our minds and project them on paper as poetry or paintings. In this way, the metaphors expressed by painting get rid of monotony and follow a different path. The fact that there are many analogies in the field of sports is quite prone to creating metaphors on concepts. These concepts also appear in our daily lives (İnan et al., 2019). Gassner (1999) states that using metaphors in teaching sportive skills plays an active role in teaching. In the traditional Turkish archery discipline, which is rapidly becoming widespread today, it is thought that metaphors and drawings are enlightening and guiding in terms of keeping a mirror to the mental processes as well as the physical development of the athletes who learn and want to develop this sport, and to determine the interest needs of the children who adopt the sport.

When the literature is examined, there are different sports disciplines, sports, physical education and sports lessons, and different metaphor studies for the concept of physical education teachers. Hohepa et al. (2006) aimed to explore the opinions of high school students about various physical activity contexts and their ideas about strategies for promoting potential physical activity in their studies. Triggs et al. (2011) focused on the place of the lyrics of children playing ball in the premier league in sports psychology and the communication of the players with each other in their study. Şirin et al. (2012) conducted a research to determine the metaphorical perceptions of rafting participants towards the concept of rafting. Koç et al. (2015) aimed to reveal the perceptions of primary 7th grade students towards the concept of "sports" through metaphors. Karakaya and Salici (2016) presented the study aimed at determining the metaphorical perceptions of 11–13-year-old studying in Isparta about popular sports. Hazar et al. (2017) tried to explain the perceptions of "traditional and digital" games through metaphors in the articles titled "Traditional game and digital game perceptions of middle school students". In their work, Çareadar et al. (2022) examined the perceptions and drawings of children between the ages of 7- 12 towards the concept of basketball. Studies that examine the perceptions and drawings of athletes for their own discipline concepts are rare in sports disciplines.

The subject of how the traditional Turkish archery discipline is expressed by children through metaphors, which is the source of the formation of our thoughts and the emergence of our behaviors, is a subject that needs to be investigated. It is thought that the concept of traditional Turkish archery handed down from generation to generation, the way children understand it is noticed by federations, coaches and families, and the study can contribute to the development of the discipline. Therefore, the aim of this study is to determine the metaphorical perceptions and drawings of children towards the concept of traditional Turkish archery.

2. Method

2.1. Research Design

In this study, which aims to uncover and examine the metaphorical meanings that children place on traditional Turkish archery concepts, the phenomenology pattern was used. In a phenomenological study, it is tried to reveal what individuals are experiencing and how they make sense of what they are experiencing (Creswell & Poth, 2016). In interpretative phenomenology, which aims to reveal the hidden meanings in human relations and experiences (Lopez & Willis, 2004).

2.2. Participants

A total of 60 children between the ages of 7-12 (40 males and 20 females) studying at traditional Turkish archery sports schools in Ankara in the 2020-2021 season participated in the research. However, data analyzes were carried out on 54 participants as a result of eliminating the forms that did not want to participate in the study, were not suitable or were empty.

2.3. Data Collection Technique

The data collection tool consists of two parts. In the first part, the demographic characteristics obtained in the research are included, and in the second part, in order to determine the perceptions of the children participating in the research towards the concept of traditional Turkish archery through metaphors; "it is like this, because....." was obtained through completing the sentence and drawing a figure reflecting their thoughts on the concept of traditional Turkish archery. Children who were asked to explain the metaphor they used with the phrase "because" were given sufficient time to complete their figures. While explaining what to do to the children participating in the research, care was taken not to use any guiding expressions, and necessary permissions were obtained from their families and trainers for the application.

2.3.1. Data Evaluation

In the research, a total of 54 metaphors that were valid for the concept of "traditional archery" were analyzed using content analysis technique. Content analysis; It is the process of quantifying (digitizing) what people say and write by coding them according to clear instructions (Patton, 2014). The metaphors obtained first for the analysis of the data are numbered from 1 to 54. The metaphors and drawings on the numbered papers were examined one by one and coding was made taking into account the explanations. During coding, the data were tried to be made meaningful by creating a code list according to the meanings of the metaphors and reaching the categories that could best explain the relationship between the codes. Metaphors are often used in qualitative research due to their ability to deal with the diversity of research data (ease of creating categories), link data and facilitate the presentation of data to the reader (Sadık & Sarı, 2012). In order to ensure validity and reliability in qualitative research, it was used to submit the data and analyses to the control of the people being investigated, as well as to present the data and the interpretations of the analyses to the experts (Ekiz, 2009). In addition, the themes created by two experts from outside the research and the researcher who conducted the study were compared and the numbers of consensus and disagreement were determined in the comparisons, and the reliability of the research was calculated using Miles and Huberman (1994)'s formula ($\text{Reliability} = \frac{\text{consensus}}{\text{consensus} + \text{disagreement}}$). In qualitative studies, a desired level of reliability is achieved when the agreement between expert and researcher evaluations is 90% or more (Saban, 2009; Saban et al., 2006). It was observed that the harmonization percentages of the drawings were collected under the same themes in 92% of the same themes. Again, the delivery of some of the findings without impairing the authenticity of the research results is one of the measures that will increase the internal reliability of the research (Maykut & Morehouse, 2002; Robson, 1999; Türnüklü, 2001; Yıldırım & Şimşek, 2005). In this study, the process of determining metaphors was described in detail, and one-to-one examples from the statements of the participants were presented in the findings section of the research.

3. Results

In this section, the drawings of licensed and amateur children interested in traditional Turkish archery are examined under certain codes and themes according to their common characteristics and numerical information about them is presented. Examples of drawings are also included. The codes and themes of the metaphors made by the children who participated in the study towards the concept of "traditional Turkish archery" are included in Table 1.

Table 1: Characteristics of the metaphors produced by children regarding the concept of traditional Turkish archery and distribution by categories attributed to the subject to the source

Conceptual Themes	Codes
Being a winner	Pen, duster, stick, horse, spear, race and religion, eagle, war, tree, letter 1, security, war tool, circle, flower, airplane, food, volleyball, bow, Turkishness, olympic archery, clean air, pistol, falcon, ball, football, basketball, dodgeball
Being emotional	A place he never knows, game, yoga, sports, history, loving, exhilarating, perseverance
Being a fun	Motivation element, entertainment, time travel, high speed train

3.1 Traditional Turkish Archery as a Gain Element

In addition to the physical development of moving and high pulse training, it is also underlined the contribution it makes to psychosocial and personal development (Malm et al., 2019). They emphasized that the development of skills such as social development self-esteem and self-worth together with personal development supports sports activities (Holt et al., 2017). Research shows that children who participate in sports are also adopted by parents to provide personal social and physical benefits (Neely & Holt, 2014).

In this category, the athletes learn the concept of traditional Turkish archery, useful, good, directing to the right habits, self-control, responsibility, patience, preventing evil, etc. The situations in which they explained the characteristics of the metaphor attributed to the source with expressions were gathered under this category. The metaphors used by 37 athletes (68.5%) in this category are pencil, dust breaker, stick, horse, spear, race and religion, eagle, war, tree, letter I, security, war tool, hoop, flower, airplane, food, volleyball, bow, Turkish, Olympic archery, fresh air, pistol, falcon, ball, football, basketball, dodgeball metaphors can be given as examples. Some examples of metaphors and drawings created by athletes interested in traditional Turkish archery are given below;

“Traditional Turkish Archery is/like our roots; because it is a strong sport that has developed since the beginning of our history and will continue forever, and it is an important factor in transferring our history to the future.” (Athlete 27E13)

“Traditional Turkish Archery is/like a hawk; Because in Turkish archery, you focus on your target and shoot, just like a falcon focuses on its target and glides through the sky to catch its prey.” (Athlete 12E11)



Figure 1:(a-b): Traditional Turkish Archery as a Gain Element

For figure 1a, archery can be preferred as a sport with a high sense of curiosity and fun. His detailed drawing in the figure shows that he has a perfectionist structure and gives importance to archery. (Athlete 51E9)

For figure 1b, we can think of archery as a sport that one can have fun and enjoy. The fact that he is not afraid of obstacles while focusing on the goal can mean that the motivation is high. (Athlete 29K10)

3.2 Traditional Turkish Archery as a Fun-Motivation Element

In sports disciplines, there are many elements that connect the athletes to themselves and provide motivation and fun. Motivation enables a person to increase their desire and effort to realize learning. Maintaining this desire and effort makes teaching and learning processes fun and efficient (Ur, 1996). Naturally, children love games and they are interested in lessons and training with fun activities. In other words, success comes as a result of being well motivated (Yule, 2006).

When this theme is examined, it is seen that the drawings are concentrated as figures of happy children in traditional Turkish archery training. It is seen in the drawings and metaphors that children consider the time when

they are happy and enjoying while learning the concept of traditional Turkish archery. Some examples of metaphors and drawings created by children are as follows:

“Traditional Turkish Archery is like/like love; Because shooting is a fun and relaxing sport, I feel good while shooting arrows.” (Athlete 22K9)

“Traditional Turkish Archery is/is like a fun game; because it's fun to play games, it's fun to shoot arrows” (Athlete7E10)

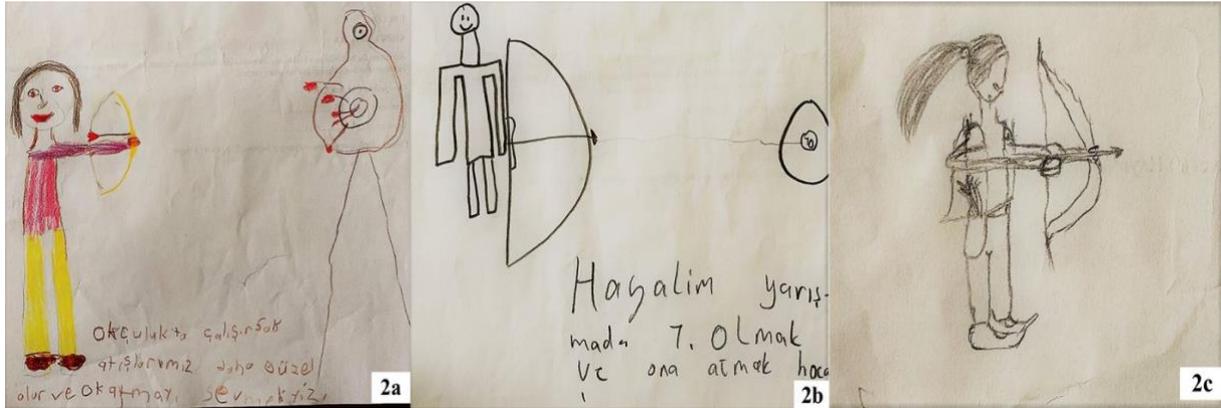


Figure 2: (a-b-c). Traditional Turkish Archery as a Fun-Motivation Element

From the drawings of figure 2a, it can be said that archery makes her happy and good, and it can be said that it will be a factor in increasing the motivation of the athlete and increasing her success. (Athlete 22K9)

In the statement he made in figure 2b as "My dream is to be 1st in the competition and to score 10", we can say that he has a clear personality and goal-oriented with his drawings, and that his goal is a small bow and his drawing himself big reflects his self-confidence. (Athlete 30E8)

In figure 2c, we can understand that the athlete enjoys sports by keeping all parts of her body facing the target, and some of the drawings have faint or missing limb drawings. Self-confidence and social personality areas can be given importance. (Athlete 28K13)

3.3 Traditional Turkish Archery as an Emotion Element

Emotions play a central role in the important events of our lives. Although emotions have many behavioral and physiological characteristics, emotions are primarily psychological (Lazarus, 1991). They are subjective feelings experienced in response to events in the athlete's mind, such as the athlete's environment or the anticipation of an upcoming event (Lazarus, 2000). Emotional intelligence inspires not only to achieve better but also to enthusiastically start an activity, even if it is an extremely challenging task (Goleman, 2017). Effective learning takes place as long as children have fun and actively participate in the learning process (Uskan & Bozkuş, 2019). In this category, a place where the athletes do not know the concept of traditional Turkish archery, games, yoga, sports, history, love, pleasure, perseverance, etc. explained in terms. Examples of metaphors used by 12 students (22.2%) in this category are hobby, being stress-free, relaxing, liking sports, distraction, having fun while shooting arrows, and curiosity. Some examples of metaphors and drawings created by athletes are as follows:

“Traditional Turkish Archery is like/similar to entering a place I have never known; Because when I shoot an arrow, I try to aim the arrow like everyone else, but I still wonder if the arrow will go to the target and I get excited.” (Athlete51E9)

“Traditional Turkish Archery is like/similar to entering yoga; because even though my lessons are tiring for me, I distract myself in archery and it relaxes me.” (Athlete 35E9)

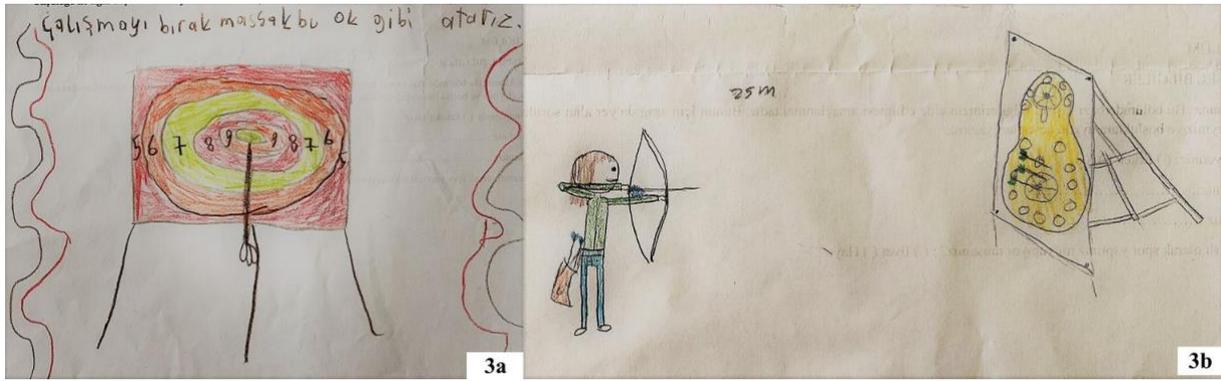


Figure 3(a-b): Traditional Turkish Archery as an Emotion Element

We can say that he puts regular work on the basis of his success and his motivation is strong with the explanation of figure 3a, "If we do not stop working, we will shoot like this arrow". (Athlete 21K8)

In figure 3b, we can state that she draws her figure in three dimensions, sees the details well, and emphasizes her self-confidence by keeping the bow clear. We can say that she likes traditional Turkish archery with her happy facial expression, which she is sure that she will succeed in drawing that the arrows she shoots hit the target. (Athlete 16K9)

4. Discussion and Conclusion

Metaphors and drawings were used in this study to determine the feelings and thoughts of children studying traditional Turkish archery towards the concept of traditional Turkish archery. While drawings of the participants contained materials specific to the discipline, happy human figures who had fun while playing sports were also frequently found. The size of the materials drawn by the children in traditional Turkish archery supported the drawings with figures with positive energy such as the sun. Due to the Covid 19 pandemic, they have to spend most of the day in front of electronic devices in a sedentary house, which they define as a relaxing and focused activity that distracts traditional Turkish archery from the cognitive fatigue created by lessons and daily life.

The positive development of the sports environment involves learning health habits and being physically fit. Positive development also includes the development of psychological traits and tendencies (optimism or a sense of hope) and certain skills (the ability to set goals or manage stress) (Gould & Carson, 2008). Given the findings, it is not surprising that professionals in the field of physical education, sport psychology and youth development are interested in using sport as a tool for developing life skills in youth. In addition, in various studies, he emphasized that the family is critical for increasing the commitment of the family to sports and the participation of athletes in training (Ferguson et al., 2019). Social interaction is considered a basic psychological need, which is important for all people (Baumeister & Leary, 2017; Ryan & Deci, 2000). Extroversion throughout life follows a common trajectory that increases in childhood, decreases throughout adolescence, stabilizes in adulthood and decreases in old age (Bleidorn & Hopwood, 2019; Roberts et al., 2006; Van den Akker et al., 2014). Extroversion can be defined more broadly, including talkativeness, sociability, dominance, enterprise, the search for excitement, self-confidence and positive emotions (Wilt & Revelle, 2017). It was observed that some of the paintings had faint or missing limb drawings. It can be suggested that emphasis should be placed on the self-confidence and social personality areas of these athletes and that their sports activities should be supported by their families and coaches. Coaches should help and encourage athletes to realize the importance of emotions in motor performance (Goleman, 2017).

With the findings of the research, it is recommended to carry out various studies with licensed athletes in sports with different age groups in order to benefit from the positive effects it provides by conducting wider research on Turkish archery, which has been transferred from our history to the present, and to benefit from the assimilation of our history by our children. As a result of the findings obtained from the research, the following suggestions can be made:

- In order to enable children to reveal their potential and to determine what they expect from the discipline, it is thought that the study will contribute to the trainers and federations, and by supporting such studies, importance can be given to determining the needs of the children in order to develop the discipline.
- It can be suggested that the developmental characteristics of children should be better absorbed by the coaches and that seminars and trainings should be given on what kind of practices will support the development of athletes.
- In the research findings, more extensive studies can be carried out on this subject in order for our children to assimilate the connection of traditional Turkish archery with our history and to transfer our glorious history from generation to generation.

Acknowledgments

This study was presented orally at the 7. Çukurova International Scientific Researches Conference. Also, we would also like to thank Mine Bilgin for her contribution to the interpretation of metaphors and drawings.

References

- Baumeister, R. F., & Leary, M. R. (2017). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Interpersonal Development*, 57-89.
- Bir, A., Kaçar, M., & Acar, Ş. (2006). Türk menzil okçuluğu, yay ve okları [Turkish distance archery, bows and arrows]. *Osmanlı Bilimi Araştırmaları*, 8(1), 39-67.
- Bleidorn, W., & Hopwood, C. J. (2019). Stability and change in personality traits over the lifespan. In D. P. McAdams, R. L. Shiner, & J. L. Tackett (Eds.), *Handbook of personality development* (pp. 237–252). The Guilford Press.
- Çaredar, N., Pekel, A. Ö., & Cengizel, Ç. Ö. (2022). Children's Perceptions of Basketball through Metaphors and Drawings. *Education Quarterly Reviews*, 5(2), 117-127. <https://doi.org/10.31014/aior.1993.05.02.473>
- Creswell, J. W., & Poth, C. N. (2016). *Qualitative inquiry and research design: Choosing among five approaches*. Sage.
- Ekiz, D. (2009). *Bilimsel araştırma yöntemleri: Yaklaşım, yöntem ve teknikler [Scientific research methods: Approach, methods and techniques]*. Anı.
- Ferguson, L., Epp, G. B., Wuttunee, K., Dunn, M., McHugh, T.-L., & Humbert, M. L. (2019). 'It's more than just performing well in your sport. It's also about being healthy physically, mentally, emotionally, and spiritually': Indigenous women athletes' meanings and experiences of flourishing in sport. *Qualitative Research in Sport, Exercise and Health*, 11(1), 1-19. <https://doi.org/10.1080/2159676X.2018.1458332>
- Gassner, G. J. (1999). Using metaphors for high-performance teaching and coaching. *Journal of Physical Education, Recreation & Dance*, 70(7), 33-35. <https://doi.org/10.1080/07303084.1999.10605684>
- Goleman, D. (2017). *Emocionalna inteligencia*. Citadella.
- Gould, D., & Carson, S. (2008). Life skills development through sport: Current status and future directions. *International Review of Sport and Exercise Psychology*, 1(1), 58-78. <https://doi.org/10.1080/17509840701834573>
- Hazar, Z., Tekkurşun-Demir, G., & Dalkıran, H. (2017). Ortaokul öğrencilerinin geleneksel oyun ve dijital oyun algılarının incelenmesi: Karşılaştırmalı metafor çalışması [Investigation of the traditional game and digital games perceptions of middle school students: Comparative metaphor study]. *Spor Bilimleri Dergisi*, 15(4), 179-190. https://doi.org/10.1501/Sporm_0000000334
- Hohepa, M., Schofield, G., & Kolt, G. S. (2006). Physical activity: what do high school students think? *Journal of Adolescent Health*, 39(3), 328-336. <https://doi.org/10.1016/j.jadohealth.2005.12.024>
- Holt, N. L., Neely, K. C., Slater, L. G., Camiré, M., Côté, J., Fraser-Thomas, J., . . . Tamminen, K. A. (2017). A grounded theory of positive youth development through sport based on results from a qualitative meta-study. *International Review of Sport and Exercise Psychology*, 10(1), 1-49. <https://doi.org/10.1080/1750984X.2016.1180704>
- İnan, M., Dervent, F., & Karadağ, B. (2019). Spor paydaşlarının fairplay kavramına ilişkin metaforik algıları [Metaphoric conceptualization of fairplay by sports stakeholders]. *Spor Bilimleri Dergisi*, 30(2), 85-95. <https://doi.org/10.17644/sbd.339141>
- Karakaya, E. D., & Salici, O. (2016). Isparta'da öğrenim gören 11-13 yaş gurubu öğrencilerin popüler spor branşları hakkındaki metaforik algılarının belirlenmesi [Determination of the metaphorical perception of the students, aged 11 to 13, studying about popular sports branches in Isparta]. *International Journal of Social Sciences and Education Research*, 2(3), 855-869. <https://doi.org/10.24289/ijsser.279029>

- Koç, M., Murathan, F., Yetiş, Ü., & Murathan, T. (2015). İlköğretim 7. sınıf öğrencilerinin spor kavramına ilişkin algıları [Perceptions of 7th grade elementary students about sports concept]. *Akademik Sosyal Araştırmalar Dergisi*, 3(9), 294-303.
- Kövecses, Z. (2002). Cognitive-linguistic comments on metaphor identification. *Language and Literature*, 11(1), 74-78.
- Lakoff, G., & Johnson, M. (2008). *Metaphors we live by*. University of Chicago Press.
- Lazarus, R. S. (1991). *Emotion and adaptation*. Oxford University Press.
- Lazarus, R. S. (2000). How emotions influence performance in competitive sports. *The Sport Psychologist*, 14(3), 229-252. <https://doi.org/10.1123/tsp.14.3.229>
- Lopez, K. A., & Willis, D. G. (2004). Descriptive versus interpretive phenomenology: Their contributions to nursing knowledge. *Qualitative Health Research*, 14(5), 726-735. <https://doi.org/10.1177/1049732304263638>
- Malm, C., Jakobsson, J., & Isaksson, A. (2019). Physical activity and sports-real health benefits: a review with insight into the public health of Sweden. *Sports*, 7(5), 127. <https://doi.org/10.3390/sports7050127>
- Maykut, P., & Morehouse, R. (2002). *Beginning qualitative research: A philosophical and practical guide*. Routledge.
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook*. Sage.
- Neely, K. C., & Holt, N. L. (2014). Parents' perspectives on the benefits of sport participation for young children. *The Sport Psychologist*, 28(3), 255-268. <https://doi.org/10.1123/tsp.2013-0094>
- Öngel, H. B. (2001). Gelişim sürecinde erken iç asya türk okçuluğu [Middle asia turkish archery in early period of development process]. *Gazi Üniversitesi Gazi Eğitim Fakültesi Dergisi*, 21(2), 189-215.
- Patton, M. Q. (2014). *Qualitative research & evaluation methods: Integrating theory and practice*. Sage.
- Roberts, B. W., Walton, K. E., & Viechtbauer, W. (2006). Patterns of mean-level change in personality traits across the life course: a meta-analysis of longitudinal studies. *Psychological Bulletin*, 132(1), 1. <https://psycnet.apa.org/doi/10.1037/0033-2909.132.1.1>
- Robson, C. (1999). *Real world research*. Blackwell.
- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, 55 (1), 68-78. <https://psycnet.apa.org/doi/10.1037/0003-066X.55.1.68>
- Saban, A. (2009). Öğretmen adaylarının öğrenci kavramına ilişkin sahip oldukları zihinsel imgeler [Prospective teachers' mental images about the concept of student]. *Türk Eğitim Bilimleri Dergisi*, 7(2), 281-326.
- Saban, A., Koçbeker, B. N., & Saban, A. (2006). Öğretmen adaylarının öğretmen kavramına ilişkin algılarının metafor analizi yoluyla incelenmesi [Examining pre-service teachers' perceptions of the concept of teacher through metaphor analysis]. *Kuram ve Uygulamada Eğitim Bilimleri*, 6(2), 509-522.
- Sadık, F., & Sarı, M. (2012). Çocuk ve demokrasi: İlköğretim öğrencilerinin demokrasi algılarının metaforlar aracılığıyla incelenmesi [Child and democracy: Examination of elementary education school students' democracy perception by metaphors]. *Uluslararası Cumhuriyet Eğitim Dergisi*, 1(1), 48-62.
- Şirin, E. F., Bektaş, F., Karaman, G., & Aytan, G. K. (2012). Rafting katılımcılarının rafting kavramına ilişkin metaforik algıları [Rafting participants' metaphoric perceptions concerning the concept of rafting]. *Beden Eğitimi ve Spor Bilimleri Dergisi*, 6(2), 207-215.
- Triggs, C., Lafferty, M. E., Brown, H. E., & Tolley, H. L. (2011). Metaphorical use of song lyrics within sport psychology practice: Targeting the transition within a premier league football youth academy. *Journal of Sport Psychology in Action*, 2(3), 183-195. <https://doi.org/10.1080/21520704.2011.619046>
- Türnüklü, A. (2001). Eğitim bilim alanında aynı araştırma sorusunu yanıtlamak için farklı araştırma tekniklerinin birlikte kullanılması [Using different research techniques for the same question in educational science]. *Eğitim ve Bilim*, 26(120).
- Ur, P. (1996). *A course in language teaching* (Vol. 1). New York: Cambridge University Press Cambridge.
- Uskan, S. B., & Bozkuş, T. (2019). Eğitimde oyunun yeri [Place of play in education]. *Uluslararası Güncel Eğitim Araştırmaları Dergisi*, 5(2), 123-131.
- Van den Akker, A. L., Deković, M., Asscher, J., & Prinzie, P. (2014). Mean-level personality development across childhood and adolescence: a temporary defiance of the maturity principle and bidirectional associations with parenting. *Journal of Personality and Social Psychology*, 107(4), 736. <https://psycnet.apa.org/doi/10.1037/a0037248>
- Wilt, J., & Revelle, W. (2017). The Oxford handbook of the five factor model of personality. In T. A. Widiger (Ed.), *The Oxford handbook of the five factor model* (pp. 57-82). Oxford University Press.
- Yıldırım, A., & Şimşek, H. (2005). *Sosyal bilimlerde nitel araştırma yöntemleri [Qualitative research methods in social sciences]*. Seçkin.
- Yule, G. (2006). *The study of language*. Cambridge University Press.

Learning: An Evolutionary Perspective

André Petitat¹

¹ Social Sciences Institute, University of Lausanne, Lausanne, Switzerland

Correspondence: André Petitat, Social Sciences Institute, Geopolis, University of Lausanne, 1015 Lausanne, Switzerland. E-mail: andre.petitat@unil.ch

Abstract

From an evolutionary perspective, this article presents a synthesis of the work on learning and advocates conceptual changes. It distinguishes several levels of learning: genomic, sensorimotor and symbolic. It also suggests a re-examination of the concepts of artifact, algorithm and information, extending them to all living things and differentiating them according to the levels of learning. These modifications are justified by the numerous discoveries that have modified our representations during the last decades. Epigenetics has shaken the relationship between the innate and the acquired, neuroscience has made it possible to go beyond behaviorist dogmas, ethology has brought humans and animals closer together, social learning has emerged as a basic skill leading to languages and cultures, and psychology has shed more light on the roots of the symbolic in the sensorimotor. Each of these different advances in our knowledge has an impact on the conception of learning and invite us to adapt our conceptual tools. Such an adaptation should allow us to better apprehend the digital revolution and its learning modalities.

Keywords: Learning, Evolution, Social Learning, Education, Artifact, Algorithm, Information

1. Introduction

In recent decades, several scientific contributions have called to reconsider learning: epigenetics have shaken our representations of the innate and the acquired; cognitive neuroscience has sidelined classical behaviorism; ethology has revealed the existence in animals of social learning and of cultures; child psychology has better identified the articulation between the sensorimotor and the symbolic; finally, humans have developed digital machines capable of new forms of learning, thus changing their relationship to the world.

Reflecting upon learning today means questioning conceptions that impede the integration of these new developments. This article focuses on the classical oppositions between the innate and the acquired and between the living and the technical, the latter mobilizing the notions of *artifact*, *tool*, *information* and *algorithm*. This approach implies considering the biological and neural realities related to learning that are now part of human culture. Such an interdisciplinary detour has become necessary. The conceptual redefinitions proposed here are made within the framework of an evolutionary vision. This vision distinguishes between genomic, sensorimotor and symbolic learning, each of which is both connected and separated by emerging steps (Petitat, 2020). This

update is the first step towards an interpretation of the relationship between digital revolution and learning on an evolutionary scale.

2. Genomic learning

The classical synthetic theory of evolution relates the evolutionary dynamics of species to random mutations and selective pressures. Over the past decades, this credo has repeatedly had to adapt, for several reasons:

- Starting in the 1990s, biologists uncovered epigenetic mechanisms. These mechanisms, which modify gene expression in a reversible and partially transmissible way, are related to the organisms' own experiences. They can be assimilated to genomic learning, thus introducing intra- and inter-generational plasticity (Baugh & Troy, 2020, Burton et al., 2021). Here, innate and acquired are in close dialogue.
- For some time, the learning abilities of many unicellular organisms have intrigued researchers. Other mechanisms, different from epigenetics and still poorly understood, are at work here (Boussard et al., 2019; Dexter et al., 2020; Fleig et al., 2022; Gershman et al., 2021).
- The *gene-behavior* and *gene-culture coevolution hypothesis*, which suggests that behaviors learned without modifying genes can exert selective pressure on genetic mutations and become evolutionary drivers, introduces an interesting interactive evolutionary pattern between innate and acquired (Richerson & Boyd, 2005; Gupta et al., 2021; Aguilar et al., 2019; Nolfi & Floreano, 1999).
- Research has also shown the existence of inter-species transfers of genetic know-how. Each lineage is therefore not obliged to invent or reinvent everything all over again. These transfers, made possible thanks to the universality of the genetic code, have sometimes caused decisive evolutionary leaps (notably during endosymbiosis). Learning from others is the basic pattern of what we call *social learning*. By producing GMOs, humans deliberately organize such transfers.
- Finally, the *neutralist theory of evolution* (Kimura, 1968) has shown that most mutations have little or no effect on survival and reproduction. This observation reduces the relative importance of the mutations-selections process and increases that due to genetic drift made of unpredictable ecological hazards such as geographical fragmentations of populations, epidemic ravages, cataclysms, etc.

The radical opposition between hereditary genetic determinisms and learning does not account for this new landscape. In order to overcome this shortcoming and in the interest of conceptual homogenization, it is preferable to include the dynamics of genetic evolution in the concept of *genomic learning*. Behavior can be learned, both at the level of genes, which can be transmitted from one generation to the next and at the level of intra-generational experiential learning that mobilizes their expressions. It is the modalities of learning that change. A clear division between innate and acquired impedes the development of an encompassing vision articulating different learning dynamics (Hosken et al., 2019; Weitekamp & Keller, 2019).

2.1 Artificality at the cellular level

Why not consider proteins as a variety of artifacts produced at the cellular level? Traditionally, the notion of artifact refers to *objects made by humans intentionally, in order to meet certain goals*. It implicitly refers to the opposition, attributed to Aristotle (The *Nicomachean Ethics*, 1997, 1140a), between nature (beings that exist by themselves) and culture (objects related to human arts). This definition has often been criticized. It no longer satisfies ethologists, who have underlined a gradation in animal intentionality and culture. The notion of object is not clear either: do vocalizations or meaningful gestures fall into the category of artifacts? Should the products of mental operations be included? More generally, should all behaviors be included? The dimension of functionality is also problematic, since waste, fabricated and rejected by biological organisms is, for them, devoid of function. Finally, biological engineering raises still other questions. The *Escherichia coli* bacterium, a natural organism, becomes an artifact when modified to produce insulin. The latter can be considered an artifact of the artifact. Not only do GMOs produce artifacts, but their genomes can be partially considered as artifacts.

We must come to terms with the fact that the old concept of artifact, which refers to a "paleolithic categorization" (Sperber, 2007), belongs to the past. It refers to an anthropomorphic ontology, at odds with our present knowledge

and practices. Either this concept is abandoned, or it calls for a consequent redefinition that makes it compatible with current epistemic requirements. The present paper opts for this last solution.

Jacques Monod, in *Chance and Necessity* (1972, 9), already suggested a radical broadening of the notion: "Every artifact is a product made by a living being which through it expresses, in a particularly conspicuous manner, one of the fundamental characteristics to all living beings without exception: that of being *objects endowed with a purpose or project*, which at the same time they exhibit in their structure and carry out through their performances (such as, for example, the making of artifacts)".

With this perspective in mind, even unicellulars produce artifacts. Thus generalized, the concept of artifact encompasses all creations of living beings, material, immaterial or behavioral, internal or external, from the proteins made by bacteria to today's computers. This extension, of the same generality as that of living beings as a whole, will undoubtedly seem exaggerated to some. It is proposed here to help overcome the erroneous anthropocentric vision by which humans are the almost exclusive bearers of technical capacity and inventiveness. This extension of the concept of artifact, which implies an analogous extension of that of "technique", calls for its specification depending on whether it refers to a molecule, a behavior, a tool, a word or a narrative.

Such a vision implies already constituted biological subjects. It must be completed by including two fundamental processes: reproduction and self-production. Living beings are themselves their own artifacts. They self-transform by modifying the production of their own artifacts. The circular relationship between "technique" and "subject" is already present at the unicellular level.

Tools are a sub-category of artifacts. They are products that repeatedly serve to accomplish one or more functions. They can be internal, such as the enzymes of unicellulars, or external, such as spider webs or bird songs. This definition differs considerably from Beck's (1980) anthropomorphic definition, which defines the tool as external to its user, detached from its support, held and correctly oriented in order to modify the form, position or state of another object, organism or the individual himself. Such a definition automatically excludes unicellulars and most non-human multicellulars. It has proven cumbersome, as it is associated with very dissimilar levels of cognition – from birds adjusting twigs to extract insects to ants dipping grains of sand in an edible liquid to transport it to their anthill – while excluding the sometimes very sophisticated construction of birds' nests, field mice galleries, etc. Such a definition has frequently been questioned and proposals have been made to extend it as observations in ethology have accumulated (Cuevas Badallo, 2019; Preston, 1998; Gould, 2007; Borgo et al., 2013).

Alongside the tool, other categories of artifacts should be mentioned: *functional assignment artifacts* (the living being borrows elements from the environment without modifying them and endows them with specific functions), *compositional substance artifacts* (the living being fabricates simple elements that will serve as bricks in more complex constructions), and *waste artifacts* (the living being discards elements that it no longer needs). All of these artifacts are closely dependent on the genetic code, a core artifact which deserves special attention.

2.2 The genetic code, an immaterial but embodied artifact

Nothing is more material than DNA, a polymer with its nucleic acids. Nor is anything more material than the fabrication of proteins by adding amino acids and folding. But how to classify the genetic code itself? It consists of corresponding relations between three by three combinations (triplets or codons) of four simple molecules (nucleotides), combinations that univocally refer to one or the other of the twenty amino acids that enter by linear addition into the composition of proteins. DNA itself is not a code but a macromolecule. A common but inaccurate shortcut is "DNA code". Indeed, a molecule becomes a code only if it is associated with a decoding process. Once Watson and Crick (1953) had described the DNA molecule, it took many years to discover how this helical chain was solicited and read by other instances in the cell.

The correspondence relations of the genetic code are not material, although they unfold their effects in a material way and can exist only with a material support. The immateriality of the codes is materially expressed in the bodies. The self-artifactual evolution takes place in the background of the immateriality of the codes and the

materiality of the life and death of the bodies (or of their subdivision). It is possible to translate a genome into a binary language and record it on a computer, i.e., to move from a chemical medium *in vivo* to an electronic one *in silico*, and vice-versa (Gibson et al., 2010; Venter, 2013). However, the switch from one medium to the other is not innocent, since the *in silico* is cut off from the dynamics that characterize the *in vivo*. Each medium has its possibilities and constraints. To ignore this leads to dead-ends, possibly to the endangering of vital processes.

Information conceived outside of its media is an abstraction made possible by the symbolic revolution. In *Information, The Hidden Side of Life* (Dessalles et al., 2018), the authors rightly emphasize the immaterial aspect of information coding in the living kingdom. However, they tend to neglect the supports, by equating *in silico* with *in vivo* genomes. Moreover, when referring to physicalist conceptions of information, the authors reduce biological information solely to its physical transmission dimension, thus maintaining a confusion of levels and a reduction that has proven to be of little use to biologists (see below).

The genetic code came into being during the protohistory of life. Unfortunately, so far, the important quantity of research concerning the origin of life has not been able to provide any certainty enlightening this genesis. Between the physical and the biological, there is a grey zone where what belongs respectively to the living and the non-living seems undistinguishable (Lechermeier, 2019; Heams, 2019; Lafontaine, 2021). Between the first material systems capable of evolving and the first prokaryotic cells analogous to those we know today, it is likely that hundreds of millions of years passed. It is in this obscure zone that the immaterial relations of correspondence came to be, relations that characterize not only the genetic code but all the other subsequent codes of life.

The genetic code opens the door to both memorization and random-selective variations of algorithmic procedures. It is the primary invention on which all others depend. The genetic code acts as an operator of complexity between the physical and the biological. It constitutes the central device of genomic learning as a slow and continuous self-invention of biological subjects.

2.3 Physical information and biological information: the notion of algorithm

In its most general sense, the notion of algorithm designates predefined ways of proceeding to obtain a particular result, thus including the procedure for making a protein as well as the recipe for a cake or the way to extract a square root. This notion is important to distinguish two types of morphogenesis. In the physical world, transformation processes are not guided by algorithms derived from learning: they result from the encounter of material objects under certain energy conditions. Even if the transformations take place in a specific order, no learning is involved. Physical information is linked to the laws governing the structure and transformation of matter and energy. Biological information holds a meta-position with respect to physics: it guides physical transformations by using coded procedures and biotechnical mediations that are invented, memorized and can be modified. A gene can be assimilated to an algorithm that guides the synthesis of a protein by mobilizing an internal chemical factory (composed of ribosomes and transfer RNAs). DNA gathers a large number of algorithmic instructions intended to frame the molecular fabrications that the metabolism needs. The coding relationships that underlie these algorithms can therefore be conventionally used to draw the boundary between the physical and the biological, two domains that differ in their dynamics of form-making or morphogenesis (the idea of inert matter is obsolete).

The conceptions of Claude Shannon (1948) and Léon Brillouin (1956) – who made the link with Boltzman's physical entropy – are often used as a reference when it comes to suggesting a scientific definition of information. However, they focus on the reduction of signal uncertainty (information loss and compaction) and neglect qualitative changes in information. This approach provides a transdisciplinary benefit that has largely fueled the hopes of cybernetics, by linking information and negentropy (Lafontaine, 2004). However, this advantage ignores the mutations of information during evolution. At the basis of these metamorphoses, the emergence of the living has promoted information to the status of coded procedural knowledge and know-how guiding physical transformations (Chapouthier, 2001, Bates 2005, 2006).

Nonetheless, the procedural recipe alone is not enough: to transform something, the ingredients as well as the technical means are both necessary. When an algorithmic information guides a physical transformation, it induces a modification of the physical information thanks to a technical mediation (energy, an enzyme facilitating an intracellular chemical reaction, an appropriate gesture, a tool, a machine, etc.). This technical mediation must be invented and transmitted, which implies constraints of energy, manufacturing steps, etc., that must obviously respect the laws of physics.

2.4 In summary...

Genomic learning occurs through several mechanisms, including mutations-selections, genetic drifts, modulation of gene expressions, gene transfers, gene-behavior and gene-culture interactions. Stochastic links are established between learnings at the individual level and their impact at the species level. Ideally, the study of learning should not omit to link these two poles. This is particularly important since it concerns the self-construction of living organisms.

At the heart of the system we find the genetic code. Genes can be considered as algorithms that may be activated to guide the synthesis of artefacts, in the form of complex molecules necessary for cellular life. During the transition between the non-living and the living, information acquires new qualities that make it capable of animating the morphogenesis of the living, which is different from that of the non-living.

"Technical" knowledge and know-how are constitutive of living beings, and have been present from the very beginning. Obviously, this does not mean that technical creativity in general can be reduced to that of unicellulars. The genomic, sensorimotor, symbolic and digital technical dynamics are separated by emergent disruptions. The naturalization of the technical, in the sense of reducing higher levels to the genomic, is therefore only of relative interest. To recall that the human species did not invent artifacts does not mean falling into a form of reductionist naturalism. Rather, it is a perspective that places mankind in the general evolution of life, with its continuities and ruptures (for a review of the discussions around the concept of emergence, see O'Connor & Wong, 2015). The fact of ignoring that life itself requires a meta-position, resulting in the elaboration of algorithms guiding physico-chemical transformation processes, deprives us of understanding the distant roots of the various technical revolutions that took place, as well as the current digital revolution.

3. Sensorimotor learning

Learning abilities have long been attributed to non-human organisms. There is no need to go back to the behaviorist theories, Watson's stimulus-response, Pavlov's conditioning, Skinner's trial-and-error and reinforcement. This current has gradually declined as cognitivist approaches and neuroscience have progressed, opening the neural black box and proposing more complete explanations. The following remarks are in line with this last perspective.

It is not the DNA memory that changes in the bird that has located a food source, but a second memory, neural, informed by its sensory capacities. The more the triptych formed by the bird's senses, its nervous system and its motor means help it to detect, locate and find a food site, and then to abandon it when it is exhausted, the better the bird will be equipped to survive. This dynamic of neuronal or sensorimotor learning is grafted on a genomic base. However, its tempo, directly connected to life experiences, differs from that of biological knowledge, which is slower, as it depends in particular on mutations, selections and genetic drifts. The nervous system quickly processes sensory data and draws behavioral conclusions. The gain is an experiential adjustment of behaviors, more rapid and subtle than genetic mutations and epigenetic modulations. The key condition is the plasticity of the recordings. The nervous system must be partly pre-shaped to know how to receive, process and send information, and partly indeterminate, to accommodate the diversity and instability of life settings.

Behavior, informed by life experiences, becomes a driving force of evolution, assisting in retaining neutral or advantageous mutations related to perceptual (tactile, visual, auditory...), neural (processing modalities) and motor (jaws, legs, wings, fins...) capacities (Piaget, 1978; Richerson & Boyd, 2005). Each pluricellular species defines itself according to this triptych and constructs in its own way the categories of space and time, form and light,

color and sound, force and gravity, taste, smell, etc. Each species and each individual of each species builds a different sensorimotor world.

3.1 Neural codes and plastic engrams: the primary artifacts of the sensorimotor

The neural memory, a sensorimotor equivalent of DNA memory, is highly plastic; it consists of *coded inscriptions* or *engrams*, which can be modified, confirmed or erased. The mechanism that allows such sensitivity to perceptions and activities is based on the modulations of the interactions between neurons, cells that are specialized in communication (on the origin of neurons, Musser et al., 2021). Since Ramón y Cajal (1894), reinforced by Hebb (1949) and confirmed by Kandel (2001), research has established and clarified that learning involves changes in neuronal connections. This is particularly true during the development of young subjects. For example, animals reared in an understimulated environment have fewer synapses and a reduced cortex compared to others reared in a richer environment (Rose et al., 2005). Processes, from perception to motor commands through neural processing, have so far yielded only part of their secrets. A brief review is necessary to recall a few basic points and to ward off simplistic schemes derived from computer science.

Sensory neurons record messages from sensory sensors and transmit them to the central nervous system by means of electrical signals. These electrical impulses, called *action potentials* or *spikes*, consist of brief changes in membrane potential, sometimes up to a hundred per second. Neurons are connected by thousands of *synapses*, consisting of a *presynaptic element* (with vesicles containing neurotransmitters), and a *postsynaptic element* (with receptors located on the neighboring neuron), which are separated by a tiny gap, the *synaptic cleft*. The action potentials provoke the injection of neurotransmitters into the synaptic cleft. These molecules are, in whole or in part, captured by post-synaptic receptors. These receptors in turn translate the chemical signals into positive or negative electrical charges. The receiving neurons each perform the sum of these multiple inputs; new action potentials will only be emitted if this sum exceeds a certain threshold. What happens in the synaptic clefts is therefore eminently important to understand neural dynamics. This communicative process, typical of chemo-electric neurons, is both stochastic (inter-neuronal molecules) and discrete (electrical discharges). Some purely electrical neurons are characterized by ultrarapid and direct connections (*gap-junctions*); they are very useful when, for example, motor cells are mobilized in unison.

Another important aspect is related to the cerebral processes of decomposition-recomposition. Sensory receptors split perceptions into multiple aspects (sound into frequencies, rhythms, timbres; space into edges, speed, orientation; facial features into distances between different points, etc.). These aspects are then processed by specialized neurons and neural circuits, to finally become the object of a synthetic recomposition. This mechanism allows to face the infinite diversity of multi-sensory perceptive configurations: rather than recording singular tables, which would very quickly clog the brain, this process records dimensions which, by combination, make it possible to reconstitute innumerable configurations. This analytical approach requires a wide variety of neurons, some dedicated to analyze and others to synthesize. Researchers have distinguished over a thousand types of neurons in the mouse neocortex (Shepherd et al., 2019) and over 130 types of neurons in the chick retina alone (Yamagata et al., 2021). This neuronal diversity also involves synapses; concerning this point, the inventory is still far from complete (Cizeron et al., 2020; Scholl & Fitzpatrick, 2020).

Identifying how neurons connect to each other through their synapses (connectome) is a necessary step to understanding brain activity. However, drawing such a map quickly proves insufficient for a number of reasons of which the most important are:

- the same sensory stimuli result in surprisingly different patterns of action potentials, attributable to previous learning and to "noise" of various origins;
- the numerous types of neurons and synapses multiply the complexity of neural circuits;
- besides the best known and most studied *neurotransmitters* (glutamate, serotonin, acetylcholine, dopamine, oxytocin...), hundreds of other molecules circulate in the nervous system and are often co-transmitted (Svensson et al., 2019);

- in synaptic clefts, fluxes are not uniform but are modulated by hundreds of interacting proteins, or *interactomes*. Unraveling these interactions and their links to ongoing activities presents daunting challenges (Rudenko, 2019; Hart, 2019; Südhof, 2018);
- a single neuron may participate in multiple neural networks corresponding to different activities. Not only does the geography of its synaptic connections change, but also, it seems, the properties of these connections (Spitzer, 2017; Stefanini et al., 2020);
- the neural landscape shifts continually and is therefore difficult to pin down. Most neurons change 5-10% of their synapses monthly; for some neurons, the percentage can be as high as 40% (De Paola et al., 2006). *Synaptomes*, which include all synapses, their types and locations, are permanently transformed (Cizeron et al., 2020);
- information does not always flow in the same usual direction, from presynaptic to postsynaptic: there are also *antidromic action potentials*, which move in the opposite direction and play a role in neuronal excitability (Trigo, 2019);
- brain processing of information involves not only neurons, but also, to a lesser extent, other brain cells, the glial cells. For many years, researchers have confined the latter to assistance functions, energy supply, waste evacuation, immune surveillance, etc. However, several recent studies emphasize their participation in information processing (Henneberger et al., 2020; Fields & Bukalo, 2020; Li et al., 2020; Taylor et al. 2021);
- finally, learning changes the landscape of neuronal connections and thus the processing of new information.

Assuming that there is an identical way of coding sensory inputs, this code will be applied differently depending on the situation, previous learnings, filters mobilized according to the goal pursued, etc. The computations that accompany *in situ* the unfolding of a behavior will therefore not be the same either.

Under these conditions, cracking the neural codes related to various types of activity (displacement, identification of a generic or singular shape, etc.) is a true challenge. An important step in this direction was made when the types of neurons involved in mental mapping were identified (Moser & Moser, 2016). Another breakthrough took place when the registration of facial dimensions were understood (Chang & Tsao, 2017). However, the details of the exchanges within the neural circuits involved, as well as the synthesis of the results between the different circuits mobilized, remain to be clarified; this requires the development of particular statistical tools, inspired in particular by graph theory.

In short, the dynamics of learning are based on neuronal plasticity, which is much more refined and sensitive than genomic plasticity. At the heart of the sensorimotor triptych, engrams are created and modified at the crossroads of genomic inheritance and life experiences. Each brain is unique (Van de Ville et al., 2021). Behavioral plasticity is rooted in variations in neuronal exchanges. These variations do not proceed from a universal code analogous to the genomic code. Rather, the primary artifact of sensorimotor behavior refers to a set of processes that include: 1) the coded decomposition of perceptions, which takes into account previous learning; 2) brain processing, which relates new information *in situ* to stored engrams; and 3) the behavioral response and its outcome, which induces eventual adaptation of stored elements.

3.2 *Caenorhabditis elegans*: habituation with twenty neurons

Starting from the simplest to highlight the most complex is a strategy widely used in science. Many researchers have taken this path, focusing on relatively "simple" animals such as the aplysia, the zebrafish or the drosophila. A few research results concerning the small worm *Caenorhabditis elegans* will suffice here to give an idea of the complexity of a learning process that is considered to be a basic one. With its 302 neurons (118 distinct types) and a lifespan of about 20 days, this small worm learns very quickly to stop reacting to harmless stimuli (habituation); moreover, it is also capable of associative learning of variable duration.

Habituation is a universal form of non-associative learning which is of extreme importance since it allows the subject to ignore neutral stimuli in order to concentrate on vital stimuli. Its dysfunctions are related to diseases

(Kepler et al., 2020; McDiarmid et al., 2020). It was first attributed, somewhat trivially, to a depression of excitatory neurotransmission and/or an increase in inhibitory neurotransmission. Current research has been drawing a much more sophisticated picture, highlighting a plurality of habituations mobilizing variable neural mechanisms depending on the nature of the stimuli and the situation.

The habituation to tapping on a *C. elegans* petri dish, even if it passes through the same very limited network of about twenty neurons, solicit synapses, their neurotransmitters and their receptors differently, depending on the rhythm and force of the tapping, the proximity of food or aversive products, the diversity of stimuli during development, and probably on hunger, age, circadian rhythms, etc. The duration, frequency and speed of habituation mobilize different genes. In brief, habituation is multiple and proceeds from equally multiple mechanisms. This learning, presumed to be the simplest and most basic in life, takes complex paths, combining with multisensory perceptions and processing including proprioception (Ardiel et al., 2017; McDiarmid et al., 2019; Gourgou et al., 2021). These links apparently increase plasticity and adaptability.

In short, research on this small worm, half of whose 19'000 genes are found among the 23'000 genes in human DNA, tells us that: - changes in behavior resulting from experience are the norm in *C. elegans*; - this plasticity relies on the combination of a few neurons and types of neurons integrated into very limited networks; - though rudimentary, these neural structures suffice to allow for a wide variety of learning possibilities that are disconcertingly complex. Work on aplysia and zebrafish leads to similar findings (Randlett et al., 2019).

Sensorimotor learning involves fine-grained and differentiated plasticity. *C. elegans* has only mechanosensory and chemosensory neurons; it lacks sight and hearing. Evidently, the increase in perceptive sources and brain mass multiplies the possible crossings and processings. Learning therefore refers to neural processes of great complexity. Neurosciences are not at the end of their task.

3.3 Social learning and culture

Each species develops itself and creates its world by finding its place in the biosphere. And each individual of each species follows more or less singular experiential paths. It is impossible to relate here even in part such immense neurobiological and behavioral diversity. We refer therefore only to the research on *social learning* and *animal cultures*.

Living beings learn not only from their direct relationships with nature, but also from their interactions with others and, in particular, with their fellow creatures. Social learning is the sensorimotor equivalent of gene transfer in genomic learning. In recent decades, ethologists have discovered that this mode of learning is much more widespread in non-humans than they had first thought. It is now well documented, through observations and experiments in mammals (Thornton & Clutton-Brock, 2011), including primates (Whiten, 2012, 2021; Whiten et al., 2017; Fischer & Hammerschmidt, 2019) and cetaceans (Whitehead & Rendell, 2015; Garland et al., 2017), birds (Fisher & Hinde, 1949; Thorpe, 1951; Marler & Tamura, 1962; Logue & Leca, 2020), fishes (Laland et al., 2011), and insects (Danchin et al., 2018; Bridges & Chittka, 2019; Alem et al., 2016). It takes place in critical areas of activity such as feeding, reproduction, predator avoidance, vocal communication and migrations (Hoppitt & Laland, 2013).

If social learning concerns a relationship with the natural environment, it is at the root of a technical culture. And if it concerns relationships with others, it gives rise to socio-cultural features. Cultural biologists distinguish between degrees of culture. According to Heyes (2020), the first degree, the most basic and widespread, refers to the learning of a behavior by imitation of one or more conspecifics (horizontal transmission). This is for example the case of female grouse, which prefer to mate with males with which they have seen other females mate.

The second degree of culture adds a condition: the behavior must not only be socially learned, but also typical of a group as a whole, as well as rare or absent in other groups of the same species (Laland & Janik, 2006). This requires intergenerational transmission, also known as vertical transmission. Most often, only one behavior per

species is involved; however, in chimpanzees, groups studied differed by up to twenty several technical or cultural traits (Boesch et al., 2020).

The third level of culture adds the criterion of accumulation, following a recurrent four-step pattern: behavioral change, diffusion within the group through social learning, improved performance, the entire process serving as the underpinning for another behavioral change, etc. (Mesoudi & Thornton, 2018). The third stage would be typical of human culture and would manifest itself both in the progressive complexification of language and in the combination of tools and manufacturing processes.

Over the past three decades or so, culture, defined as the creation and inheritance of a set of behavioral traditions through social learning (Whiten et al., 1999; Whiten, 2021), has become a major topic of research in ethology, breaking down an age-old wall between the humanities and natural sciences. The *Cultural Evolution Society*, founded in 2015, brings together hundreds of biologists interested in studying cultural dynamics. Some of them specifically examine the effects of cultural transmission on the genetics of populations, with the hope of unveiling gene-culture coevolutions that include cultural selective pressures (Whitehead et al., 2019; Creighton et al., 2021). Social learning opens a new self-artifactual window to the evolution process, that of behavioral convergences achieved through imitation mobilizing sensorimotor capacities. This opening obviously concerns communication.

3.4 Culture and communication

Besides hereditary signals, whose evolution is supposed to be subject to the selective pressure of their own effectiveness, interpersonal, group and symbolic signals (Fröhlich & Van Schaik, 2020) correspond to the three cultural degrees described above. Interpersonal signals, invented and co-learned by two or more subjects, most often proceed from what ethologists have called *ontogenetic ritualization* (Tomasello, 2008): a gesture, a vocalization or a facial expression are, by repetition, associated with a meaning shared by a few relatives. Beyond that, signals learned and shared by a group as a whole have received much attention since the discovery in California in the early 1960s of dialects in a passerine bird, the white-crowned sparrow (Marler & Tamura, 1962). At a distance of about 20 km, the birds' songs differed from each other. This discovery was a bombshell and has generated a great deal of research (Podos & Warren, 2007). Not only can some birds learn variations from a conspecific, or even imitate other species, but social learning can result in vocal subcultures. In humans, symbolic signals or signs, largely arbitrary with respect to their meanings, make dialects both common and inevitable, with the addition of other features that ethologists are trying to find the premises of in non-human animals.

The ability to learn and modify vocalizations, which is very present in songbirds, especially passerines, is rather rare in mammals, with the exception of dolphins, some whales, bats, some primates, and humans (Mathevon, 2021). Learning occurs by listening to acoustic patterns, forming auditory patterns, and then learning to produce vocalizations that match the patterns. This auditory feedback is absent from more limited, highly heritable vocal learnings (Tyack, 2019; Nieder & Mooney, 2019). Songs typically consist of short sound elements (syllables) aligned in exact order and timing. Therefore, the learner must learn to form the individual syllables, ordering them in temporal sequences (Clayton, 2019). This ability may be lifelong or limited in time (Genzel et al., 2019).

Songs signal membership to a particular species or subculture and sometimes denote the identity of the sender (Spillmann et al., 2010); they may also signify that they are directed at singular receivers, such as mating partners or competitors. For example, each bottlenose dolphin (*Tursiops truncatus*) develops its own identity signal that is remembered by others, thus allowing members of a group to name and address each other (Griesser et al., 2018; King & Janik, 2013).

In most cases, only certain elements of a song are changed during intergenerational transmissions (Lachlan et al., 2018). These shifts can be accompanied by geographic shifts and generate dialects that are increasingly distant from each other, to the point where birds no longer recognize each other and pair up (Irwin et al., 2001; Otter et al., 2020). Transformations can be important and rapid, as for example in humpback whales (Noad et al., 2000; Garland et al., 2013, 2017). Change and conformity are not necessarily mutually exclusive, as the propagation of

a change requires its conforming expanded reproduction (Whiten et al., 2005). Research is well underway on the causes of these cultural dynamics (Van Schaik, 2012; Garland & McGregor, 2020; Aplin et al., 2015).

3.5 Phonetic and syntactic combinations

By combining a limited number of sounds (phonemes), human language gives rise to a considerable number of words (morphemes), and by combining these syntactically, it opens up a infinite number of sentences. For some theorists, these combinatorial abilities are unique to humans (Chomsky, 1999; Bolhuis et al., 2014, 2018), whereas for others, they are already preformed in non-humans.

Elementary syntactic abilities have, for example, been demonstrated in the alarm calls and long calls of some primates (Crockford & Boesch, 2005; Clarke et al., 2006; Clay & Zuberbühler, 2011; Zuberbühler, 2012; Ouattara et al., 2009; Candiotti et al., 2012; Collier et al., 2020). The same has been observed in some passerines (Townsend et al., 2018; Engesser & Townsend, 2019; Suzuki et al., 2016, 2017; Walsh et al., 2019). The equivalent of our phonemes (meaningless sound units that enter into word formation) has also been spotted in two songs of a passerine bird (Engesser et al., 2016, 2019). For two experts in these matters, the most remarkable animal syntaxes differ from human syntax only in degree of complexity, not in kind (Suzuki & Zuberbühler, 2019).

Lexical and syntactic combinations are related to cognitive abilities. Research on this point includes intentionality, which is considered by Grice (1957) as specific to human language. Yet it is now established that great apes and also some songbirds communicate intentionally (Hage et al., 2013; Townsend et al., 2017; Pennartz et al., 2019; Graham et al., 2019; Heesen et al., 2020; Kabadayi & Osvath, 2017). Other research focuses on categorization abilities, which are essential for constructing words and sentences. As soon as sensorimotor categories are coupled with representations, they are ready for some form of symbolic language. The breaking of nuts by chimpanzees helps to illustrate this. Such an operation requires representation, anticipation and training. It refers to perceptual categories (of more or less skilled subjects, of nuts, of types of anvil and striking stones, of orientation and strength of blows) that are organized into a kind of pre-symbolic syntax of action, ready to accommodate the universal language schema which articulates actors, actions and patients (Fitch, 2019, Ten Cate, 2018).

Languages based on sensorimotor social learning are social artifacts. They open to the self-construction of whole-beings, whose potential explodes with symbolic learning.

3.5 In summary...

Sensorimotor learning is the provider of a fine and rapid adaptive plasticity, based on a concomitant plasticity of neuronal connections. It also opens a window to social learning. Learning from others allows the construction of behavioral convergences, that is to say the first steps of culture, both in the relationship with nature and with others. These cultural whole-beings also concern the communicational dimension, and many ethologists now hypothesize that there is a difference in degree rather in kind between the structure of certain animal languages and the combinatorics of human language.

4. Symbolic learning

Research on social learning and animal cultures underlines the evolutionary continuity between animals, humans and non-humans. The human exception looks less and less like a thunderclap in a sensorimotor sky dedicated to perceptive immediacy and instinctive reactions. In the same way that there is a tight articulation between the genomic and the sensorimotor, there is a close entanglement between the latter and the symbolic. This is not really surprising since symbolic codes appear at the intersection of a double development, that of the sensorimotor capacities – and in particular of the auditory and phonatory – and that of the capacities of representation. Research in child psychology underlines the sensorimotor rooting of the symbolic. The following remarks are limited to the development of language and technique, artifacts that are linked, while hypotheses concerning the neural bases of representation, language and consciousness are left aside.

4.1 From sensorimotor social learning to symbolic social learning

No neural pre-wiring seems to favor the learning of any particular language. All human infants are likely to learn one or more of the 6,000 or so known languages and to master the dozens of phonemes that each one mobilizes out of the 800 known worldwide. While still in their mother's wombs, and later as infants, they become familiar with the sounds, their frequencies and associations (Le Calvez, Pepperkamp & Dupoux, 2007). They register regularities and irregularities of all kinds (Rochat, 2004); their neural networks are formed as they become imbued with the sensory features of their language and its corresponding social and natural environment.

It is on this basis that the symbolic takes root. Initially, representations are attached to perceptive categories: objects continue to exist even if the child does not perceive them. This acquisition of object permanence is progressive and can be broken down into several stages shared to varying degrees by many animal species (Piaget 1954, Baillargeon et al., 1985). Little by little, a representational world is formed above the perceptual categories. Over time, the child learns to associate acoustic images with the representations of objects, i.e. to understand and formulate signs. He is then confronted by a great challenge, that of articulating two worlds, a representational world whose existence is manifested at will by language, and a world of practical effectuation which is profoundly transformed. In the first world, virtual reversibility reigns (we can move freely in time and space, transfigure our motor and perceptive capacities, etc.), whereas the second is heavily marked by irreversibility (even if we can sometimes repair a broken pot, it is impossible to erase the event that took place). This duality, which is the starting point of a later differentiation of social worlds, is likely to feed both inventiveness and instability that may contradict the dominant norms and rules of a given cultural community. In order to transmit and regulate these fragile whole-beings composed of several worlds, social learning is no longer sufficient: educational support is necessary.

4.2 Teaching

Among our animal friends, social learning is central, whereas education is the poor relative. In order to identify the prefigurations of educational relationships in animals, Caro and Hauser (1992, 153) have proposed an objectivist definition of teaching, thus bypassing the dimension of intentionality that remains difficult to establish. For these authors, an actor A teaches – by encouraging, punishing, providing an experience or offering an example – “if he modifies his behavior only in the presence of a naïve observer, B [the student], at some cost or at least without obtaining an immediate benefit for himself”.

Other researchers (Hoppitt et al., 2008; Hoppitt & Laland, 2013) suggest that teaching postures build on and exceed *inadvertent social learning*, in which the model acts in pursuit of its own ends, without regard for potential learners who may be inspired by them. The teaching dimension can modify this "pure" social learning in several ways:

- rather than being followed by chance when moving to a site of interest, the possessor of knowledge can ensure that it/he is followed by a naïve subject or subjects (in *Temnothorax albipenni* ants, tandems are thus observed where an informed subject leads a naïve subject to a food source, thus inducing learning) (Franks & Richardson, 2006); the dance of bees, which transforms ignorant bystanders into informed subjects of an interesting food location, seems to belong to the same category, a mix of genetically recorded mechanisms and induced learning;
- rather than being inadvertently exposed to a relationship between two stimuli, the learner may be introduced to such a relationship through repetitions (blackbirds exposing chicks to the relationship between one type of call, the "purr" call, and food);
- rather than simply being observed performing an action and subsequently imitated, the subject who is the repository of the skill may set itself up as a demonstrator (a bird singing longer than usual in front of an apprentice) (Beecher & Akçay, 2020; Taylor, 2021);
- rather than unknowingly providing a learning opportunity, tutors can tailor their products to their students' learning capacities (meerkats, cats and cheetahs bring prey that is sometimes dead, sometimes injured, and sometimes intact back to their cubs, depending on the age of the young, thus providing opportunities for them to exercise their hunting dispositions).

In short, inadvertent social learning appears to be the first stage of cultural transmission, with educational behaviors reducing inadvertence and increasing the chances of transmission. The human species has progressively increased the educational pole as cultural diversity and arbitrariness have developed. The socio-cognitive complexity of learning has also increased in understanding and guidance (Bandura, 1977). The decisive mutation comes from language, a formidable tool of transmission of the technical, political and cultural assets. The characteristics of the sign help to understand the extent of the issues at stake.

4.3 Symbolic codes, learning and education

The arbitrariness of the sign opens up an indefinite number of possible languages, each with its own code and its own way of articulating concepts (signifieds) and acoustic images (signifiers). Signs are based on socially shared mental representations; they are therefore subject to norms of use that are imposed during learning. These norms concern the lexicon as well as the syntactic rules and their numerous exceptions.

This normative dimension is reinforced by the fact that the sign is not bound to its external "real" referent (the object or set of objects designated by the sign), thus creating the possibility of erroneous or deliberately distorted, even deceptive, constructions of reality. It follows that socially shared meanings are indissolubly linked to the virtuality of non-sharing. Such a situation threatens communication and calls for a set of regulations that must be transmitted to keep it within acceptable limits.

As the sign is not indissolubly linked to a real referent, it allows : - to lie; - to invent imaginary fictional referents; - to create sacred mythical referents; - to conceive legendary or utopian referents. It thus leads to plural worlds, forming symbolic universes specific to each culture. Learning to navigate in this plurality of worlds is not easy: children have difficulty in distinguishing and navigating between reality, representation, fiction, lies, truth, myth and utopia; multiple learning and interpretative uncertainties continue throughout life.

Languages are neither stable nor homogeneous. They manifest a permanent heterogeneity in the form of lexical and syntactic variations, dialects, accents, expressions, networks of meanings. This heterogeneity can be accentuated by geography, regional autonomy, the density of exchanges, the division of labor and social classes. Normative tensions around language thus tend to affect all exchanges.

Finally, in symbolic societies, the signifier-signified relationship tends to extend to all perceptible objects and behaviors to which the actors give specific meanings. Everything becomes a potential sign: social position, sex, race, wealth, profession, clothing, food, habitat, etc. Linguistics extends into semiotics. And from there, the differences and normative tensions extend to the entire society, structuring social relations and social distinctions. The processes of individuation present at the genomic and sensorimotor levels receive a new impulse, the symbolic identity being able to vary during the course of life, sometimes in spectacular ways.

Language associated to symbolic representation, constitutes the *artefact princeps* from which proceed: the multiple languages and cultures within the only human species, the different social worlds within each culture, the systematic guidance of the social learning and the omnipresent normative regulations. The external proliferation of technical instruments also seems to be linked to these developments.

4.4 Instrumental externalization and learning

Starting with Darwin himself, the hypothesis of evolutionary connections between language, gesture and tools has been proposed and defended on numerous occasions (Leroi-Gourhan, 1943; Stout & Chaminade, 2012), as the combinatorics of language and of tools may proceed from similar, or even common, mechanisms. The question remains open, reinforced by the existence of a pre-symbolic syntax of action in terms of actors, actions, and patients, reinforced also by neuroscientific research that has uncovered significant neural overlaps between practical actions and language expressions which designate them (Boulenger, 2006; Thibault et al., 2021; Osieurak et al., 2021). Moreover, the effort to produce compliant songs or signifiers, that is, artifacts in terms of sound waves, is not unlike the effort to produce concrete artifacts.

Let's go back to the example of breaking nuts or stones. To crack nuts, chimpanzees combine two external objects assigned to the role of tools, a stone that acts as a hammer and another that serves as an anvil. To break stones, *Sapajus libidinosus* and *Macaca fascicularis* monkeys combine a stone acting as a hammer and another stone intended to be struck to obtain a number of tool-chips (Proffitt et al., 2016, 2023; Falótico et al., 2019). In both cases, we can speak of duplication of instrumental externalization. The stone assigned to the role of tool is an intelligent externalization in an object separated from the body. This object is integrated by the actor in the anticipated unfolding of a transformative action (breaking the nut, obtaining a chip), in other words, in an embodied syntax of the action. The intelligent processes of incorporation (representations and acquired skills) and externalization (execution) of the action are correlative to each other. The chimpanzee's aim and gestures must impart sufficient force to the stone to overcome the resistance of the nut. The behavioral information of the living can then be seen as imposing itself on the information of the non-living, thanks to a technical mediation.

Carved stone, which implies knowledge of the materials and learned skills, is the best marker of early humanity that we dispose of. The oldest specimens discovered are 3.4 million years old and are notably attributed to Australopithecines (Harmand S. et al., 2015). When our ancestor attaches a carved stone to a wooden handle to make a carved stone axe, we can say that he is joining two action phrases to form a technical mini-text. Articulating two artifact-tools suggests the birth of a technical reflexivity that stimulates inventions and their reciprocal combinations. Inventions, combinations and transmissions are at the core of the logic of accumulation.

If the tool is composite, several specialized craftsmen can make the various components separately. The different knowledge and skills involved can thus be subdivided. On the other hand, using a tool skillfully does not necessarily mean mastering its manufacture. A second division of labor, with its correlative learning, which will intensify with the proliferation of tools, can thus be established. From then on, it is no longer enough to think of the processes of incorporation/externalization on an individual scale, but to consider their distribution on the collective scale of a society.

4.5 The machine

Already present in Antiquity, the mill is one of the first machines resulting from human engineering. It assigns to the tool a stable mechanical functioning that no longer needs the hand to accomplish what is expected of it (the crushing of grain, a physical information). The sensorimotor and symbolic information is externalized in the mechanism of the mill. Later, the replacement of energy of biological origin by energy of physical origin, will allow to obtain an automatic machine. Learning the correct grinding gesture becomes obsolete; it is replaced by learning how to build the mill and to maintain it.

Let us take a leap forward: the punched cards of the Jacquard loom are the ancestors of digital algorithms, because, thanks to a binary code (one hole = raised warp thread, no hole = untouched warp thread), they allow to weave a large variety of complex patterns without the intervention of the weaver. A coded knowledge in punched cardboard, a symbolic artifact – the primitive ancestor of the computer – has replaced the weaver's knowledge and drives the machine.

5. Conclusions: the technical epiphany and learning

Learning by self-transformation at the molecular level becomes possible with the genetic code. Learning by self-constructing multiple sensory and motor worlds according to species becomes possible with neural codes. With the emergence of symbolic codes and languages, learning by deploying a plurality of cultures within the same species and a plurality of worlds within each culture becomes the norm. These different types of learning, in the sense of the evolutionary self-construction of a species, are associated with individual and social learning, sometimes through mutations, drifts and transfers, sometimes through behavioral variations or symbolic constructions. In a similar way to physics, which must reconcile the properties of particles and the evolution of the universe, the life sciences, from biology to sociology, must constantly re-articulate individual and collective dynamics.

From the cellular manufacturing of proteins guided by genes (more precisely messenger RNAs derived from genes) to the manufacturing of objects guided by digital algorithms, it is possible to speak of a technical epiphany

marked by successive emergences. The concept of emergence applies to evolutionary processes characterized by continuities and ruptures, and in particular by the irreducibility of new dynamics to old ones. This anti-reductionist vision is partly hypothetical and subject to debate, since we must acknowledge that knowledge of the transitional processes that have accompanied each stage remains partial.

Reflecting upon learning today requires a re-evaluation, in the sense of concepts that are sufficiently broad to encompass the living world as a whole and sufficiently differentiable to reflect the new dynamics that have marked its unfolding. The concepts of information, algorithm and artefact outlined above meet this requirement. Their extension implies that of the concepts of technique and of learning. Contrary to the elements that compose the physical-chemical, which only associate under certain physical conditions, all living beings manufacture and learn. It is therefore necessary to pay great attention to the rupture between the living and the non-living: - to the difference between physical information and information in the sense of biological knowledge; - to the difference between physical morphogenesis and morphogenesis of the living, the latter producing artefacts according to need, by mobilizing and adapting knowledge, notably in algorithmic form. For each level of learning, information, algorithm and artefact receive new determinations and open up new horizons. This said, the present text remains fragmentary, its goal being to present a line of reflection.

The digital revolution is part of the technical epiphany of the living. With its own algorithmic tools, it guides automated processes, ensures and analyzes continuous flows of information, weakens or reinforces control and regulation devices, opens up the translation of the whole *in vivo* into *in silico*, and finally affects the morphogenesis of individual and collective subjects. A new global learning dynamic is emerging, which will probably cause another rupture in the evolution of the human species and its relationship with the living and the non-living.

References

- Aguilar, L., Bennati, S. & Helbing, D. (2019). How learning can change the course of evolution. *PLoS One*, *14*(9), e0219502
- Alem, S., Perry, C. J., Zhu, X., Loukola, O. J., Ingraham, T., Søvik, E. & Chittka, L. (2016). Associative mechanisms allow for social learning and cultural transmission of string pulling in an insect. *PLoS Biology*, *14*(10), e1002564
- Aplin, L. M., Farine, D. R., Morand-Ferron, J., Cockburn, A., Thornton, A. & Sheldon, B. C. (2015). Experimentally induced innovations lead to persistent culture via conformity in wild birds. *Nature*, *518*, 538–541
- Ardiel, E. L., Yul, A. L., Giles, A. & Rankin, C. H. (2017). Habituation as an adaptive shift in response strategy mediated by neuropeptides. *Nature Partner Journal Science of Learning*, *2*(9)
- Aristotle. (1997). *The Nicomachean Ethics*. Wordsworth Editions Ltd
- Baillargeon, R., Spelke, E. S. & Wasserman, S. (1985). Object permanence in five-month-old infants. *Cognition*, *20*, 191-208
- Bandura, A. (1977). *Social Learning Theory*. Prentice-Hall
- Bates, M. J. (2005). Information and knowledge: An evolutionary framework for information science. *Information Research*, *10*(4)
- Bates, M. J. (2006). Fundamental forms of information. *Journal of the American Society for Information Science and Technology*, *57*(8), 1033–1045
- Baugh, L. & Troy, D. (2020). Nongenetic inheritance and multigenerational plasticity in the nematode *C. elegans*. *ELife*, *9*, e58498
- Beck, B. (1980). *Animal Tool Behavior*. Garland STPM Press
- Beecher, M. D. & Akçay, Ç. (2020). Social factors in bird-song development: Learning to sing with friends and rivals. *Learning & Behavior*, *49*, 137-149
- Boesch, C., Kalan, A. K., Mundry, R., Arandjelovic, M., Pika, S., Dieguez, P., Ayuk Ayimisin, E., Barciela, A., Coupland, C., Ebot Egbe, V., Eno-Nku, M., Fay, J. M., Fine, D., Hernandez Aguilar, R. A., Hermans, V., Kadam, P., Kambi, M., Llana, M., Maretta, G. & Morgan, D. (2020). Chimpanzee ethnography reveals unexpected cultural diversity. *Nature Human Behavior*, *4*, 910-916
- Bolhuis, J. J., Beckers, G. J. L., Huybregts, M. A. C., Berwick, R. C. & Everaert, M. B. H. (2018). Meaningful syntactic structure in songbird vocalizations? *PLoS Biology*, *16*(6), e2005157
- Bolhuis, J. J., Tattersall, I., Chomsky, N. & Berwick, R. C. (2014). How could language have evolved? *PLoS Biology*, *12*(8), e1001934

- Borgo, S., Spagnoletti, N., Vieu, L., & Visalberghi, E. (2013). Artifact and artifact categorization: Comparing humans and capuchin monkeys. *Review of Philosophy and Psychology*, 4(3), 375-389
- Boulenger, V. (2006). *Le Langage et l'Action : Dynamique des liens fonctionnels unissant verbes d'action et contrôle moteur* [Unpublished PhD thesis]. University of Lyon II
- Boussard, A., Delescluse, J., Pérez-Escudero, A. & Dussutour, A. (2019). Memory inception and preservation in slime moulds: The quest for a common mechanism. *Philosophical Transactions of the Royal Society B*, 374, 20180368
- Bridges, A. D. & Chittka, L. (2019). Animal behaviour: Conformity and the beginnings of culture in an insect. *Current Biology*, 29(5), R167-R169
- Brillouin, L. (1956). *Science and Information Theory*. Academic Press
- Burton, N. O., Willis, A., Fisher, K., Braukmann, F., Price, J., Stevens, L., Baugh, L. R., Reinke, A. & Miska, E. A. (2021). Intergenerational adaptations to stress are evolutionarily conserved, stress-specific, and have deleterious trade-offs. *Elife*, 10, e73425
- Candiotti, A., Zuberbühler, K. & Lemasson, A. (2012). Context-related call combinations in female Diana monkeys. *Animal Cognition*, 15(3), 327-39^{SEP}
- Caro, T. M. & Hauser, M. D. (1992). Is there teaching in nonhuman animals? *The Quarterly Review of Biology*, 67, 151-174
- Chang, L. & Tsao, D. Y. (2017). The code for facial identity in the primate brain. *Cell*, 169(6), 1013-1028, e14
- Chapouthier, G. (2001). *L'Homme, ce singe en mosaïque*. Odile Jacob
- Chomsky, N. (1999). *Derivation by Phase*, Cambridge MA, MIT, Department of Linguistics
- Cizeron, M., Qiu, Z., Koniaris, B., Gokhale, R., Komiyama, N. H., Fransén, E. & Grant, S. G. N. (2020). A brainwide atlas of synapses across the mouse life span. *Science*, 369(6501), 270-275
- Clarke, E., Reichard, U. H. & Zuberbühler, K. (2006). The Syntax and Meaning of Wild Gibbon Songs. *PLoS One*, 1(1), e73
- Clay, Z. & Zuberbühler, K. (2011). Bonobos extract meaning from call sequences. *PLoS One*, 6, e18786
- Clayton, D. F. (2019). Learning birdsong by imitation. *Science*, 366(6461), 33-34
- Collier, K., Radford, A. N., Stoll, S., Watson, S. K., Manser, M. B., Bickel, B. & Townsend, S. W. (2020). Dwarf mongoose alarm calls: Investigating a complex non-human animal call. *Proceeding of the Royal Society B*, 287, 20192514
- Creighton, M., Greenberg, D., Reader, S. M. & Mooers, A. (2021). The role of behavioural flexibility in primate diversification. *Animal Behaviour*, 180(21), 269-290
- Crockford, C. & Boesch, C. (2005). Call combinations in wild chimpanzees. *Behaviour*, 142(4), 397-421
- Cuevas Badallo, A. (2019). The question of animal technical capacities. *Revista De Humanidades De Valparaíso*, 14, 139-170
- Danchin, E., Nöbel, S., Pocheville, A., Dagaëff, A.-C., Demay, L., Alphand, M., Ranty-Roby, S., Renssen, L., Van Monier, M., Gazagne, E., Allain, M. & Isabel, G. (2018). Cultural flies: Conformist social learning in fruitflies predicts long-lasting mate-choice traditions. *Science*, 362(6418), 1025-1030
- De Paola, V., Holtmaat, A., Knott, G., Song, S., Wildbrecht, L., Caroni, P. & Svoboda, K. (2006). Cell Type-Specific Structural Plasticity of Axonal Branches and Boutons in the Adult Neocortex. *Neuron*, 49(6), 861-875
- Dessalles, J.-L., Gaucherel, C. & Gouyon, P.-H. (2018). *Information, The Hidden Side of Life*. Wiley-ISTE
- Dexter, J. P., Prabakaran, S. & Gunawardena, J. (2020). A single-cell eukaryote. *Current Biology*, 30(11), 2205
- Ducatez, S., Sol, D., Sayol, F. & Lefebvre, L. (2020). Behavioural plasticity is associated with reduced extinction risk in birds. *Nature Ecology & Evolution*, 4, 788-793
- Engesser, S. & Townsend, S. W. (2019). Combinatoriality in the vocal systems of nonhuman animals. *WIREs Cognitive Science*, 10(4), e1493
- Engesser, S., Holub, J. L., O'Neill, L. G., Russell, A. F. & Townsend, S. W. (2019). Chestnut-crowned babbler calls are composed of meaningless shared building blocks. *Proceedings of the National Academy of Sciences USA*, 116(39), 19579-19584
- Engesser, S., Ridley, A. R. & Townsend, S. W. (2016). Meaningful call combinations and compositional processing in the southern pied babbler. *Proceedings of the National Academy of Sciences USA*, 113(21), 5976-5981
- Falótico, T., Proffitt, T., Ottoni, E. B. & Haslam, M. (2019). Three thousand years of wild capuchin stone tool use. *Nature Ecology & Evolution*, 3(7), 1034-1038
- Fields, R. D. & Bukalo, O. (2020). Myelin makes memories. *Nature Neurosciences*, 23, 469-470
- Fischer, J. & Hammerschmidt, K. (2019). Towards a new taxonomy of primate vocal production learning. *Philosophical Transactions of the Royal Society B*, 375, 20190045
- Fisher, J. & Hinde, R. A. (1949). The opening of milk bottles by birds. *British Birds*, 42, 347-357
- Fitch, W. T. (2019). Animal cognition and the evolution of human language: why we cannot focus solely on communication. *Philosophical Transactions of the Royal Society B*, 375, 2019046
- Fleig, P., Kramar, M., Wilczek, M. & Alim, K. (2022). Emergence of behaviour in a self-organized living matter network. *Elife*, 11, e62863

- Franks, N. & Richardson, T. (2006). Teaching in tandem-running ants. *Nature*, 439(153)
- Fröhlich, M. & Van Schaik, C. P. (2020). Must all signals be evolved? A proposal for a new classification of communicative acts. *Cognitive Science*, 11(4), e1527
- Garland, E. C. & McGregor, P. K. (2020). Cultural transmission, evolution, and revolution in vocal displays: Insights from bird and whale song. *Frontiers of Psychology*, 11, 544929
- Garland, E. C., Gedamke, J., Rekdahl, M. L., Noad, M. J., Garrigue, C. & Gales, N. (2013). Humpback whale song on the Southern Ocean feeding grounds: Implications for cultural transmission. *PLoS One*, 8(11), e79422
- Garland, E. C., Rendell, L., Lamoni, L., Poole, M. M. & Noad, M. J. (2017). Song hybridization events during revolutionary song change provide insights into cultural transmission in humpback whales. *Proceedings of the National Academy of Sciences USA*, 114(30), 7822-7829
- Genzel, D., Desai, J., Paras, E. & Yartsev, M. M. (2019). Long-term and persistent vocal plasticity in adult bats. *Nature Communication*, 10(1), 3372
- Gershman, S. J., Balbi, P. E., Gallistel, C. R. & Gunawardena, J. (2021). Reconsidering the evidence for learning in single cells. *Elife*, 10, e61907
- Gibson, D. G., Glass, J. I., Lartigue, C., Noskov, V. N., Chuang, R.-Y., Algire, M. A., Benders, G. A., Montague, M. G., Ma, L., Moodie, M. M., Merryman, C., Vashee, S., Krishnakumar, R., Assad-Garcia, N., Andrews-Pfannkoch, C., Denisova, E. A., Young, L., Qi, Z.-Q., Segall-Shapiro, T., Calvey, C. H., Pamar, P. P., Hutchison, C. A., Smith, H. O. & Venter, J.-C. (2010). Creation of a bacterial cell controlled by a chemically synthesized genome. *Science*, 329(5987), 52-56
- Gould, J. L. (2007). Animal artifacts. In E. Margolis & S. Laurence, *Creations of the mind: Theories of artifacts and their representation* (pp. 249-266). Oxford University Press
- Gourgou, E., Adiga, K., Goettemoeller, A., Chen, C. & Hsu, A.-L. (2021). *Caenorhabditis elegans* learning in a structured maze is a multisensory behavior. *iSCIENCE*, 24(4), 102284
- Graham, K. E., Wilke, C., Lahiff, N. J. & Slocombe, K. E. (2019). Scratching beneath the surface: Intentionality in great ape signal production. *Philosophical Transactions of the Royal Society B*, 375(1789), 20180403
- Grice, P. (1957). Meaning. *Philosophical Review*, 66(3), 377-388
- Griesser, M., Wheatcroft, D. & Suzuki T. (2018). From bird calls to human language: Exploring the evolutionary drivers of compositional syntax. *Current Opinion in Behavioral Sciences*, 21, 6-12
- Gupta, A., Savarese, S., Ganguli, S. & Li F.-F. (2021). Embodied intelligence via learning and evolution. *Nature Communication*, 12(5721)
- Hage, S. R., Gavrilov, N. & Nieder A. (2013). Cognitive control of distinct vocalizations in rhesus monkeys. *Journal of Cognition and Neuroscience*, 25(10), 1692-1701
- Harmand, S., Lewis, J. E., Feibel, C. S., Lepre, C. J., Prat, S., Lenoble, A., Boes, X., Quinn, R. L., Brenet, M., Arroyo, A., Taylor, N., Clément, S., Daver, G., Brugal, J.-P., Leakey, L., Mortlock, R. A., Wright, J.D., Lokorodi, S., Kirwa, C., Kent, D. V. & Roche H. (2015). 3.3-million-year-old stone tools from Lomekwi 3, West Turkana, Kenya. *Nature*, 521, 310-315
- Hart, M. P. (2019). Stress-Induced Neuron Remodeling Reveals Differential Interplay Between Neurexin and Environmental Factors in *Caenorhabditis elegans*. *Genetics*, 213(4), 1415-1430
- Heams, T. (2019). *Infravies. Le vivant sans frontières*. Seuil
- Hebb, D. O. (1949). *The Organization of Behavior. A Neuropsychological Theory*. Wiley
- Heesen, R., Bangerter, A., Zuberbühler, K., Rossano, F., Iglesias, K., Guéry, J. P. & Genty, E. (2020). Bonobos engage in joint commitment. *Science Advances*, 6(51), eabd1306
- Henneberger, C., Bard, L., Panatier, A., Reynold, J. P., Kopach, O., Medvedey, J. I., Minge, D., Herde, M. K., Anders, S., Kraev, I., Heller, J. P., Rama, S., Zeng, K., Jensen, T. P., Sanchez-Romero, I., Jackson, C. J., Janovjak, H., Otterson, O. P. & Rusakov, D. A. (2020). LTP Induction Boosts Glutamate Spillover by Driving Withdrawal of Perisynaptic Astroglia. *Neuron*, 108(5), 919-936.e11
- Heyes, C. (2020). Culture. *Current Biology*, 30, R1233-R1255
- Hoppitt, W. J. & Laland, K. N. (2013). *Social Learning: An Introduction to Mechanisms, Methods and Models*. Princeton University Press
- Hoppitt, W. J., Brown, G. R., Kendal, R., Rendell, L., Thornton, A., Webster, M. M. & Laland, K. N. (2008). Lessons from animal teaching. *Trends in Ecology and Evolution*, 23(9), 486-493
- Hosken, D. J., Hunt, J. & Wedell, N. (2019). *Genes and Behaviour. Beyond Nature-Nurture*. Wiley.
- Irwin, D., Bensch, S. & Price, T. (2001). Speciation in a ring. *Nature*, 409, 333-337
- Kabadayi, C. & Osvath, M. (2017). Ravens parallel great apes in flexible planning for tool-use and bartering. *Science*, 357(6347), 202-204
- Kandel, E. R. (2001). The molecular biology of memory storage: A dialogue between genes and synapses. *Science*, 294(5544), 1030-1038

- Kepler, L. D., McDiarmid, T. A. & Rankin, C. H. (2020). Habituation in high-throughput genetic model organisms as a tool to investigate the mechanisms of neurodevelopmental disorders. *Neurobiology of Learning and Memory*, 171, 107208
- Kimura, M. (1968). Evolutionary rate at the molecular level. *Nature*, 217, 624-628
- King, S. L. & Janik, V. M. (2013). Bottlenose dolphins can use learned vocal labels to address each other. *Proceedings of the National Academy of Sciences*, 110(32), 13216-13221
- Lachlan, R. F., Ratmann, O. & Nowicki, S. (2018). Cultural conformity generates extremely stable traditions in bird song. *Nature Communications*, 9, 2417
- Lafontaine, C. (2004). *L'Empire cybernétique*. Seuil
- Lafontaine, C. (2021). *Bio-objets. Les nouvelles frontières du vivant*. Seuil
- Laland, K. N. & Janik, V. M. (2006). The animal cultures debate. *Trends in Ecology and Evolution*, 21(10), 542-547
- Laland, K. N., Atton, N. & Webster, M. M. (2011). From fish to fashion: Experimental and theoretical insights into the evolution of culture. *Philosophical Transactions of the Royal Society B*, 366(1567), 958-968
- Le Calvez, R., Peperkamp, S. & Dupoux, E. (2007). Apprentissage bottom-up des phonèmes : Une étude computationnelle. *Mathematics and Social Sciences*, 180(4), 101-113
- Lechermeier, G. (2019). *Le Vivant. La singularité et l'universel*. Ed. Matériologiques
- Leroi-Gourhan, A. (1943). *Évolution et technique, t.1 L'homme et la matière*. Albin Michel
- Li, Y., Li, L., Wu, J., Zhu, Z., Feng, X., Qin, L., Zhu, Y., Sun, L., Liu, Y., Qiu, Z., Duan, S. & Yu, Y.-Q. (2020). Activation of astrocytes in hippocampus decreases fear memory through adenosine A1 receptors. *Elife*, 9, e57155
- Logue, D. M. & Leca, J.-B. (2020). Animal culture: How a new birdsong went viral. *Current Biology*, 30(16), R9 R957-R959
- Marler, P. & Tamura, M. (1962). Song 'dialects' in three populations of white-crowned sparrows. *The Condor*, 64(5), 368-377
- Mathevon, N. (2021). *Les Animaux parlent, sachons les écouter*. HumenSciences
- McDiarmid, T. A., Belmadani, M., Liang, J., Meili, F., Mathews, E. A., Mullen, G. P., Hendi, A., Wong, W. R., Rand, J. B., Mizumoto, K., Haas, K., Pavlidis, P. & Rankin, C. H. (2020). Systematic phenomics analysis of autism-associated genes reveals parallel networks underlying reversible impairments in habituation. *Proceedings of the National Academy of Sciences USA*, 117(1), 656-667
- McDiarmid, T. A., Yu, A. J. & Rankin, C. H. (2019). Habituation is more than learning to ignore: Multiple mechanisms serve to facilitate shifts in behavioral strategy. *BioEssays*, 41(9), 1900077
- Mesoudi, A. & Thornton, A. (2018). What is cumulative cultural evolution? *Proceeding of the Royal Society B*, 285(1880), 20180712
- Monod, J. (1972). *Chance and Necessity*. Vintage Books
- Moser, M. B. & Moser, E. (2016). Le GPS de notre cerveau. *Pour la Science*, 463, 26-34
- Musser, J. M., Schippers, K. J., Nickel, M., Mizzon, G., Kohn, A.B., Pape, C., Ronchi, P., Papadopoulos, N., Tarashansky, A. J., Hammel, J. U., Wolf, F., Liang, C., Hernández-Plaza, A., Cantalapietra, C. P., Achim, K., Schieber, N. L., Pan, L., Ruperti, F., Francis, W. R., Vargas, S., Kling, S., Renkert, M., Polikarpov, M., Bourenkov, G., Feuda, R., Gaspar, I., Burkhardt, P., Wang, B., Bork, P., Beck, M., Schneider, T. R., Kreshuk, A., Wörheide, G., Huerta-Cepas, J., Schwab, Y., Moroz, L. L. & Arendt, D. (2021). Profiling cellular diversity in sponges informs animal cell type and nervous system evolution. *Science*, 374(6568), 717-723
- Nieder, A. & Mooney, R. (2019). The neurobiology of innate, volitional^[1] and learned vocalizations in mammals and birds. *Philosophical Transactions of the Royal Society B*, 375(1789), 20190054
- Noad, M., Cato, D., Bryden, M., Jenner, M. & Jenner, K. C. S. (2000). Cultural revolution in whale songs. *Nature*, 408, 537
- Nolfi, S. & Floreano, D. (1999). Learning and evolution. *Autonomous Robots*, 7, 89-113
- O'Connor, T. & Wong, H. Y. (2015). Emergent properties. *The Stanford Encyclopedia of Philosophy*
- Otter, K. A., McKenna, A., Lazerte, S. E. & Ramsay, S. M. (2020). Continent-wide shifts in song dialects of white-throated sparrows. *Current Biology*, 30(16), 3231-3235
- Osiurak, F., Crétel, C., Uomini, N., Bryche, C., Lesourd, M. & Reynaud, M. (2021). On the neurocognitive co-evolution of tool behavior and language: Insights from the massive redeployment framework. *Topics in Cognitive Science*, 13, 684-707
- Ouattara, K., Lemasson, A. & Zuberbühler, K. (2009). Campbell's monkeys concatenate vocalizations into context-specific call sequences. *Proceedings of the National Academy of Sciences of the United States of America*, 106(51), 22026-22031
- Pennartz, C. M., Farisco, M. & Evers, K. (2019). Indicators and criteria of consciousness in animals and intelligent machines: An inside-out approach. *Frontiers in Systems Neuroscience*, 13(25)
- Petitot, A. (2020). Towards a trans-epistemic society. *Technium Social Science Journal*, 4, 120-133
- Piaget, J. (1954). *The Construction of Reality in the Child*. Basic Books
- Piaget, J. (1978). *Behavior and Evolution*. Random House

- Podos, J. & Warren, P. S. (2007). The evolution of geographic variation in birdsong. *Advances in the Study of Behavior*, 37, 403-458
- Preston, B. (1998). Cognition and tool use. *Mind and language*, 13(4), 513-547
- Proffitt, T., Luncz, L. V., Falotico, T., Ottoni, E. B., De La Torre, I. & Haslam, M. (2016). Wild monkeys flake stone tools. *Nature*, 539, 85-88
- Proffitt, T., Reeves, J. S., Braun D. R., Malaivijitnond S. & Luncz L. V. (2023). Wild macaques challenge the origin of intentional tool production. *Science Advances*, 9(10)
- Ramon y Cajal, S. (1894). *Les nouvelles idées sur la structure du système nerveux : Chez l'homme et chez les vertébrés*. C. Reinwald & Cie
- Randlett, O., Haesemeyer, M., Forkin, G., Shoenhard, H., Schier, A. F., Engert, F. & Granato, M. (2019). Distributed plasticity drives visual habituation learning in larval zebrafish. *Current Biology*, 29(8), 1337-1345.e4
- Richerson, P. J. & Boyd, R. (2005). *Not by Genes Alone: How Culture Transformed Human Evolution*. Chicago University Press
- Rochat, P. (2004). *The Infant's World*. Harvard University Presse
- Rose, J. K., Sangha, S., Rai, S., Norman, K. R. & Rankin, C. H. 2005. Decreased sensory stimulation reduces behavioral responding, retards development, and alters neuronal connectivity in *Caenorhabditis elegans*. *The Journal of Neuroscience*, 25(31), 7159-7168
- Rudenko, G. (2019). Neurexins - versatile molecular platforms in the synaptic cleft. *Current Opinion in Structural Biology*, 54,112-121
- Scholl, B. & Fitzpatrick, D. (2020). Cortical synaptic architecture supports flexible sensory computations. *Current Opinion in Neurobiology*, 64, 41-45
- Shannon, C. E. (1948). A mathematical theory of communication. *Bell System Technical Journal*, 27(3), 379-423
- Shannon, C. E. (1948). A mathematical theory of communication. *Bell System Technical Journal*, 27(4), 623-666
- Shepherd, G. M., Marengo, L., Hines, M. L., Migliore, M., McDougal, R. A., Carnevale, N. T., Newton, A. J. H., Surlles-Zeigler, M. & Ascoli, G. A. (2019). Neuron names: A gene- and property-based name format, with special reference to cortical neurons. *Frontiers of Neuroanatomy*, 13, 25
- Sperber, D. (2007). Seedless grapes: Nature and culture. In E. Margolis & S. Laurence (Eds), *Creations of the mind: Theories of artifacts and their representation* (pp. 124-137). Oxford University Press,
- Spillmann, B., Dunkel, L. P., Van Noordwijk, M. A., Amda, R. N. A., Lameira, A. R., Wich, S.A. & Van Schaik, C. P. (2010). Acoustic properties of long calls given by flanged male orang-utans (*Pongo pygmaeus wurmbii*) reflect both individual identity and context. *Ethology*, 116(5), 385-395
- Spitzer, N. C. (2017). Neurotransmitter switching in the developing and adult brain. *Annual Review of Neurosciences*, 25(40), 1-19.
- Stefanini, F., Kushnir, L., Jimenez, J. C., Jennings, J. H., Woods, N. I., Stuber, G. D., Kheirbek, M. A., Hen, R. & Fusi, S. (2020). A distributed neural code in the dentate gyrus and in CA1. *Neuron*, 107(4), 703-716, e4
- Stout, D. & Chaminade, T. (2012). Stone tools, language and the brain in human evolution. *Philosophical transactions of the Royal Society B*,367(1585), 75–87.
- Südhof, T. C. (2018). Towards an Understanding of Synapse Formation. *Neuron*, 24(100), 2, 276-293.
- Suzuki, T. N., Wheatcroft, D. & Griesser, M. (2016). Experimental evidence for compositional syntax in bird calls. *Nature Communication*, 7, 10986
- Suzuki, T. N. & Zuberbühler, K. (2019). Animal syntax. *Current Biology*, 29(14), R669-R671
- Suzuki, T. N., Wheatcroft, D. & Griesser, M. (2017). Wild birds use an ordering rule to decode novel call sequences. *Current Biology*, 27(15), 2331-2336.e3
- Svensson, E., Apergis-Schoute, J., Burnstock, G., Nusbaum, M. P., Parker, D. & Schiöth, H. B. (2019). General principles of neuronal co-transmission: Insights from multiple model systems. *Frontiers Neural Circuits*, 12, 117
- Taylor, H. (2021). Evidence for teaching in an australian songbird. *Frontiers of Psychology*, 12, 593532
- Taylor, W. W., Imhoff, B. R., Sathi, Z. S., Liu, W. Y., Garza, K. M. & Dias, B. G. (2021). Contributions of glucocorticoid receptors in cortical astrocytes to memory recall. *Learning and Memory*, 28(4), 126-133
- Ten Cate, C. (2018). The comparative study of grammar learning mechanisms: Birds as models. *Current Opinion in Behavioral Sciences*, 21, 13-18
- Thibault, S., Py, R., Gervasi, A. M., Salemme, R., Koun, E., Lövdén, M., Boulenger, V., Roy, A. C. & Brozzoli, C. (2021). Tool use and language share syntactic processes and neural patterns in the basal ganglia. *Science*, 374(6569), eabe0874
- Thornton, A. & Clutton-Brock, T. (2011). Social learning and the development of individual and group behaviour in mammal societies. *Philosophical transactions of the Royal Society B*, 366(1567), 978–987
- Thorpe, W. H. (1951). The learning abilities of birds. *Ibis*, 93(2), 252-296
- Tomasello, M. (2008). *Origins of Human Communication*. MIT press
- Townsend, S. W., Engesser, S., Stoll, S., Zuberbühler, K. & Bickel, B. (2018). Compositionality in animals and humans. *PLoS Biology*, 16(8), e2006425

- Townsend, S. W., Koski, S. E., Byrne, R. W., Slocombe, K. E., Bickel, B., Boeckle, M., Braga Goncalves, I., Burkart, J. M., Flower, T., Gaunet, F., Glock, H. J., Gruber, T., Dawam, J., Liebal, K., Linke, A., Miklósi, Á., Moore, R., Van Schaik, C. P., Stoll, S., Vail, A., Waller, B. M., Wild, M., Zuberbühler, K. & Manser, M. B. (2017). Exorcising Grice's ghost: An empirical approach to studying intentional communication in animals. *Biological reviews of the Cambridge Philosophical Society*, 92(3), 1427-1433
- Trigo, F. F. (2019). Antidromic analog signaling. *Frontiers in Cellular Neuroscience*, 13, 354
- Tyack, P. L. (2019). A taxonomy for vocal learning. *Philosophical transactions of the Royal Society B*, 375, 20180406.
- Van de Ville, D., Farouj, Y., Preti, M. G., Liégeois, R. & Amico, E. (2021). When makes you unique: Temporality of the human brain fingerprint. *Science Advances*, 7(42), eabj0751
- Van Schaik, C. P. (2012). Animal culture: Chimpanzee conformity? *Current Biology*, 22(10), R402-404
- Venter, J.-C. (2013). *Life at the Speed of Light: From the Double Helix to the Dawn of Digital Life*. Viking Books
- Walsh, S. L., Townsend, S. W., Morgan, K. & Ridley, A. R. (2019). Investigating the potential for call combinations in a lifelong vocal learner. *Ethology*, 125(6), 362-368
- Watson, J. D. & Crick, F. H. C. (1953). Molecular structure of nucleic acids. A structure for deoxyribose nucleic acid. *Nature*, 171, 737-738
- Weitekamp, C. A. & Keller, L. (2019). Genes and behaviour. In D. J. Hosken, J. Hunt & N. Wedell (Eds), *Genes and behaviour: Beyond nature-nurture* (pp. 93-109). Wiley
- Whitehead, H. & Rendell, L. (2015). *The Cultural Lives of Whales and Dolphins*. Chicago University Press
- Whitehead, H., Laland, K. N., Rendell, L., Thorogood, R. & Whiten, A. (2019). The reach of gene-culture coevolution in animals. *Nature Communications*, 10(2405)
- Whiten, A. (2012). Social learning, traditions and culture. In J. C. Mitani, J. Call, P. M. Kappeler, R. A. Palombit & J. B. Silk (Eds), *The evolution of primate societies* (pp. 681-699). Chicago University Press
- Whiten, A. (2021). The burgeoning reach of animal culture. *Science*, 372(6537), eabe6514
- Whiten, A., Ayala, F. J., Feldman, M. W. & Laland, K. N. (2017). The extension of biology through culture. *Proceedings of the National Academy of Sciences USA*, 114(30), 7775-7781
- Whiten, A., Goodall, J., McGrew, W. C., Nishida, T., Reynolds, V., Sugiyama, Y., Tutin, C. E., Wrangham, R. W. & Boesch, C. (1999). Cultures in chimpanzees. *Nature*, 399(6737), 682-685
- Whiten, A., Horner, V. & De Waal, F. B. M. (2005). Conformity to cultural norms of tool use in chimpanzees. *Nature*, 437(7059), 737-740
- Yamagata, M., Yan, W. & Sanes, J. R. (2021). A cell atlas of the chick retina based on single-cell transcriptomics. *Elife*, 10, e63907
- Zuberbühler, A. K. (2012). Call combinations in monkeys: compositional or idiomatic expressions? *Brain and Language*, 120(3), 303-309

Relational Victimization and the Psychosocial Maladjustment of Adolescents in Secondary Schools in Cameroon

Shien Vera¹, Lilian F. Wiysahnyuy², Joseph Lah Lo-oh³

¹ Faculty of Education, University of Bamenda, Cameroon. Email: shienvera1981@yahoo.com

² Higher Teacher Training College; University of Bamenda, Cameroon. Email: fai_Lilian@yahoo.com

³ University of Bamenda, Cameroon. Email: jlooh233@gmail.com

Abstract

Nowadays, the rate at which adolescent students victimized others is alarming. They engage in physical, sexual and relational victimisation which may have adverse psychosocial effects on the victims. Though they are diverse forms of victimisation among adolescents, this paper focuses on how relational victimisation (gossips, lies telling, social exclusion and rumours-mongering) leads to psychosocial maladjustment among adolescents in secondary schools in Cameroon. Purposive and stratified sampling techniques were used to select a sample which comprised of adolescent students (577), counsellors (12) and discipline masters (12) from some schools in the North West, South West, Centre, and Adamawa Region (613). The instruments used for data collection were a closed-ended questionnaire for students, a focus group discussion with students, and an interview for counsellors and discipline masters/mistresses. Data obtained were analyzed descriptively and inferentially using cross-tabulations, percentages, and multiple response sets. Findings showed that relational victimisation significantly predicts psychosocial maladjustment ($P < 0.001$). The positive sign of the correlation ($R = 0.351^{**}$) implied that adolescents are more likely to suffer from psychosocial maladjustments when there is a persistent of relational victimisation in the school environment. The findings imply that when there are persistent lies telling, gossips, rumours-mongering and exclusion from social groups, the victim turn to suffer from psychosocial maladjustment like isolation, low self esteem, fear, and depression. In order to reduce the adverse effects of relational victimisation and promote positive psychosocial maladjustments among adolescent the various a stakeholders especially parents, teachers, school administrators, and counsellors should play unique roles in organising forums to advice and counsel the students peer victimization

Keywords: Victimization, Relational Victimization, Psychosocial Maladjustment, Adolescents

1. Introduction

Relational victimisation as violence is exposure to behaviors aimed at damaging relationships or one's social reputation, such as exclusion, manipulation, and rumor-spreading, (Crick & Groppeter, 1998). It also involves being deliberately excluded from social exchanges and events, having friends threatening to withdraw their friendship if one does not comply with their demands, and other forms of social manipulation (Crick & Bigbee, 1998). Relational victimization is precarious as it may not only tarnish one's image among others but also undermine the development of effective emotion-regulation and coping strategies among affected individuals.

According to Rudolph et al. (2009), repeated harassment by peers may increase individual stress reactivity and lead to dysregulated emotions and behavior in such harassing social contexts. Relational victimization therefore hurt victims and damage not only peer relation but also individual social status (Crick & Grotpeter, 1996). Where relational victimisation is absent, quality health peer relationship provide a context in which children and adolescents learn to regulate their emotions and behaviour, manage conflicts and relate with others in more revealing and trusting ways. It is potentially clear that all the far or near end of relational victimisation is socio-emotional breakdown that the affected individuals suffer, suggesting a series of maladjustments especially psychosocial maladjustment.

A psychosocially maladjusted individual presents inability to react successfully and satisfactorily to the demands of one's social environment (Ranasinghe et al., 2017). The term maladjustment simply refers to an individual's failure to cope with the demands of the normal social environment. Maladjustment in the school environment is when students have difficulties meeting the expectations of the school context including the quality of relationships and the social structure that defines the school. In well-adjusted and adapted schools adolescents display a range of psychosocial adjustments indicators with corresponding gains in subjective wellbeing (Gutierrez & Goncalves, 2013; Vinas et al., 2015). According to Söderberg et al. (2017), aggressive behavior, anxiety and peer rejection constitute some of the most common symptoms of psychosocial maladjustment. No doubt, adolescence heralds a unique period of vulnerability to relational victimisation, but most importantly to psychosocial maladjustment indicators such as depression, anxiety, fear, social phobia, and much more. For a lot of psychosocially maladjusted adolescents, intense feelings of anxiety, decreased self-esteem from high to low, deterioration of coping skills that were once effective, and even avoidance of situations or circumstances that require adaptive behavior might be illustrative of a difficult social terrain that adolescents have to deal with.

Significant research has pointed to peer victimization in its various forms as a risk factor for increased psychosocial maladjustment among adolescents in school or social contexts. For example, Hawker & Boulton (2000) found links between peer victimization and depressive symptoms meanwhile Desjardin & Lead beater (2011) specifically found relationships between relational victimisation and depressive symptoms. Even though these findings are robust, informing practices in educational and school settings, many school children, especially adolescents are still faced with the challenge of having to deal with psychological harm resulting from relational victimisation and other forms of peer victimisation. There seems to be a two-way traffic of relational victimisation yielding a series of psychosocial maladjustment indicators that at some point also result in some form of violence. In fact, a good proportion of the violence observed across school campuses in Cameroon, especially among students may be a result of relational victimization, including exposure to behaviors aimed at damaging relationships or one's social reputation. According to Crick & Grotpeter (1996), these damaging behaviors might include gossip, lies telling, slander, exclusion, manipulation, and rumor-spreading that might sometimes actually result in affected individuals fighting back for not just their personality but also their reputation in the school community. Establishing these possible links in Cameroon school contexts where violence among students and by students is more common than ever cannot be more relevant at any other time than now. This paper therefore focuses on the possible relationships between relational victimization and the psychosocial maladjustment of adolescents in secondary schools in Cameroon.

2. Review of literature

Character defamation is a compassionate aspect with has long-lasting consequences on an individual. Relational victimisation, an aspect of peer victimisation, is a wilful attempt to damage another's self-esteem, social status, or close relationships through social exclusion, harmful gossip, or friendship manipulation (Coleman & Byrd, 2003). In the same line, Crick and Grotpeter (1996) earlier held that relational victimisation is exposure to behaviours aimed at damaging relationships or one's social reputation, such as exclusion, manipulation, and rumour-spreading. Meanwhile Reyes & Prinstein (2004) refers to relational victimization as attempts to damage the victim's social reputation within the peer group hierarchy. Right across the literature, it would appear that relational victimization is conceptually perceived in common ways with the most common characteristics being the intent to damage one's social standing in the peer group. According to Prinstein et al. (2001), relational aggression in school contexts uses a student's relationship with other teenagers, or their friendship status, as a way of inflicting

social harm such as purposefully excluding a peer from social activities, threatening to withdraw one's friendship, thereby rendering the affected individual excluded, lonely and psychologically hurting. In this light, Crick & Grotpeter (1996) found relationships between relational victimisation and depression, loneliness and self-restraint difficulties, and that relational victimisation significantly contributes to affected adolescents' distress.

As social networks and peer interactions become more sophisticated during adolescence, so too does relational victimisation. In middle adolescence, relational victimisation in adolescents is manifested when an adolescent's friendship is damaged or manipulated by a peer through behaviours such as spreading rumours, withdrawing friendship, and social exclusion (Werner & Schäfer, 1999). Research links relational victimisation within the broader peer group of classmates or schoolmates and more intimate relationships to emotional, behavioural and interpersonal maladjustments (Salmivalli et al., 2005). This explains why the exposure to relational victimisation may leave adolescents feeling socially alienated, wary, and thereby fostering negative beliefs about peers social orientation and even social interactions. Prinstein et al. (2001) note that in some circumstances, relational victimisation may partially replace overt or physical victimisation as a safer means of expressing disdain, displeasure, or anger, especially when adolescents are unable to break rules and exert physical aggression on their peers. And of course, like Creusere (1999) notes, more cognitive advances during adolescence with increased understanding of sarcasm and innuendo may allow a more refined and hurtful use of relational victimization in peer groups.

According to Heington et al. (1998), inclusion of relational victimisation in the concept of harm has also broadened the range of adolescents identified as potential targets of intervention, and most of those identified in this casting of a wider net are girls. Historically, scholars maintained that girls experienced more relational victimisation than boys (e.g. Letendre, 2007). The proliferation of the image of relationally victimised girls in the literature has falsely contributed to the perception that only girls are mean and vindictive towards each other, and that boys do not experience and/or display relationally victimised behavior (Underwood, 2007). However, recent findings indicate that relational victimisation is as prevalent among boys as in girls, uniquely affecting them in much the same ways (Prinstein et al., 2001). But other research also insist that girls experience more relational violence than boys and are equally more relationally victimised than boys (e. g. Cullerton –Sen & Crick, 2005). In addition, girls who suffer victimization at school, both overt and relational, demonstrate greater feelings of loneliness and social anxiety than boys (Storch & Masia-warner, 2004). Arguably, relational victimization like many other indicators of peer victimisation, has varied and various stages at which it occurs. It might occur higher in some stages than others. For example, rumour spreading about one's self, deliberate exclusion from social exchanges and events, having friends threaten to withdraw their friendship if one does not comply with their demands and other forms of social manipulation (Crick & Bigbee, 1998).

Relational victims are individuals who are frequent targets of others' relational victimised acts and behaviours in which relationships are used as a means of harm (Crick & Grotpeter, 1996). Arguably, relationally victimised individuals may have friends or romantic partners who control them through their friendship or romantic relationship. Examples of such control include "I am going to exclude you from groups of social exchanges if you do not comply with my demands and manipulations", and they may be the target of malicious rumours in their peer groups or be excluded from critical social activities like birthday parties. They could be excluded from study groups formed in class or groups formed during extracurricular activities in the school milieu. But they may also suffer rumour-spreading and manipulation that leaves them psychologically broken. What is most sure about relational victimization is that its targets are most commonly victimised by peers, friends, and romantic partners. It manifests itself in different forms, including verbal victimisation, the use of words or gesture to cause psychological harm (Rancer, 2015). For instance, gossiping about another person, excluding others from peer groups, ignoring each other, criticizing people behind their back, turning people against each other, threatening to break up with a partner if the partner does not comply, and spreading rumours (Crick & Grotpeter, 1995). This suggests that verbal aggression is similar to bullying, except that it does not use physical aggression. Like bullying, relational victimisation relies on verbal, social, and physical methods of intimidation and harassment in order to inflict pain on its victims. It might make use of threats, teasing, criticism, and other forms of verbal aggression in order to cause harm.

Morals & crick (2000) identified two forms of relational victimisation being: direct and indirect forms. Direct relational victimisation includes behaviours such as verbal exposures aimed at damaging relationships whereas its indirect forms are more commonly associated with internalized problems such as depression and anxiety. It also involves indirect approaches and includes behaviours such as gossip and social exclusion (Campbell, 1999). Sarcastic verbal comments, speaking in a cold tone of voice, ignoring, staring, leaving out, spreading rumors, “mean” facial expressions, and cyber bullying are all direct relational bullying examples (Li, 2022). These types of mean behavior manipulate or cause damage to relationships for the purpose of hurting the victim’s self-esteem or social status in a peer group. The intent is to harm another child's social standing or social relationships. Newman (2005) explained that there is more damage at the earlier stage of adolescence than later. Adolescents are a priority here because they are at the verge of certain developmental gains in their lives such as logic and analytic thinking ability, self-identity development and increasing independence.

Opposite sex friendships become more common among adolescents. Direct forms of relational victimisation may now involve both male and female peers, prior to the onset of adolescent, boys and girls become socialised primarily within same sex contexts. For example, in a same-sex friendship, the relationally victimised adolescent may be threatened with exposure of shared secrets to a potential opposite-sex romantic partner and same-sex peers. Some studies have demonstrated that young adolescents continue to prefer same-sex peers to other-sex peers (Bukowski et al., 1999) and same-sex peer preference declines over time (Sippola et al., 1997). Dissing someone of the opposite sex may also be directly relationally victimizing behavior (Rudolph, 2009). This behavior is characterised by completely ignoring the victim while simultaneously playing up to a critical friend in the victim’s same-sex peer group, clearly meant to compromise the victim’s social status among his or her peers.

As identity issues become more salient to adolescents, aspects of their social interactions may become avenues for relational victimisation (Siegal, 1993). Indirect behaviours that may be used to victimize an adolescent relationally may involve rumours that are more socially savvy than they had ever experience. This involves multiple past relationships and more extensive weaving of stories, described by adolescents as “trashing them”, e.g., gossip (Morales et al., 2000). Again, this may involve spreading rumours about others to both male and female peers. It is important to note that relational victimisation is more common during adolescence than overt victimisation, although boys report higher overt victimization than girls (La Greca et al., 1993). Worth mentioning is the fact that relational victimisation is more common among girls than boys (Hyde, 1984; Crick, 1997). Card et al. (2008) posits that although girls seem to engage significantly more in indirect victimisation than boys, the difference is trivial. For example, girls are naturally involved in talking and spreading rumours more than boys.

Another meaningful way that the experience of relational victimisation differs during adolescence compared to childhood is the fact that it occurs in romantic relationships, peer relationships and friendships (Card et al., 2008). In adolescent romantic relationships, relational victimisation may occur through manipulating sexual confidences and fidelity issues. These behaviours are exemplified through actions such as “cheating” on the victim, trying to make the victim jealous- and depriving him or her of affection or “cutting him (or her) off” (Morales et al., 2000). In addition to the possibility of experiencing victimisation by a partner in romantic dyads, adolescents’ intimate relationships may be used as “relational weaponry” by other peer victimisers.

The developmental manifestation of relational victimisation amongst adolescents becomes consistently more complex, with development involving both direct and indirect manipulations of social relationships and mirrors developmental gains in the social and cognitive domains. Adolescents report that some peers victimise others by going after or stealing their dating partner and telling lies about their past with the intent to ruin their friend’s reputations (Morales et al., 2000). Relational victimisation is a pervasive experience in adolescence and is associated with various maladjustment symptoms such as isolation, low self-esteem, fear, exclusion from groups, and depression (Hawker & Boulton, 2000). It can have negative implications on adolescents among which are high levels of loneliness characterise relationally victimised adolescents with a high social and psychological profile; symptoms of depression, exclusion and low self-esteem (Hunter et al., 2007) have greater involvement in violent relational behaviour.

Relational victimisation is associated with psychological mal-adjustment in adolescents (Baldry, 2004). This paper reports partial data from a study of peer victimization and the psychosocial maladjustment of adolescent students in secondary schools in Cameroon. Variables of peer victimisation included relational victimisation, overt victimisation, sexual assaults, power imbalance and property crime which were checked against psychosocial maladjustment. Previous studies found relationships between relational victimisation and adolescent wellbeing, but it would appear this research has received far little attention than overt victimisation and the other victimisation tendencies among peers during adolescence. It therefore made a good reason to present the data that was found and the results that were obtained against relational victimization and psychosocial maladjustment among adolescent students in Cameroon secondary schools. The literature is almost silent on relational victimisation and its consequences on adolescent wellbeing while other overt victimization tendencies receive a lot of attention. Relational victimisation was defined by a range of behaviours might be aimed at damaging relationships or one's social reputation, such as lies telling, exclusion, manipulation, rumour-spreading, mockery and much more. Meanwhile tendencies to self-isolate, of low self-esteem, verbal abuse, lack of confidence, feelings of incompetence and more were used to define psychosocial mal adjustment.

3. Methods

The research design adopted for this study was the mixed methods approach with a concurrent nested design. The accessible population was made up of 667,308 students and 32,897 administrators\teachers drawn from four public schools, four mission schools and four lay private schools from the four regions in Cameroon. The purposive sampling technique was used to select a sample of 610 including 586 students and 24 school administrators (discipline masters) and counsellors.

Data were collected using questionnaires, interviews and focus group discussions. Adolescent students responded to a questionnaire and ten of them participated in a focus group discussion, while school administrator and counselors responded to an interview. Questionnaire data subjected to descriptive statistics to generate counts, percentages, and multiple responses sets. The descriptive data were further used to verify the hypothesis that was stated in the study. The Spearman rho correlation test was used to verify the relationship between relational victimisation and psychosocial maladjustment among adolescent students in secondary schools in Cameroon. Meanwhile qualitative data was analyzed using thematic analysis and emerging themes and their groundings were discerned and presented, and expatiated by quotations.

4. Findings

4.1. Relational victimisation and psychosocial maladjustment of adolescent students

Table 1: Psychosocial Maladjustment among Adolescent Students in Secondary Schools

Items	Stretched			Collapsed		
	Strongly Agree (SA)	Agree (A)	Disagree (D)	Strongly Disagree (SD)	SA/A	D/SD
I always feel like staying away (isolating myself) from my peers in school environment	110 (19.0%)	169 (29.3%)	108 (18.7%)	190 (32.9%)	279 (48.4%)	298 (51.6%)
I get depressed while in school	81 (14.1%)	145 (25.3%)	167 (29.1%)	181 (31.5%)	226 (39.4%)	348 (60.6%)
I suffer from the feeling of low self-esteem while in school	92 (16.1%)	138 (24.1%)	166 (29.0%)	177 (30.9%)	230 (40.1%)	343 (59.9%)
I know many classmates who love staying indifferent from peers in school environment.	160 (27.8%)	203 (35.2%)	84 (14.6%)	129 (22.4%)	263 (63.0%)	213 (37.0%)
I often quarrel with my mates when they get aggressive towards me	125 (21.7%)	166 (28.9%)	114 (19.8%)	170 (29.6%)	291 (50.6%)	284 (49.4%)
I often get angry in the school	103	178	124	170	281	294

	(17.9%)	(31.0%)	(21.6%)	(29.6%)	(48.9%)	(51.1%)
The learning environment is very tense such that I fear	86	144	149	188	230	337
I sometimes lack confidence in myself while am in school	(15.2%)	(25.4%)	(26.3%)	(32.6%)	(40.6%)	(59.4%)
I often feel incompetent to carry out some tasks assigned to me in school	140	164	118	149	304	267
	(24.5%)	(28.7)	(20.7%)	(26.1%)	(53.2%)	(46.8%)
I am not comfortable standing up and responding to questions in class	117	160	137	154	277	291
	(20.6%)	(28.2%)	(24.1%)	(27.1%)	(48.8%)	(51.2%)
Multiple Response Set (MRS)	1126	1599	1259	1710	2725	3005
	(19.7%)	(27.9%)	(22.6%)	(29.8%)	(47.6%)	(52.4%)

Assessing the prevalence of psychosocial maladjustment among adolescent students in secondary schools, table 10 shows that some 48.4% (279) of adolescent students indicated they always felt like staying away (isolating themselves) from peers in the school environment. A percentage of 39.4% (226) of participants get depressed in school. At the same time, 40.1% (230) of the adolescent students presented a lack of self-esteem while in school. A total of 63.0% (263) argued that many of their classmates love staying indifferent to peers in school.

The findings showed that 50.6% (291) of adolescent students quarrel with their mates and portray an aggressive attitude towards them. The findings further revealed that some 48.9% (281) get angry in school. Some 40.6% (230) of the adolescent argued that their learning environment is agitated, such that they are afraid. In contrast, 53.2% (304) of the adolescent students indicated they sometimes lack confidence in themselves in the school environment.

The findings also showed that some 48.8% (277) of adolescent students often feel incompetent to carry out tasks assigned to them in school. Finally, 42.5% (244) of the adolescent students indicated they were not comfortable standing in class and answering questions. In aggregate, findings showed that 47.6% (2725) of the adolescent students showed signs of psychosocial maladjustment while 52.4% (3005) did not.

Table 2: Adolescent Students' Characterisation of Relational victimisation

Items	Stretched			Collapsed		
	Strongly Agree (SA)	Agree (A)	Disagree (D)	Strongly Disagree (SD)	SA/A	D/SD
Lies telling among peers is rampant in my school	236 (41.0%)	195 (33.9%)	66 (11.5%)	78 (13.6%)	431 (75.0%)	144 (25.0%)
My peers regularly gossip and smear my name and person.	170 (29.6%)	170 (29.6%)	129 (22.4%)	106 (18.4%)	340 (59.1%)	235 (40.9%)
I often receive a lot of mockery from my peers in school	195 (34.0%)	224 (39.0%)	74 (12.9%)	81 (14.1%)	419 (73.0%)	155 (27.0%)
My friends and peers are rude to me for no reason even when I try to be nice to them	113 (19.7%)	162 (28.3%)	179 (31.2%)	119 (20.8%)	275 (48.0%)	298 (52.0%)
I am demoralized by the attitude of my peers	138 (24.0%)	184 (32.1%)	146 (25.3%)	107 (18.6%)	323 (56.1%)	253 (43.9%)
Peer groups are disrupted due to gossips	171 (29.7%)	212 (36.8%)	91 (15.8%)	102 (17.7%)	383 (66.5%)	193 (33.5%)
There is manipulation in school by peers	165 (28.6%)	208 (36.2%)	95 (16.5%)	107 (18.6%)	373 (64.9%)	202 (35.1%)
Verbal expression and anger causes harm among peers	194 (34.4%)	208 (36.9%)	90 (16.0%)	72 (12.8%)	402 (71.3%)	162 (28.7%)
I am often excluded from study groups because I do not partake in gossips	107 (18.9%)	173 (30.6%)	153 (27.1%)	132 (23.4%)	280 (49.6%)	285 (50.4%)

Exclusion from study groups by peers hinders my smooth functioning in school	129 (22.9%)	169 (30.0%)	119 (21.1%)	147 (26.1%)	298 (52.8%)	266 (47.2%)
Multiple Response Set (MRS)	1618 (28.3%)	1906 (33.3%)	1142 (20.0%)	1051 (18.4%)	3524 (61.6%)	2193 (38.4%)

Findings showed that 75.0% (431) of adolescent students suffered lies told about them by their peers in schools. A percentage of 59.1% (340) of the adolescent students argued that peers' gossip and smear their names and person. Findings showed that 73.0% (419) of adolescent students received mockery from their peers. While 48.0% (275) of the adolescent students indicated their friends are rude to them for no reason, even when they try to be nice to them, a percentage of 56.1% (323) of the adolescent students presented that they are demoralized by the attitude of their peers. Furthermore, the findings also showed that 66.5% (383) adolescent students opined that peer groups are disrupted due to gossip. 64.9% (373) argued that there was manipulation in school by peers. While 49.6% (280) of the adolescent students indicated their failure to be among gossip groups leads to their exclusion from study groups by peers, 52.8% (298) of them indicated that exclusion from study groups by peers hinders smooth functioning in school. Finally, findings equally showed that a majority of the adolescent students, 71.3% (402), indicated that verbal expression of anger causes harm to peers. Overall, the findings showed that 61.6% of the adolescent students presented their school environment as relationally victimised while 38.4% (2193) denied it.

Table 3: Cross Tabulation between Relational aggression and Psychosocial Maladjustment

		Relational aggression		Total
		Strongly Agree/ Agree	Disagree/ Strongly Disagree	
Psychosocial maladjustments	Strongly Agree/ Agree	178 67.9%	84 32.1%	262
	Disagree/ Strongly Disagree	189 61.4%	119 38.6%	308
Total		367	203	570

Using a cross tabulation technique, findings showed that adolescent students whose school environment were characterized with relational victimisation suffered more from psychosocial maladjustment (67.9%) than those whose school environment was not characterized with relational victimisation.

Table 1: Thematic Characterisation of Relational victimisation

Has your character ever been damaged in school by peer?	How was it done?	How often was it done	Causes
'Yes'	'Insulting of mother' 'Gossip' 'Lies telling'	'Once' 'Frequently'	'Jealousy'
'No'			

From the focus discussion with the adolescent students, some opined they had been a victim of relational victimisation while others said they had not. Furthermore, the findings revealed that some students' characters have once been damaged in their school because of relational aggression while others have not. In addition, finding out from the students how relational victimisation was portrayed, some students were insulted by their peers while others said it was through gossiping and lies telling. To elucidate, finding out from the students how often they have been victims of relational victimisation, some said once, while others said often. In addition, when finding out the causes, some said they had no idea while others said it was caused by jealousy from peers. Finally, finding out from the students on how it could be eliminated, some students said students should dress decently. In contrast, others said they have to keep to themselves and that school rules and regulations be implemented strictly.

4.2. Verification of Hypothesis

H0₁: Relational victimisation does not predict the psychosocial maladjustment of adolescent students in secondary schools.

Table 5: Testing the Effect of Relational victimisation on Psychosocial Maladjustment

Test	Statistics	Relational victimisation	Psychosocial maladjustments
Spearman's rho	R-value	1.000	.351**
	p-value	.	.000
	n	570	570

** . Correlation is significant at the 0.01 level (2-tailed).

Statistically, findings showed that relational aggression significantly predicts the psychosocial maladjustment of adolescent students in secondary schools ($p < 0.001$; < 0.05). The positive sign of the correlation ($R = 0.351^{**}$) implied that adolescent students are more likely to suffer from psychosocial maladjustment. In addition, descriptive findings revealed that adolescent students whose school environment were characterized by relational victimisation suffered more psychosocial maladjustment (60.1%) than those whose school environments were not void of relational aggression. The null hypothesis that relational victimisation does not predict the psychosocial maladjustments of adolescent students was rejected and the alternative that relational victimisation does predict the psychosocial maladjustment of adolescent students was retained.

5. Discussions

The findings showed that relational victimisation significantly predicts the psychosocial maladjustment of adolescents in secondary schools. This implied that adolescent students who find themselves in environments characterized by relational aggression suffer more psychosocial maladjustment than those whose environments are free from it. The finding is similar to Storch & Masia-Warner (2004) who posited that there is a high demonstration of loneliness in an environment where relational victimisations is present. Participating students were clear about the presence of relational victimisation tendencies in schools such as lies telling, mockery, being rude and gossiping. The null hypothesis, which stated that relational victimisation does not predict psychosocial maladjustments among adolescent was rejected, while the alternative was retained.

The findings also showed that most adolescents attested to the fact that relational victimisation occurs due to jealousy, exclusion from groups, gossiping, mockery, and verbal expression of anger. This is further confirmed by Morales (2000), who posited that relational victimisation might occur through manipulating sexual confidence and fidelity issues, jealousy, and cutting off friends. This is further supported by Campbell (1999), who posited that relational aggression includes behaviours such as gossiping and social exclusion. Also, Crick and Grotpeter (1995) also attested to the findings of this work when they said; that verbal aggression is intentionally hurting people's social relationships, gossiping, excluding people from groups, and criticizing people behind their backs.

In addition, findings showed that relational victimisation could be manifested by damaging youth's integrity and gossip among peers. This conformed to the ideas of Coleman & Byrd (2003), which posited that relational victimisation is a wilful attempt to damage another youth's self-esteem, social status, or close relationship through social exclusion, damaging gossip, and friendship manipulation. The finding of this study confirmed that a high percentage of adolescents accepted they were excluded from their groups, gossiped about, mocked, and this is coupled with verbal expression of anger.

6. Conclusion

The findings revealed that relational victimisation leads to psychosocial maladjustments among adolescent students in secondary schools. This is because relational victimisation significantly predicts the psychosocial maladjustment of adolescents in secondary schools. Relational victimisation in adolescents is characterized by high levels of loneliness, symptoms of depression, exclusion, and low self-esteem, and have greater involvement

in violent relational behaviour. Therefore, relational victimisation is a common, pervasive experience in adolescence and is associated with various maladjustment symptoms such as isolation, low self-esteem, fear, exclusion from groups, and depression.

It is recommended that school authorities should take action when they find out about such happenings in the school environment. When such reports come from the students, they should also be taken seriously. Those involved in such victimisation should be disciplined to stop it. The actions received as a result of discipline will set an example to others to avoid emulating it or carrying out a similar action. Adolescents should be made to understand that it is a critical stage in their lives where they are building their personality. In the school environment, teachers, school Chaplain, counsellors, and administrators should make them understand that building a personality void of such negativity is worth it. There should be constant talks and seminars' in school concerning these ills and measures to eradicate them.

References

- Baldry, A.C. (2004). The impact of direct and indirect bullying on the mental and physical health of Italian youngsters. *Aggressive Behaviour*, 30, 343-355
- Bond, M., Katja, B., Bedenlier, S., Zacacki-Richter, O. (2020). Mapping research in student engagement and educational technology in higher Education; *A System Evidence Map. Digital media in higher Education*, 45(9).
- Bronfenbrenner, U. (1977) Toward an experimental ecology of human development. *American psychologist*, 32 (7), 513-531.
- Cairns, R. B., & Cairns, B. D. (1994). *Lifelines and risks: Pathways of youth in our time*. Cambridge University Press.
- Campbell, W.K. (1999). Narcissism and Romantic Attraction. *Journal of Personality and Social Psychology*, 77, 1254- 1270.
- Card, N. E, Stuky, B. D, Salawani, G. M, & Little, T.D (2008). Direct and indirect aggression cause, consequences and considerations in assessments and intervention. *School Psychology Quarterly*, 23, 451,461.
- Chokprajakchat, S. & kuanliang, A. (2015). Correlation between attitude toward violence and peer victimization, *Kaset Journal of social sciences*, 40(1), 193-197.
- Coleman, P. K., & Byrd, C.P. (2003). Interpersonal correlates of peer victimization among young adolescents. *Journal of Youth and Adolescence*. 32:301–314.
- Crick, N. R., & Bigbee, M. A. (1998). Relational and overt forms of peer victimization: A multi-informant approach. *Journal of Consulting and Clinical Psychology*, 66, 337–347.
- Crick, N. R., & Grotpeter, J. K. (1996). Children's treatment by peers: Victims of relational and overt aggression. *Development and Psychopathology*, 8(2), 367-380.
- Crick, N. R., Casas, J. F., & Nelson, D. A. (2002). Toward a more comprehensive understanding of peer maltreatment *Studies of relational victimization. Current Directions in Psychological science*, 11:98-101.
- Crick, N. R., Casas, J.K., and Ku, H. C. (1999). Relational and physical forms of peer victimisation in preschool. *Developmental psychology*, 35(2):376-385.
- Crick, N. R., Nelson, D. A., Morales, J. R., Hickman, S. (2001). Relational victimisation in childhood and adolescence: I hurt you through the grapevine. In Juvonen J, Graham S, editors. *School based peer harassment; the plight of the vulnerable and victimized*. Guildford press.
- Cullerton –Sen, C & Crick, N.C. (2005). Understanding the Effects of Physical and Relational Victimization: The Utility of Multiple Perspectives in Predicting Social-Emotional Adjustment. *School Psychology Review* 34(2), 45-56.
- Gutierrez, M & Concalves, T. O (2013). Developmental assets, school adjustment, and adolescents' subjective well-being. *International Journal of Psychology and Psychological Therapy* 13(3):339-35.
- Hawker, D.S.J. and Boulton, M.J. (2000) Twenty Years' Research on Peer Victimization and Psychosocial Maladjustment: A Meta-Analytic Review of Cross-Sectional Studies. *Journal of Child Psychology and Psychiatry and Allied Disciplines*, 41, 441-455.
- Heington, C et al., (1998). Assessing mental imagery in clinical psychology: *A review of imagery measures and a guiding framework*, 6(1): 36-65.
- Hunter, Simond C., Boyle J. and Warden D. (2007). Perception and correlates of peer victimization and bullying. *British journal of educational psychology*, 77(4) pp,797-810.
- Hyde, J. S. (1984). Children's understanding of sexist language. *Developmental Psychology*, 20(4), 697–706.

- Khanfer et al. (2013). Neutrophil function and cortisol: DHEAS ratio in bereaved older adults. *BrainBehav. Immune, 19*(2), 57-65.
- La Greca, L.J & Prining, (1999). *Adolescent Emotional Development and the Emergence of Depressive Disorders*>Peer relations, friendships, and romantic relationships: implications for the development and maintenance of depression in adolescents. Cambridge University press.
- Morales, J. & Crick.L (2000). Relational victimization and physical victimisation by peersand romantic partners in college students, *Journal of social and personal relationships, 3* (1).
- Newman, R. (2005). APA's Resilience initiative professional psychology: *Research and practice, 36*,227-229.
- Pinkerton, J. & Dolan, P. (2007). Family support, social capital, resilience and adolescent coping. *Child and family social work, Vol 12*(3), p.219-228.
- Prinstein, M.J. & Cillessen, A. H. N. (2003). Forms and function of adolescent peer aggression associated with high levels of peer status. *Merrill-Palmer Quarterly, 49*(3), 310-342).
- Putallaz et al., (2007). Overt and relational aggression and victimization: Multiple perspectives within the school setting. *Journal of school psychology, 45*(5): 523-547.
- Ranasinghe, P., Wathurapatha, W., Mathangasinghe, Y. and Ponnampereuma, G. (2017). Emotional intelligence, perceived stress and academic competence of Sri Lankan Medical undergraduates. *Medical Education 17*(1).
- Rudolph K. D, Hammen C, Burge D, Lindberg N, Herzberg D, Daley SE. (2000). Towards an interpersonal life-stress model of depression: The developmental context of stress generation. *Developmental and Psychopathology, 20*(4), 697-701 .
- Richardson, S.& Green, p. J. (1997) On Bayesian Analysis of mixtures with an unknown number of components (with discussion). *Journal of royal statistics, Vol 59* (4) p.731-792.
- Salmivalli, C., Kaukiainen, A. O., Voeten, R. (2005). Anti-bullying intervention: Implementation and outcome. *British Journal of Educational Psychology, 75*(3): 465-87.
- Schafer, S. (1968). The victim and his functional responsibility. *Criminology Vol 5*(3), p. 25-29.
- Schäfer, W. D., Byrnes, J. P. and Miller, D. C. (1999). Gender differences in risk taking: A metal analysis, *Psychological Bulletin 125*(5): 367-383.
- Siegal, L. S. (1993). The development of reading. In H. W. Rease (Ed.), *Advances in child development and behaviour, Vol.24*, pp.63-97. Academic press.
- Storch, E. A. and Masia-Warner, C. (2004). The relationship of peer victimization to social anxiety and loneliness in adolescent females. *Journal of adolescence, 27*(3), 351-362..
- Vaillancourt, T., Hymel.S.and McDougall, P. (2003). Bullying is power: Implications for the school intervention strategies. *Journal of applied school psychology, 19*(2):157-176.
- Vinas et al., (2015). Evolution processes driving spatial patterns of intraspecific genetic diversity in river ecosystems. *Molecular Ecology, Vol 24*(18) p. 4586-4604.
- Wermer & Schäfer (1999). Statistical method in medical research: Multiple imputation; *SAGE Journals*. 99-109.

Implementation of Inclusive Education in Ghanaian Colleges of Education: Factors that Influence the Tutors' Perception

Samuel Nti-Adarkwah¹, Philip Boateng², Jonathan Kwame Mensah³, Eric Appiah-Kubi⁴

¹ Department of Education, Offinso College of Education. Email: snadarkwah@ofce.edu.gh

² Department of Interdisciplinary Studies, Akenten Appiah-Menka University of Skills Training and Entrepreneurial Development. Email: pboateng@aamusted.edu.gh

³ Department of Education, Offinso College of Education. Email: jomensi2007@yahoo.com

⁴ Department of Education, Berekum College of Education. Email: Appiahkubi0004@gmail.com

Abstract

The study aimed to explore the perception of tutors of colleges of Education (CoE) towards the implementation of inclusive education in the Ashanti Region of Ghana as it exists at the time of the study and to examine whether their demographic profile like Gender, Age, Professional level, and working experience influenced their perceptions. The research made use of a quantitative method design. The study used 88 college tutors from a population of 133 College tutors in three colleges of education in the Ashanti Region of Ghana. A convenient sampling technique aided the researchers in selecting the CoE, while a simple random sampling technique was used to select the study participants. A self-designed semi-structured questionnaire was used as a primary data collection instrument. The data were subjected to frequency counts involving a simple percentage technique using themes and comments from the questionnaire and Multiple Regression. The respondents believed that implementing inclusive education at the CoE would bring many benefits, such as improving the social and academic skills of students with disabilities. However, respondents feared that inclusive education at the CoE would not benefit them as well as students with disabilities as a result of lack of funding and resources, limited classroom space and instructional materials, and the fact that it will increase the workload of the tutors. Again, the study revealed that except for tutors' working experience, which has a significant contribution to influencing their perceptions towards the inclusion of students with disabilities at the CoE, factors like gender, age, and professional levels are not good moderating tools to predict college tutors' perceptions on the inclusion of students with disabilities in CoE. Recommendations from the study involved Affiliate Universities liaising with the Ghana Tertiary Education Commission (GTEC) to organise workshops and seminars for the regular tutors at the colleges to equip them with the necessary skills required to engage students with disabilities in the regular CoE.

Keywords: Inclusive Education, Implementation, Colleges of Education, Ghana, Tutors, Perceptions

1. Introduction

Crusading for the education of children with disabilities alongside their abled counterparts in a regular classroom traces its origins to the United Nations Conference on Inclusive Education held in Thailand in 1990 (United Nations Educational, Scientific and Cultural Organization [UNESCO], 1994). This conference advocated for the education of students with disabilities in schools located in their communities (Anthony, 2011). There have been

a series of campaigns afterwards and upon realising the benefits of inclusive education to all children, especially those with disabilities (Mariga, McConkey, & Myezwa, 2014). Many countries across the globe, such as Australia, the United Kingdom, Canada, the United States of America, and Malaysia, have joined the crusading train and have passed legislation and policies to promote inclusive education (Emmers, Baeyens, & Petry, 2019; Engelbrecht & Savolainen, 2018; Specht et al., 2016).

Furthermore, international legislation and policies have equally influenced countries, including India (Sharma & Deppeler, 2005), Hong Kong (Lee, Yeung, Tracey, & Barker, 2015), Saudi Arabia (Alnahdi, 2019), and sub-Saharan countries. A critical look at Africa (Nketsia, 2018; Pather, 2019) shows that Ghana (Opoku, Rayner, Pedersen, & Cuskelly, 2019), Nigeria (Brydges & Mkandawire, 2018), Kenya (Odongo & Davidson, 2016) and South Africa have currently developed inclusive education policies and implemented them either on a pilot basis or in whole (Engelbrecht & Savolainen, 2018).

It is pertinent to note that through the Ghana Education Service, the Ministry of Education started implementing the inclusive education policy in September 2015. Records have it that in the 2003/04 academic year, the Government of Ghana, with the Special Education Division (SPED) and Voluntary Service overseas (VSO-UK), started inclusive education as a pilot project in 10 districts in three regions, namely, the Central, Greater Accra, and Eastern regions. In all, 60 schools were selected for the pilot program. Out of the 60 schools, 24 (40%) were selected from the four districts in the Greater Accra region; 20 (33%) from three districts in the Central region; and 16 (27%) from the four districts in the Eastern region (Opoku, Agbenyega, Mprah, Mckenzie & Badu, 2017). Inclusive schools were categorised into three: inclusive government schools; United Nations Children's Fund [UNICEF] inclusive schools; and United Nations Educational, Scientific and Cultural Organization [UNESCO] inclusive schools. Funds were beseeched from UNICEF and UNESCO in the 2011 and 2012 fiscal years, extending the programme to cover Ashanti, Brong Ahafo, Northern, Upper East, Upper West, and Volta regions (Opoku et al., 2017). In September 2019, the piloted program was rolled over to all levels of education in all sixteen regions in the country.

Regarding the benefits of inclusive education to all children on their academic and social development, there are some common assumptions that inclusive education would result in higher teacher-child ratios and that teachers trained in special education would promote better academic outcomes in segregated special schools or classes (Lee, 2013). By contrast, several research studies show that students with disabilities who are educated in mainstream educational settings demonstrate better social, academic, and vocational outcomes when compared to children who are educated in segregated settings (Opoku, Badu, Amponteng, & Agyei-Okyere, 2015; Claiborne et al. 2013; Hehir et al. 2016). Research provides evidence for better outcomes in reading, writing, and mathematics (Graaf et al., 2013; Kliever, 2008; Peetsma et al., 2001). Children who experience disabilities and are included in the mainstream have been found to score higher on achievement tests and perform closer to the grade average than those in non-inclusive settings (Vakil et al., 2009; Jordan et al., 2010).

Furthermore, there is strong evidence that inclusive education is a prerequisite for the social inclusion of people with disabilities during and after school graduation (Kefallinou et al., 2020). There is also evidence of a strong positive link between inclusive education and social inclusion in education, employment, and life in the community (European Agency 2018a). Additionally, inclusive education stimulates learning in that more time is spent on academic learning in mainstream schools than in segregated settings (Graaf et al., 2013; Kliever, 2008). Children who are included in mainstream schools have more excellent prospects of engaging at higher academic levels and achieving better outcomes than those in segregated schools (Finke et al., 2009; Fox et al., 2004; Giangreco et al., 1993; Jordan et al., 2009; Jordan et al., 2010).

Again, children who do not have disabilities benefit academically from inclusive education with equal or better academic outcomes than children participating in non-inclusive settings (Dessementet & Bless, 2013; Farrell, Dyson, Polat, Hutcheson, & Gallannaugh, 2007; Odom et al., 2011; Purdue et al., 2001). All children in inclusive settings appear to receive higher quality instruction better suited to individual needs, mainly through small group work (Jordan et al., 2009). Furthermore, inclusive teachers engage all children in higher-order thinking, questioning, and dialogical interactions than non-inclusive teachers (Jordan et al., 2010).

Notwithstanding the effort put in by stakeholders in education to expunge the boundaries that separate special education from regular education (Daniel & King, 1997; Lee, 2013; Opoku, Badu, Amponteng, & Agyei-Okyere, 2015), inclusive education practice in Ghana appears to be affected by several challenges (Agbenyega, 2007; Mprah, Dwomoh, Owusu, & Ampratwum, 2016; Mitchell, 2017). Among the challenges identified were: inaccessible physical space, the sensitive transition of students with disabilities during their first weeks of attendance (Morina, 2017); lack of awareness, preparation, commitment, and collaboration (Mitiku et al., 2014; Kefallinou et al., 2020); lack of funding and resources, limited classroom space, inadequate instructional materials, and the fact that it will increase the teachers' workload (Mitchell, 2017). The most significant challenge antagonising inclusive education seems to be teachers' perception of students with disabilities (Opoku et al. 2017). On factors that influence teachers' perceptions of the inclusion of students with disabilities in regular classrooms, the findings of similar studies (Deku, 2017; Aldosari, 2022) revealed that the age, position, experience, and professional qualification of teachers do not influence their perceptions. However, studies conducted by Shin et al. (2019) show that teachers' teaching experiences directly relate to their perceptions of the inclusion of students with disabilities in regular classrooms.

Successful implementation of any inclusive policy mainly depends on educators' being optimistic about it (Avramidis et al., 2008; Lopez-Gavira et al., 2021); they should therefore be supported and trained to adopt different teaching methods and strategies to support diverse students within a classroom context (Ashman, 2015). How prepared tutors of colleges of education are to welcome and support the full implementation of inclusive education programmes in their various colleges is, therefore, a test case for successful inclusion and a great concern of this study. Also, there is a little local empirical study on the influence of college of education tutors' demographic profiles like gender, age, professional level, and working experience on their perceptions about inclusive education in Ghanaian colleges of education, as most of the previous studies tend to focus on developed countries other than developing countries like Ghana. This, therefore, brings about the existence of a knowledge gap in the literature. In light of this background, the present study sought to investigate the perceptions of tutors of colleges of education in some selected colleges of education and the influence of their demographic profile on the implementation of inclusive education in colleges of education in Ghana.

1.1. The Purpose of the Study

The study sought to explore the perceptions of tutors of colleges of education towards the implementation of inclusive education in some selected colleges of education in the Ashanti region of Ghana and to examine whether their background profile factors like gender, age, professional level, and working experience influence their perceptions.

1.2. The Objectives of the Study

The following objectives guided the study:

1. To examine the perceptions of tutors of COE on the benefits of inclusive education.
2. To evaluate the inherent challenges of COE in the Ashanti region of Ghana.
3. To analyse the factors influencing college of education tutors' perceptions of implementing inclusive education at the selected colleges of Education.

1.3. Research Questions

The following research questions/hypothesis guided the study:

1. What benefits are associated with the implementation of inclusive education to college tutors and students with and without special needs education?
2. What are the practical challenges faced by tutors of the selected colleges of Education in Ghana about Inclusive Education?

1.4. Research Hypothesis

Ho: There is no statistically significant difference between CoE tutors' demographic profile (Gender, Age, Professional level, and working experience) and their perceptions of inclusive education for students with disabilities at the colleges of education.

2. Methodology

2.1. Research Design

The study employed a descriptive survey design to gather data. The design dealt with finding out the perception of tutors of CoE on the implementation of inclusive education in the colleges of Education in the Ashanti region as it exists at the time of the study. The descriptive survey design helped the researcher to use a questionnaire, which represents a vital instrument for gathering data for a study. Frankel and Wallen (2004) note that a descriptive survey allows many individuals to ask the same set of questions by mail, telephone or in person. It is also advantageous because it has the potential to provide much information from a large sample of individuals. This method also enables a researcher to make inferences and generalise findings from the sample to the population (Best & Kahn, 1995). The descriptive survey was further considered the most appropriate design for conducting this study since it deals with things as they currently are (Creswell, 2013). Creswell further explained that a descriptive survey describes the population's perceptions, attitudes, behaviours or characteristics. It also can provide much information that will be gathered from the respondents.

2.2. Population

According to Seidu (2007), the population in research refers to the totality of objects or individuals regarding which inferences are to be made in a sampling study. The study is about the perceptions of tutors of colleges of education in some selected colleges of education on the implementation of inclusive education in Ghanaian colleges of education and the influence of their demographic profile (gender, age, professional level, and working experience) on their perceptions. In line with this study, the population consisted of college tutors in three selected colleges of education in the Ashanti region of Ghana. Therefore, the target population for the study consisted of 133 tutors.

2.3. Sample and Sampling Techniques

The sample size for the study was calculated based on the sample size determination guidelines of Yamane. To select an appropriate sample size, Yamane (1967) developed a simple formula suggesting that the appropriate sample size could vary for various large population sizes. According to Yamane, the sampling size can be calculated at a 95% confidence level by using this formula:

$$n = \left(\frac{N}{1 + N(e)^2} \right)$$

Where n = sample size,

N= Number of the statistical population

e = margin of error, i.e., 0.05

Based on the formula, the sample consisted of 88 college tutors. A stratified sampling technique was used to select respondents to ensure that males and females were fairly represented.

Table 1: Sample Distribution of Participants by College

College	Total Number of college-tutors	college-%	Estimated Number of college tutors selected	Actual respondents (college tutors)
Offinso	47	35	30	30
St. Louis	46	35	30	30
Mamtech	40	30	28	28
Total	133	100	88	88

Author's source (2021)

Table 1 shows a proportional sample distribution for various colleges of education.

2.4. The instrument for data collection

The study used a questionnaire to gather data to answer the research questions. As the researcher desires to collect data on the perceptions of tutors of colleges of education toward inclusive education and the influence of the demographic profile on their perceptions, a self-constructed Likert-type scale questionnaire was developed to collect data using the research questions raised to guide the study. The questionnaire consisted of 10 close-ended questions. The five Likert-type scales ranged from "strongly agree" (SA), "agree" (A), "neutral" (N), "disagree" (D) and "strongly disagree" (SD). For ease of analysis and discussion, the five Likert scales were crafted into two main groups: strongly agreed and agreed as "agreed" and strongly disagreed and disagreed as "disagreed." The questionnaires were appropriate here because all the respondents were literate. The questionnaires were administered to the study participants. Before that, the researchers discussed the contents and distributed them to the respondents later. There was a return rate of 100% (hundred percent).

2.5. Validity of Instruments

The validity of an instrument is used to determine if an instrument measures what it is intended to measure. In developing and evaluating or measuring instruments, validity is the most critical factor to consider (Ary et al., 2002). To validate the questionnaire, draft copies were given to two senior lecturers in the Special Education department, who read through and made all the necessary corrections to ensure face validity. After that review, the drafted questionnaire was sent to an experienced English lecturer for further review before pre-testing the instrument.

2.6. Reliability of instruments

One of the most commonly used indicators of internal consistency is Cronbach's alpha coefficient. For most social science research, according to Hair, Black, Babin & Anderson (2010) and Straub, Boudreau, & Gefen (2004), the Cronbach alpha coefficient of a scale should be 0.7 or above. In the current study, the Cronbach alpha coefficient for the instrument was 0.805. This indicates that the research instrument has high reliability.

2.7. Data Collection Procedure for Data Collection

The procedure for data collection is about techniques for physically obtaining data to be analysed in a research study (Johnson & Christensen, 2008). The questionnaire was used for the study. Fraekel and Wallen (1993) assert that questionnaires administered personally to groups help establish bonds, save time, and allow one to explain the purpose and the points that are not clear to respondents. Creswell (2014) also maintains that respecting the site where the research takes place and gaining permission before entering a site is very important in research. Letters were sent to the respective heads of departments of the respondents, stating the aims and purpose of the study and the need for the participants to give their consent and cooperation; the researcher subsequently assured them of confidentiality. Additionally, they were assured that all the pieces of information they provided would be used for

the intended purpose. These are the most important ethical issues when conducting a survey (Kelley, Clark, Brown & Sitzia 2003).

2.8. Analysis of Data from Questionnaire

The data were analysed using appropriate descriptive statistics, allowing the researcher to use numerical values to represent scores in the sample. According to Creswell (2014), descriptive statistics are appropriate because they allow the researcher to use numbers and provide the researcher with data that allows for inferences on the population and directions for answering the research questions. The returned questionnaires were coded for analysis to answer the research questions and test the hypothesis. An item-by-item analysis of the data was conducted. The percentage of the total sample responding to each question was presented.

The research hypothesis was analysed using multiple regression. The data were presented according to the responses and or views of the respondents. Numerical scores were assigned to them to indicate a possible relationship between the respondents' responses and their frequency. The scores assigned to the responses were analysed using frequency counts and percentages. This allowed the researcher to access data and interpret results for the statistical analysis provided.

3. Presentation of Results and Discussion of Findings

This section of the study analyses data gathered from the respondents on the perception of tutors of colleges of education towards the implementation of inclusive education in the Ashanti region and the influence of their demographic profile on their perceptions. The analysis is presented according to the two main research questions and one hypothesis to guide the study.

Table 2: Gender distribution of the respondents (College Tutors)

	Frequency	Percentage
Male	54	61.4
Female	34	38.6
Total	88	100.0

Source: Fieldwork, 2021

Table 2 depicts the sex distribution of the sampled respondents (tutors) of the various Colleges of Education selected for the study. The table shows that there were more male respondents than females. The table suggests that a few of the respondents totaling 34(38.6%), were females, whilst the remaining 54(61.4%) were males.

Table 3: Age Distribution of the Respondents (Tutors)

Age group	Frequency	Percentage
Below 35 Years	3	3.4
35 – 39 Years	21	23.9
40 – 44 Years	23	26.1
45 – 49 Years	23	26.1
50 – 54 Years	14	16
55 – 59 Years	4	4.5
Total	88	100.0

Source: Fieldwork, 2021

Table 3 shows the age distribution of the respondents. Age of 35 years 3(3.4%) and found to be teaching in the selected COE. Table 3 indicates that most respondents are between 40 – 44 (26.1%) and 45 – 49 (26.1%). Only 3.4% of the respondents are below 35 years.

Table 4: Professional Level of Respondents

Certification	Frequency	Percentage
First Degree	4	4.5
Second Degree	79	89.8
Third Degree	5	5.7
Total	88	100.0

Source: Fieldwork, 2021

Table 4 shows the professional level of the respondents sampled for the study. It reveals that a total of 79 (89.8%) respondents have second degrees, 5 (5.7%) of the respondents were third-degree holders, and 4 (4.5%) had first-degree certifications. It can be concluded that a more significant number of second-degree holders worked as tutors at the sampled colleges of education.

Table 5: Working Experience

No. of years taught	Frequency	Percentage
1 – 5 Years	4	4.5
6 – 10 Years	15	17.0
11 – 15 Years	22	25.0
16 – 20 Years	27	30.7
21 Years and Above	20	22.8
Total	88	100.0

Source: Fieldwork, 2021

Table 5 shows the years of teaching experience of the respondents sampled for the study. The table shows that 4 (4.5%) had a working experience ranging from 1 – 5 years, 15 (17.0%) had a working experience from 6 – 10 years, 22 (25.0 %) had between 11 – 15 years working experience whilst the majority of respondents 27 (30.7%) had their experience ranging from 16 – 20. Also, 20 (22.8%) respondents had working experience above 21 years. This indicates a higher level of experienced respondents of 27 (30.7%) ranging between 16 – 20 years.

Research Question 1: What benefits are associated with implementing inclusive Education at CoE?

Table 6: Tutor's responses to the Benefits of Inclusive Education

No	Item	Agree F %	Neutral F %	Disagree F %	Total %
1	Students with special needs improve their social skills when placed in a regular classroom	72 81.8	5 5.7	11 12.5	88 (100)
2	I hope the implementation of inclusive education at the CoE will be beneficial to me as a teacher	79 89.8	4 4.5	5 5.7	88 (100)
3	I believe the implementation of inclusive education at the CoE will improve the academic skills of students with disabilities	77 87.5	5 5.7	6 6.8	88 (100)

4	Generally, inclusive education is not only beneficial to students with disabilities but for teachers as well	80	91.0	4	4.5	4	4.5	88	(100)
---	--	----	------	---	-----	---	-----	----	-------

Source: Fieldwork, 2021

Table 6 shows that the majority of the respondents, 72 (81.8%), accept that students with special needs improve their social skills when placed in a regular classroom. However, 11 (12.5%) of the respondents disagreed, whilst only 5 (5.7%) were neutral. Again, most of the respondents, 79 (89.8%), agreed that the implementation of inclusive education at the COE would be beneficial to them as tutors, whilst five (5.7%) disagreed, with the least number of respondents, 4 (4.5%), opting for neutral grounds.

They believe that implementing inclusive education at the COE will improve the academic skills of students with disabilities attracted 77 (87.5%) respondents, while 6 (6.8%) disagreed. In general, an encouraging number of 80 (91.0%) respondents agreed that inclusive education is beneficial to students with disabilities and tutors, and 4 (4.5%) respondents disagreed.

Research Question 2: What are the inherent challenges faced by tutors of colleges of education in the Ashanti region of Ghana regarding the implementation of inclusive Education in CoEs?

Table 7: Tutors' Responses to Challenges to Inclusive Education

No	Item	Agree F %	Neutral F %	Disagree F %	Total %				
5	Competing policies in the Ghanaian educational setting pose a challenge to my practice of inclusion of students with disabilities	58	65.9	10	11.4	20	22.7	88	(100)
6	A lack of funding and resources poses a challenge to my practice of inclusion of students with disabilities	72	81.8	6	6.8	10	11.4	88	(100)
7	Placing students with special needs in a regular COE classroom will consume too much of an already overworked teacher's attention	42	47.7	11	12.5	35	39.8	88	(100)
8	Classroom space and instructional materials pose a challenge to my practice of inclusion of students with disabilities	69	78.5	2	2.2	17	19.3	88	(100)
9	I do not have the necessary knowledge, skills, attitudes and positive perception of inclusive education and this is a challenge	26	29.5	7	8.0	55	62.5	88	(100)
10	Inadequate teacher training poses a challenge to my practice of inclusion of students with disabilities	46	51.2	8	9.1	34	38.7	88	(100)

Source: Fieldwork, 2021

Table 7 illustrates the responses of the college tutors to their perceived challenges in inclusive education. Of the total response of 88, 58 (65.9%) were of the view that competing policies in the Ghanaian educational setting posed a challenge to their practice of inclusion of students with disabilities; however, 20 (22.47%) of them disagreed, with only 10 (11.4%) being neutral to the statement. A considerable number of the respondents, 72 (81.8%), agree that a lack of funding and resources would challenge their practice of including students with disabilities. The least number of 6 (6.8%) neither agreed nor disagreed, whilst 10 (11.4%) respondents disagreed with the statement.

Also, college tutors' responses to "placing students with special needs in a regular CoE classroom consuming too much of an already overworked tutors' attention" received 42 (47.7%) agreements, 11 (12.5%) neutral, and 35 (39.8%) disagreements to the statement. A total of 69 (78.5%) agreed that classroom space and instructional materials pose a challenge to their practice of inclusion of students with disabilities, with only 2 (2.2%) being neutral, whilst 17 (19.3%) of them disagreed with the statement. Here, the pattern of the responses suggests that respondents believe placing students with special needs in a regular COE classroom would burden them owing to

their classroom space and the availability of instructional materials to teach them. This finding confirms an earlier one (Morina,2017), which found that teachers often find it challenging to work with a large class of students with and without disabilities. Again, as to whether tutors at the selected colleges of education had the necessary knowledge, skills and attitudes, and positive perceptions about inclusive education, 26(29.5%) said they did not have, whilst the majority, 55 (62.5%) said they had with only 7(8.0%) being neutral. These responses indicate that tutors in those selected colleges of education had the needed knowledge, skills, attitudes, and positive perceptions and were prepared to implement inclusive education in their various colleges. Again, the majority of the college tutors, 46(51.2%), feared that inadequate teacher training would pose a challenge to their practice of inclusion of students with disabilities, whilst 34(38.7%) disagreed with 8(9.1%) of the respondent being indecisive.

3.1. Research Hypothesis

Ho: There is no statistically significant difference between CoE tutors' demographic profiles, professional level, and working experience and their perceptions of inclusive education for students with disabilities at the colleges of education.

Table 8: Model Analysis Summary

	Model R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.628^a	.395	.289	.30322

- Predictors: (Constant), Gender, Age, Professional Level, and Work Experience
- Dependent Variable: Inclusive Education of Children with Disabilities.

Table 9: Summary of Analysis of Variance (ANOVA)

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	1.498	4	.375	4.074	.011 ^b
1 Residual	2.299	25	.092		
Total	3.797	29			

- Dependent Variable: Inclusion of students with disability
- Predictors: (Constant), Gender, Age, Professional Level, Working Experience
F (4,25) = 4.047, P<0.05

Table 10: Regression Co-efficient Analysis of the Model

Model	Unstandardised Coefficients		Standardised Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.392	1.006		1.383	.179
1 Gender	-.145	.182	-.127	-.795	.434
Age	-.051	.106	-.103	-.478	.637
Professional Level	-.140	.349	-.069	-.401	.692
Working Experience	.455	.139	.667	3.281	.003

Dependent variable: teachers' perceptions towards the inclusion of students with disabilities.

3.2. Discussions of the key findings of the study

The study aimed to explore CoE tutors' perceptions of the implementation of inclusive education at the CoEs. A total of 88 tutors were selected from three different CoE, namely Mampong College of Education, Offinso College of Education and Saint Louis College of Education. The researcher used random sampling technique to draw the samples. Two (2) research questions and one hypothesis were raised and analysed.

Research question one sought to evaluate the college tutors's perception about the benefits associated with implementation of inclusive education in colleges of education. The study revealed that, most respondents have the believe that implementing inclusive Education at the CoE will bring many benefits. Such benefits include: improving the social and academic skills of such students with disabilities (Kefallinou et al.,2020), developing individual strengths and gifts with high and appropriate expectations for each child. Again, in Inclusive Education, parents are involved in their wards' education. It also helps the special Needs child to foster a school culture of respect and belonging, gives them opportunities to learn about, and accept individual differences. Apart from Inclusive education helping to lessening the impact of harassment and bullying, it develops friendships with a wide variety of other children. The pattern of the responses depicts that majority of the respondents agreed that inclusive education is beneficial to children with disabilities, their non-disabled counterparts, as well as college tutors as well. This finding is in line with an earlier finding identified by ((Opoku, Badu, Amponteng, &Agyei-Okyere, 2015; Claiborne et el. 2013; Hehir et al., 2016; Alima et al., 2017) that all children benefit from inclusive education, including their teachers.

Research question two was to examine the inherent challenges faced by tutors of colleges of education in the implementation of IE in CoE in the Ashanti region of Ghana. Here, most of the respondents responded that including students with disabilities at the COE would pose many challenges. Some of their perceived challenges included placing students with special needs in a regular CoE classroom would consume much of the already overworked tutors' attention and inadequate training, lack of funding and resources, competing policies in the Ghanaian educational setting, limited classroom space and instructional materials, etc. were significant issues of concern. The trend of the responses implies that even though majority of the college tutors believed that IE in CoE is beneficial they feared its implementation would not be helpful to them and the students with disabilities if those identified challenges were not addressed (Mitiku et al., 2014; Kefallinou et al., 2020; Mitchell, 2017).

Lastly, the hypothesis was to examine whether there was statistically significant difference between CoEs tutors' demographic profiles and their perceptions of inclusion of students with disabilities in Ghanaian colleges of education. To achieve the above purpose, a correlation analysis was conducted. The results of the model summary (table 8) found a correlation coefficient of **.628**. This shows a strong correlation among some of the various constructs. This also means that the relationship between the constructs is very close and can explain the dependent variable. R-squared measures the goodness of the explanatory variables in explaining the variations in the factors contributing to college of education tutors' perception towards inclusive education. As clearly described in the table, the adjusted R² value for the regression model was **0.395**. This indicates that the explanatory variables, gender, age range, professional level, and work experience in this study explain about **39.5%** of the variation in the factors contributing to teachers' perceptions toward inclusive education of students with disabilities. The model did not include the remaining 60.5% of the variation in the factors contributing to teachers' perceptions toward inclusive education of students with disabilities. Therefore, (gender, age, professional level, and working experience) are suitable explanatory variables influencing teachers' perceptions toward inclusive education of students with disabilities.

Again, an ANOVA test was conducted to ascertain whether the correlation between the dependent and the independent variables were statistically significant or not. The analysis in Table 9 shows that the Sig. Value 0.05 is greater than the calculated **Sig.** value of 0.011 thus $F(4,25) = 4.047, P < 0.05$. It reflects a statistically significant correlation between the dependent and independent variables at a 1.1% significant level. This means the explanatory variables (gender, age, professional level and working experience) greatly influence teachers' perceptions toward inclusive education of students with disabilities. It does not mean that all these factors taken from the various models have an equally significant correlation to the inclusion of students with disabilities.

A Regression co-efficient Analysis was also conducted to ascertain the specific relationship between the dependent and the independent variables. Results from the analysis in table 10 reveal a negative relationship between gender, age, and professional level towards the inclusion of children with disabilities. This is to say that, holding other variables constant, gender will have a -14.5% influence, age will have a 5% influence, and professional level will also have a 14.4% influence on inclusive education. Hence, gender, age, and professional-level variables cannot explain the dependent variable.

According to the **Sig.** Value of working experience, 0.455, which is above 1.6, will have a 45.5% influence on the dependent variable. This means that working experience greatly influences CoE Teachers' perception of the inclusion of students with disabilities. This study revelation contravenes similar studies by (Deku, 2017; Aldosari, 2022.), which revealed that teachers' age, position, gender, teaching experience, and professional qualification do not influence their perceptions but confirms a similar study conducted by Shin et al. (2019).

4. Conclusion

This study's primary purpose was to ascertain CoE tutors' perceptions of the implementation of inclusive education in three selected colleges of Education in Ghana and to examine whether their demographic profiles influence their perceptions. The results indicate that inclusion has many benefits based on the primary data collected from college tutors from the three colleges. However, respondents are unwilling to teach in an inclusive classroom due to a lack of funding and resources, competing policies in the Ghanaian educational setting, and limited classroom space and instructional materials. The study participants indicated that placing special-needs students in a regular CoE classroom would overburden them. Inadequate knowledge and skills in handling students with special and inadequate training were the significant issues of concern.

5. Recommendations

The following recommendations were made based on the findings of the study:

- Affiliate Universities should liaise with the Ghana Tertiary Education Commission (GTEC) to organise workshops and seminars for the regular tutors at the colleges to equip them with the necessary skills required to engage students with disabilities in the regular CoE.
- The government and other education stakeholders must provide specialised equipment and related services to all colleges to strengthen their service delivery.

6. Suggestions for further study

A comparative study of the responses of college tutors across at least two regions could produce more in-depth views on the perceptions of college tutors on inclusive education at the COE. This study was limited to only three COE in the Ashanti region of Ghana. Further studies could be extended to other regions to solicit CoE tutors and parents of students with disabilities views towards inclusive education at the COE.

References

- Agbenyega, J. (2007). Examining teachers' concerns and attitudes to inclusive education in Ghana. *International Journal of whole schooling*, 3(1), 41-56.
- Alima, G.M., Sandra, S., & Burns, T. (2017). The benefits of inclusive education: New challenges for university teachers. *MATEC web of conferences* 121, 12011.
- Alnahdi, G. (2019). Are we ready for inclusion? Teachers' perceived self-efficacy for inclusive education in Saudi Arabia. *International Journal of Disability, Development and Education*, 67(2), 182-193. doi:10.1080/1034912x.2019.1634795
- Anabel, M. (2017). Inclusive education in higher education: Challenges and opportunities. *European Journal of Special Needs Education*. 32(1), pp 3-17
- Anthony, J. (2011). Conceptualising disability in Ghana: Implications for EFA and inclusive education. *International Journal of Inclusive Education*, 15(10), 1073-1086.

- Ary, D., Jacobs, C. L., & Razavieh, A. (2002). *Introduction to research in education*. New York: Wadsworth Thompson Learning.
- Ashman, A. (2015). *Education for inclusion and diversity*. (Ed). Melbourne, Vic. Pearson Education.
- Best, R. K. (2012). "Disease politics and medical research funding: Three ways advocacy shapes policy." *American Sociological Review* 77(5):780–803.
- Borg, W. R. & Gall, M. D. (1983) *Educational research: An introduction*. New York: Longman Inc.
- Borg, W. R. & Gall, M. D. (1983). *Educational research and introduction*. (6th Ed). New York: Longman Publishing Company.
- Creswell, J. W. (2014). *Designing and conducting mixed method research* (2nd Ed.). Thousand Oaks, CA: Sage.
- De Graaf, G., Van Hove, G., & Haveman, M. (2013). More academics in regular schools? The effect of regular versus special school placement on academic skills in Dutch primary school students with Down syndrome. *Journal of Intellectual Disability Research*, 57(1), 21–38.
- Deku, P. & Vanderpuye, I. (2017). Perspectives of teacher regarding inclusive education in Ghana. *International Journal of Whole Schooling*, 13(3), 39-54.
- Dessemontet, R. S. & Bless, G. (2013). The impact of including children with intellectual disabilities in general education classrooms on the academic achievement of their low-, average-, and high-achieving peers. *Journal of Intellectual & Developmental Disabilities*, 38(1), 23–30.
- Farrell, P., Dyson, A., Polat, F., Hutcheson, G., & Gallannaugh, F. (2007). SEN inclusion and pupil achievement in english schools. *Journal of Research in Special Education Needs*, 7(3), 172–178.
- Fox, S., Farrell, P., & Davis, P. (2004). Factors associated with the effective inclusion of primary-aged pupils with down's syndrome. *British Journal of Special Education*, 31(4), 184.
- Frankel, J. & Wallen, W. (2004). *How to design and evaluate research in education*. New York: McGraw-Hill.
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate data analysis*. Englewood Cliffs, NJ: Prentice Hall.
- Jordan, A., Glenn, C., & McGhie-Richmond, D., (2010). The supporting effective teaching (SET) project: The relationship of inclusive teaching practices to teachers' beliefs about disabilities and ability, and about their roles as teachers. *Teaching and Teacher Education, Elsevier*, 26(2), 259-266.
- Jordan, A., Schwartz, E., & McGhie-Richmond, D. (2009). Preparing teachers for inclusive classrooms. *Teaching and Teacher Education*, 25(4), 535–542.
- Kliwer, C. (1998). The meaning of inclusion. *Mental Retardation*, 36(4), 317–322.
- Koay, T. L., Lim, L., Sim, W. K., & Elkins, J. (2006). Learning assistance and regular teachers' perceptions of inclusive education in Brunei Darussalam. *International Journal of Special Education*, 21(1), 131-142.
- Lee, S. E. (2013). "Education as a human right in the 21st century." *Democracy and Education*, 21(1), 1.
- Lee, S.J. (2015). Experiences and perceptions of teachers on implementing positive behaviour supports in inclusive pre-school classroom. *Korean Journal of Special Education*, 50(2), 167-196.
- Mariga, L., McConkey, R., & Myezwa, H. (2014) *Inclusive education in low-income countries: A resource book for teacher educators, parent trainers and community development workers*. Rondebosch, S. Africa: Disability Innovations Africa.
- Mitchell, R. (2017) *An ethnographic case study of the agendas, participation and influence of stakeholders at an urban government primary school in Tigray, Ethiopia*. PhD Thesis, University of Leicester.
- Mitiku, W., Alemu, Y., & Mengsitu, S. (2014). Challenges and opportunities to implement inclusive education. *Special Needs Education, University of Gondar, Euthopia*. 1(2) 2014.
- Mprah, K., Dwomoh, A., Opoku, M., Owusu, I., & Ampratwum, J. (2016). Knowledge, attitude and preparedness of teachers towards inclusive education in Ejisu-Juaben Municipality in Ashanti region of Ghana. *Journal of Disability Management and Special Education*, 6(2), 1-15.
- Odom, Y., Mitiku, W., Alemu, Y., & Mengsitu, S. (2011). Challenges and opportunities to implement inclusive education. *Asian Journal of Humanity, Art and Literature*, 1(2), 118 – 136.
- Opoku, M. P., Badu, E., Amponteng, M., & Agyei-Okyere, E. (2015). Inclusive education at the crossroads in Ashanti and Brong Ahafo regions in Ghana: Target not achievable by 2015. *Disability, CBR & Inclusive Development*, 26(1), 63-78.
- Opoku, M. P., Mprah, W. J. F., Mckenzie, J., & Badu, E. (2017). Decade of inclusive education in Ghana: Perspective of educators. *Journal of social inclusive*, 8 (1), 2017.
- Opoku, M. P., Rayner, C., Pedersen, S., & Cuskelly, M. (2019a). Mapping Ghana's research evidence-base in inclusive education to policy and practice: A scoping review. *International Journal of Inclusive Education*, 1–17. <https://doi.org/10.1080/13603116.2019.1600055>.
- Pather, S. (2019). Confronting inclusive education in Africa since Salamanca. *International Journal of Inclusive Education*, 23(7-8), 782–795. doi:10.1080/13603116.2019.1623329
- Peetsma, T., Vergeer, M., Karsten, S., & Roeleveld, J. (2001). Inclusion in education: Comparing pupils' development in special and regular education. *Educational Review*, 53(2), 125-135.

- Purdue, K., Gordon-Burns, D., Gunn, A., Madden, B., & Surtees, N. (2001). Supporting inclusion in early childhood settings: some possibilities and problems for teacher education. *International Journal of Inclusive Education*, 13(8) 805-815.
- Seidu, A. (2007). *Modern approach to research in educational administration for research students*. Amakom-Kumasi: Payless publication limited.
- Straub, D., Boudreau, M. C., & Gefen, D. (2004). Validation guidelines for IS positivist research. *Communications of the AIS*13(24), 380-427.
- Vakil, S., Welton, E., O'Connor, B., & Kline, L. S. (2009). Inclusion means everyone! The role of the early childhood educator when including young children with autism in the classroom. *Early Childhood Education Journal*,36(4), 321–326.
- Yamane, T. (1967). *Statistics: an introductory analysis*. New York: Harper and Row.

Teaching Notes – Employment Discrimination

Richard J. Hunter, Jr.¹, John H. Shannon², Henry J. Amoroso³

¹ Professor of Legal Studies, Seton Hall University; Adjunct Professor of Legal Studies, Collins College of Business, University of Tulsa

² Professor of Legal Studies, Seton Hall University

³ Associate Professor of Legal Studies, Seton Hall University

Abstract

This article, the third in the series of Teaching Notes on topics in a traditional Legal Environment of Business class, deals with employment law and employment discrimination. Specifically, the article discusses four major pieces of legislation: The Equal Pay Act of 1963, Title VII of the Civil Rights Act of 1964, the Age Discrimination Act of 1967, and the Americans with Disabilities Act of 1980, as well as the Lilly Ledbetter Fair Pay Act of 2009, which was enacted as a result of a decision of the United States Supreme Court. The article outlines the major provisions of each of these statutes, cites to major cases decided by federal courts, and describes any exceptions and exemptions. In addition, the article discusses job testing, bona fide occupational qualifications, and sexual harassment in the workplace. The article will offer suggestions to managers and employers in order to avoid the “pitfalls” of non-compliance with the obligations imposed by each of these important statutes and administrative regulations.

Keywords: Employment Law, Employment Discrimination, Job Testing, Sexual Harassment, Reasonable Accommodations, Undue Hardship

1. Introduction

Employment law is largely based on a scheme of statutory laws enacted by Congress to deal with specific issues or circumstances that may arise in the employment context. This article, third in the series of Teaching Notes in a Legal Environment of Business course, discusses these major statutes and administrative regulations that provide employees with protections from unlawful acts or from discrimination in their workplaces.

2. The Equal Pay Act (EPA) of 1963

The U.S. Supreme Court explained in *Corning Glass Works v. Brennan* (1974, p. 195):

“Congress' purpose in enacting the Equal Pay Act was to remedy what was perceived to be a serious and endemic problem of employment discrimination in private industry—the fact that the wage structure of “many segments of American industry has been based on an ancient but outmoded belief that a man, because of his role in society, should be paid more than a woman, even though his duties are the same.”

Enacted as part of President John F. Kennedy's "New Frontier" legislative agenda, the EPA, more specifically, Section 206(d)(1), prohibits "employer[s] ... [from] discriminat[ing] ... on the basis of sex by paying wages to employees [...] at a rate less than the rate [paid] to employees of the opposite sex [...] for equal work on jobs [requiring] equal skill, effort, and responsibility, and which are performed under similar working conditions[.]"

To establish a *prima facie* case under the EPA (Sullivan, 1978), an employee must show that:

1. *Different* (lower) wages are paid to employees of the opposite sex;
2. The employees *perform substantially equal work on jobs requiring equal skill (50%), effort (15%), and responsibility (20%)*; and
3. The jobs are performed under similar *working conditions (15%)* (see Burns & Burns, 1973; Elisburg, 1978).

As the statute indicates, the EPA provides that the employer may not pay lower wages to an employee of one gender than it pays to an employee of the other gender within the same establishment for substantially equal work at jobs that require substantially equal skill, effort, and responsibility, and that are performed under similar working conditions under what is called the "Kress Test."

There are several recognized exemptions under the EPA, including bone fide seniority systems; merit systems; systems which earnings by quantity or quality (piecework); or any system or factor "other than sex" (Gaffney, 1985) – for example, where wages are paid according to a formula based on "revenues produced." The EPA is often the basis of a "pay equity" complaint in tandem with provisions of the Title VII of the Civil Rights Act of 1964, discussed below.

2.1. A Further Development: The Lilly Ledbetter Fair Pay Act (2009)

The Lilly Ledbetter Fair Pay Act was the first piece of legislation signed into law by President Barack Obama in January of 2009 (Grossman, 2009) shortly after President Obama was sworn into office. The Act enables an employee to bring suit more easily for wage discrimination under Title VII of the Civil Rights Act of 1964 by making an act of discrimination illegal *each time it occurs*, for example, with each paycheck received, as opposed to when the discriminatory decision was initially made. The Act was passed in response to a 2007 Supreme Court decision in *Ledbetter v. Goodyear Tire & Rubber Co.* (2007) [hereinafter *Ledbetter*] relating to the statute of limitations for filing an equal-pay lawsuit.

Lilly Ledbetter was employed by Goodyear Tire Company in Gadson, Alabama from 1979-1998. In 1998, Ledbetter received an "anonymous note" in her locker at Goodyear. The note contained Ledbetter's salary information in comparison to that of her male counterparts. Ledbetter sued Goodyear under Title VII of the Civil Rights Act of 1964, alleging gender discrimination. In the trial that followed, Ledbetter discovered that she was making less than *all* of her male co-workers, even those with less seniority and those who had received lower performance reviews than Ledbetter had received.

Goodyear argued that Ledbetter's salary was directly related to poor performance reviews rather than any gender discrimination. The trial court ruled in Ledbetter's favor, awarding her \$3 million in damages, which was reduced to \$360,000 due to a Title VII damage cap. However, Goodyear appealed the decision - arguing that under Title VII, all discrimination complaints must be filed within 180 days of the alleged discriminatory act. Thus, only the most recent salary review was subject to challenge. The U.S. Circuit Court of Appeals for the Eleventh Circuit ruled in favor of Goodyear and dismissed Ledbetter's complaint, finding that no act of discrimination had occurred within the 180 day review period. The decision in the Eleventh Circuit was not consistent with decisions in several Courts of Appeal, which had followed the precedent of the "paycheck accrual rule."

According to the "accrual rule," the statute of limitation would not bar a suit based discrimination claim as long as one paycheck reflecting the alleged discriminatory pay was received during the 180 day statute of limitations. The decision of the Eleventh Circuit was appealed to the United States Supreme Court. The Supreme Court likewise focused on the question whether Ledbetter had a right to sue under Title VII since she had not filed her

claim with the EEOC within 180 days of the *initial* discriminatory act. The Supreme Court determined that the *charging period* is triggered by a discrete unlawful employment practice. As the Supreme Court explained, “a new violation does not occur, and a new charging period does not commence, upon the occurrence of subsequent nondiscriminatory acts that entail adverse effects resulting from the past discrimination” (*Ledbetter*, 2007, p. 628). The five-justice majority consisting of Justices Antonin Scalia, Anthony M. Kennedy, Clarence Thomas, and Chief Justice John G. Roberts Jr., found that *Ledbetter* did not file a timely claim because the *discrete act of discrimination*—the alleged discriminatory salary decision which led to the pay inequity—occurred outside of the 180-day filing period. In a dissenting opinion written by Associate Justice Ruth Bader Ginsburg, joined by Justices Stevens, Souter, and Breyer, the four-justice minority, however, argued that it was often impossible to ascertain when the discrete act of discrimination first takes place since, salary information is often confidential and it would not be to the advantage of an employer to reveal such information. For that reason, the minority argued that the required discrete act of discrimination was renewed with the receipt of every paycheck resulting from the initial salary determination.

The Congress responded to the Supreme Court’s decision with the passage of the Lilly Ledbetter Fair Pay Act, which amended Title VII of the Civil Right Act of 1964. According to the law, a discriminatory decision is illegal each time the act occurs – such as with receipt of a paycheck—and not when the initial pay decision is made. Section 2 of the Act states that the Supreme Court’s *Ledbetter* decision “undermines...statutory protections by unduly restricting the time period in which victims of discrimination can challenge and recover for discriminatory compensation decisions or other practices, contrary to the intent of Congress” and “ignores the reality of wage discrimination and is at odds with the robust application of the civil rights laws that Congress intended” (Lilly Ledbetter Fair Pay Act, 2009, § 2).

3. The Civil Rights Act of 1964

The Civil Rights Act of 1964 was landmark legislation in the United States (see Brown, 2014), outlawing major forms of discrimination based on five categories “in places of public accommodations, in federally assisted programs, in employment, in schools, and with respect to voting rights” (Chambers, 2008): race, creed, color, national origin, and sex.

President Kennedy’s vision for a new civil right bill included provisions to ban all forms of discrimination in public accommodations, while most importantly to the President, the Act would empower the United States Attorney General and the Department of Justice to join in lawsuits against state governments which operated or encouraged the formation of segregated schools. Loevy (1990) states that the “brutal police treatment of civil rights demonstrators in Birmingham, Alabama, forced President Kennedy to send a strong civil rights bill to Congress in June of 1963” (see also Andrews & Gaby, 2015).

3.1. Title VII

Title VII banned discrimination by employers on the basis of race, religion, color, sex, or national origin in the employment sphere. It also added protections for individuals “associated with other races,” such as parties involved in an interracial marriage. Employers were prohibited from discriminating in any phase of employment including hiring, recruiting, pay, termination, and promotions. However, the Act provided for certain limited “bona fide occupational qualifications” or exceptions under the Act.

Interestingly, the prohibition on sex discrimination found in Title VII was added by Rep. Howard Smith, Chairman of the House Rules Committee, who strongly *opposed* the legislation, in order to “kill” the entire bill. Smith's amendment to add the word “sex” to the bill was passed by vote of 168 to 133 (see Brown, 2014).

The inclusion of the term “sex” in the bill under these confusing circumstances led to the comments of Justice William Rehnquist who explained in *Meritor Savings Bank v. Vinson* (1986), “The prohibition against discrimination based on sex was added to Title VII at the last minute on the floor of the House of Representatives...

the bill quickly passed as amended, and we are left with little legislative history to guide us in interpreting the Act's prohibition against discrimination based on 'sex.'"

Precisely because of unanswered questions generated by the Act itself, the Supreme Court has often been called upon to decide cases relating to sex discrimination. These cases may be summarized as follows:

- *Cleveland Bd. of Ed. v. LaFleur* (1974): The Court found that Ohio public schools' mandatory maternity leave rules for pregnant teachers violate constitutional guarantees of due process.
- *Meritor Savings Bank v. Vinson* (1986): The Court found that a claim of "hostile environment" sexual harassment is a form of sex discrimination that may be brought under Title VII of the Civil Rights Act of 1964.
- *Johnson v. Transportation Agency* (1987): The Court decided that a county transportation agency appropriately took into account an employee's sex as one factor in determining whether she should be promoted.
- *Franklin v. Gwinnett County Public Schools* (1992): The Court ruled that students who had been subjected to sexual harassment in public schools may sue for monetary damages.
- *Oncale v. Sundowner Offshore Serv., Inc.* (1998): The Court held that sex discrimination consisting of same-sex sexual harassment can form the basis for a valid claim under Title VII of the Civil Rights Act of 1964.
- *Burlington Industries, Inc. v. Ellerth* (1998): The Court held that an employee who refuses unwelcome and threatening sexual advances of a supervisor (but suffers no real job consequences) may recover against the employer without showing the employer is at fault for the supervisor's actions.
- *Faragher v. City of Boca Raton* (1998): The Court decided that an employer may be liable for sexual harassment caused by a supervisor, but liability depends on the reasonableness of the employer's conduct, as well as the reasonableness of the plaintiff victim's conduct.

Applications of the Civil Right Act of 1964 (and other federal laws dealing with employment discrimination) include:

- Job Advertisements (see Burn et al., 2020)
- Recruitment (Stoilkovska, Ilieva, & Gjakovski, 2015)
- Application & Hiring
- Job Referrals
- Job Assignments & Promotions
- Pay & Benefits
- Discipline & Discharge (Sincoff, Slonaker, & Wendt, 2006)
- Employment References

3.2. Job Testing

One of the most historically significant issues raised with regard to Title VII has been the use of "job testing," which has the effect of discriminating against a perspective or current employee. In 2007, the U.S. Equal Employment Opportunity Commission (EEOC) (2007) wrote:

"Employers often use tests and other selection procedures to screen applicants for hire and employees for promotion. There are many different types of tests and selection procedures, including cognitive tests, personality tests, medical examinations, credit checks, and criminal background checks."

"The use of tests and other selection procedures can be a very effective means of determining which applicants or employees are most qualified for a particular job. However, use of these tools can violate the federal anti-discrimination laws if an employer intentionally uses them to discriminate based on race, color, sex, national origin, religion, disability, or age (40 or older).

Use of tests and other selection procedures can also violate the federal anti-discrimination laws if they disproportionately exclude people in a particular group by race, sex, or another covered basis, unless the employer can justify the test or procedure under the law.”

The EEOC (2007) notes “examples of employment tests and other selection procedures, many of which can be administered online, include the following:

- Cognitive tests assess reasoning, memory, perceptual speed and accuracy, and skills in arithmetic and reading comprehension, as well as knowledge of a particular function or job;
- Physical ability tests measure the physical ability to perform a particular task or the strength of specific muscle groups, as well as strength and stamina in general;
- Sample job tasks (e.g., performance tests, simulations, work samples, and realistic job previews) assess performance and aptitude on particular tasks;
- Medical inquiries and physical examinations, including psychological tests, assess physical or mental health;
- Personality tests and integrity tests assess the degree to which a person has certain traits or dispositions (e.g., dependability, cooperativeness, safety) or aim to predict the likelihood that a person will engage in certain conduct (e.g., theft, absenteeism);
- Criminal background checks provide information on arrest and conviction history;
- Credit checks provide information on credit and financial history;
- Performance appraisals reflect a supervisor’s assessment of an individual’s performance; and
- English proficiency tests determine English fluency.”

Title VII of the Act was intended to eliminate “artificial, arbitrary, and unnecessary” barriers to employment that operate to discriminate on the basis of criteria not related to job performance. Such testing would be prohibited, notwithstanding the employer's lack of discriminatory intent in requiring the particular test.

The Age Discrimination in Employment Act (ADEA) (Hunter, Shannon, & Amoroso, 2018; Hunter, Shannon, & Amoroso, 2019), discussed below, “prohibits disparate treatment discrimination,” i.e., intentional discrimination based on age. For example, in the context of job testing, the ADEA forbids an employer from giving a physical agility test solely to applicants over age 50, based on a belief that they are less physically able to perform a particular job, but not testing younger applicants. The ADEA also prohibits employers from using ostensibly neutral tests or allegedly objective selection procedures that have a discriminatory impact on persons based on age (40 or older), unless the challenged employment action is based on a reasonable factor “other than age” (*Smith v. City of Jackson*, 2005). Thus, if a test or other selection procedure has a disparate impact based on age, the employer must show that the test or device chosen was a reasonable one” (see Jones, 1987).

If an employer requires a prospective employee to take a test or meet certain educational or other requirements (such as possessing a high school or college diploma) before making a decision about hiring, work assignments, or job promotions, the United States Supreme Court held in *Griggs v. Duke Power Co.* (1971) that the “test” may not exclude people of a particular race, color, religion, sex (including pregnancy), or national origin, or individuals with disabilities, unless the employer can show that the test or a company’s employment requirements were necessary and related to “successful job performance.” In short, the Act does not preclude the use of testing or measuring procedures, but it does proscribe giving them controlling force unless they are demonstrably a *reasonable measure of job performance*.

In providing practical assistance to entities who continue to use “job testing” in their selection processes, the EEOC (2007) established “Employer Best Practices for Testing and Selection” which notes:

- “Employers should administer tests and other selection procedures without regard to race, color, national origin, sex, religion, age (40 or older), or disability.

- Employers should ensure that employment tests and other selection procedures are properly validated for the positions and purposes for which they are used. The test or selection procedure must be job-related and its results appropriate for the employer's purpose. While a test vendor's documentation supporting the validity of a test may be helpful, the employer is still responsible for ensuring that its tests are valid under UGESP.
- If a selection procedure screens out a protected group, the employer should determine whether there is an equally effective alternative selection procedure that has less adverse impact and, if so, adopt the alternative procedure. For example, if the selection procedure is a test, the employer should determine whether another test would predict job performance but not disproportionately exclude the protected group.
- To ensure that a test or selection procedure remains predictive of success in a job, employers should keep abreast of changes in job requirements and should update the test specifications or selection procedures accordingly.
- Employers should ensure that tests and selection procedures are not adopted casually by managers who know little about these processes. A test or selection procedure can be an effective management tool, but no test or selection procedure should be implemented without an understanding of its effectiveness and limitations for the organization, its appropriateness for a specific job, and whether it can be appropriately administered and scored."

3.3. Exceptions or Bona Fide Occupational Qualifications (BFOQs)

Both Title VII of the Civil Rights Act of 1964 and the Age Discrimination in Employment Act (ADEA) contain a BFOQ defense.

The BFOQ provision of Title VII provides that:

[I]t shall not be an unlawful employment practice for an employer to hire and employ employees, for an employment agency to classify, or refer for employment any individual, for a labor organization to classify its membership or to classify or refer for employment any individual, or for an employer, labor organization, or joint labor-management committee controlling apprenticeship or other training or retraining programs to admit or employ any individual in any such program, on the basis of his religion, sex, or national origin in those certain instances where religion, sex, or national origin is a bona fide occupational qualification reasonably necessary to the normal operation of that particular business or enterprise...

United States Code Title 29 (Labor), Chapter 14 (age discrimination in employment), section 623 (prohibition of age discrimination) establishes that:

"It shall not be unlawful for an employer, employment agency, or labor organization (1) to take any action otherwise prohibited under subsections (a), (b), (c), or (e) of this section where age is a bona fide occupational qualification reasonably necessary to the normal operation of the particular business, or where the differentiation is based on reasonable factors other than age, or where such practices involve an employee in a workplace in a foreign country, and compliance with such subsections would cause such employer, or a corporation controlled by such employer, to violate the laws of the country in which such workplace is located."

Examples of bona fide occupational qualifications under the ADEA or Title VII are mandatory retirement ages for bus drivers and airline pilots, which are justified on the basis of "public safety" considerations. Further, in the field of advertising, a manufacturer of men's clothing may lawfully advertise for male models. Religious affiliation may also be considered as a BFOQ. For example, a "religious school" (operated by a church, a "religious organization," or non-profit) may lawfully require that members of its faculty be members of a particular denomination, and may lawfully bar from employment anyone who is not a member. An educational institution such as a high school or grammar school (Smith, 2020) or a college or university operated by a religious group or religious order may lawfully require such positions as president, chaplain, and its teaching faculty to be a member of that particular faith, under what is termed a "ministerial exception" (Ferris, 2021). However, membership in a particular faith would generally not be considered a BFOQ for occupations such as secretarial and janitorial positions under current court precedents.

While religion, sex, or national origin may be considered a bona fide occupational qualification in narrow contexts, “race can never be a BFOQ” (Kissinger, 1995, p. 1431, citing *Knight v. Nassau County Civil Service Commission* (1981); 42 U.S.C. Section 2000e-2(e)(1)).

3.4. Sexual Harassment in the Workplace (see Roscigno, 2019)

There are two types of sexual harassment: one form of sexual harassment is known as "quid pro quo" (something for something) (Toke, 2023), and a second form of sexual harassment classified as creating a “hostile environment” (Thomas, 2021). The common thread in the two classifications involves the legal requirement that the act of harassment must be unwelcome and/or pervasive.

In a "quid pro quo" sexual harassment, the harasser is normally one who is in a position of power or authority, i.e., a supervisor or manager. The victim is usually an individual who feels that he or she must perform or respond to a sexual advance in order to gain something in return. Under "hostile environment" sexual harassment, the victim must show a general pattern of conduct by the offender that leads to deterioration in the work environment of the victim.

Legal Match (2023) states: “Some examples of scenarios for which an employer may be held liable for sexual harassment can include the following:

- When an employer is viewed as the proxy of their employees, such as the CEO of a corporation;
- If an employer does not take reasonable steps to prevent the occurrence and continuance of a hostile work environment.
- When there is evidence that the employer themselves has committed a form of sexual harassment; especially, if it is “quid pro quo” sexual harassment; and/or
- If the employer has direct authority over an employee or an employee’s supervisor and does not instruct that employee or supervisor to stop their unwanted sexual behavior.”

“On the other hand, an employer will most likely not be liable for a claim involving sexual harassment if they took reasonable steps to stop it and it is between parties who are under the direction of other supervisors at the company” (Legal Match, 2023). If a supervisor's harassment results in a hostile work environment, the employer can avoid liability if it can prove that: 1) it reasonably tried to prevent and promptly correct the harassing behavior; and 2) the employee unreasonably failed to take advantage of any preventive or corrective opportunities provided by the employer.

The employer may be liable for harassment by non-supervisory employees or non-employees over whom it has control such as independent contractors or even customers on the premises, if the employer “knew, or should have known” about the harassment and failed to take prompt and appropriate corrective action.

In *Oncale v. Sundowner Offshore Services, Inc.* (1998), the U.S. Supreme Court held that sexual harassment by persons of one sex against persons of the same sex is actionable under Title VII (Paetzold, 1999). The plaintiff, Oncale, was employed as a “roustabout” as one of an eight-man crew on an offshore oil rig. He claimed that he was forcibly subjected to sex-related, humiliating actions against him by certain coworkers. [The case describes the actions in graphic detail.] Oncale eventually quit and stated that he did so in order to avoid being raped or forced to have sex. In an opinion of the District Court affirmed by the Fifth Circuit Court of Appeals, the District Court held that a male has no cause of action under Title VII for harassment by male co-workers.

The United States Supreme Court reversed the decision of the Fifth Circuit and held that nothing in Title VII necessarily barred a claim of sex discrimination merely because the plaintiff and the defendant are of the same sex. The Supreme Court held that “only the plaintiff’s sex is relevant in determining whether a Title VII violation has occurred. The sex of the perpetrator could be the same as, or different from, the sex of the plaintiff. Title VII outcomes are determined by whether a chance in the terms or conditions of the plaintiff’s employment has occurred because of his or her sex” (Paetzold, 1999, p. 253, quoting *Oncale*). The Court rejected the notion that coverage of same-sex harassment would turn Title VII into a “general civility code” for the workplace

(*Oncale*, p. 80). A plaintiff is still obligated to prove that the conduct at issue was “discrimination because of his or her sex,” stated the Court. In addition, the Court noted that Title VII does not reach ordinary socializing, but rather forbids only behavior “so objectively offensive as to alter the conditions’ of the victim’s employment” (*Oncale*, p. 81).

Justice Scalia, who authored the opinion of the Court, added: “Common sense, and an appropriate sensitivity to social context, will enable courts and juries to distinguish between simple teasing or roughhousing among members of the same sex, and conduct which a reasonable person in the plaintiff’s position would find severely hostile or abusive” (*Oncale*, p. 82)

3.5. How *Bostock* Further Changes the Equation (Shannon & Hunter, 2020)

In three cases that reached the United States Supreme Court, an employer allegedly fired a long-time employee simply for being homosexual or transgender. Clayton County, Georgia, fired Gerald Bostock for conduct “unbecoming” a county employee shortly after he began participating in a gay recreational softball league. Altitude Express fired Donald Zarda days after he mentioned being gay. And R. G. & G. R. Harris Funeral Homes fired Aimee Stephens, who presented as a male when she was hired, after she informed her employer that she planned to “live and work full-time as a woman.” Each employee sued, alleging sex discrimination under Title VII of the Civil Rights Act of 1964. The Eleventh Circuit held that Title VII does not prohibit employers from firing employees for being gay and so Mr. Bostock’s suit could be dismissed as a matter of law. The Second and Sixth Circuits, however, allowed the claims of Mr. Zarda and Ms. Stephens, respectively, to proceed (*Bostock v. Clayton County, Georgia*, 2020, p. 1734).

In *Bostock v. Clayton County, Georgia* (2020), a historic case decided by the United States Supreme Court on Monday, June 15, 2020, the Supreme Court in a 6-3 decision ruled that Title VII of the Civil Rights Act of 1964 protects gay, lesbian, and transgender people from discrimination in employment “on the basis of sex,” one of the protected categories under the Act (Weiss, 2020).

The United States Supreme Court had been asked to decide two discreet questions in *Bostock* and two companion cases, *Altitude Express Incorporated v. Zarda* and *Harris v. EEOC* (Valenti, 2021):

“Does Title VII of the Civil Rights Act of 1964, which prohibits employment discrimination “because of ... sex,” encompass discrimination based on an individual’s sexual orientation?”

“Does Title VII of the Civil Rights Act of 1964 prohibit discrimination against transgender employee based on (1) their status as transgender or (2) sex stereotyping?”

To the surprise of many pundits, Justice Neil Gorsuch, a Trump appointee to the Court, authored the 6-3 majority opinion and answered these two questions in the affirmative (see Neidig, 2020). Justice Gorsuch wrote for the Court: “An employer who fires an individual for being homosexual or transgender fires that person for traits or actions it would not have questioned in members of a different sex. ... Sex plays a necessary and undisguisable role in the decision, exactly what Title VII forbids” (*Bostock*, p. 1337). Gorsuch added:

“An individual’s homosexuality or transgender status is not relevant to employment decisions. That’s because it is impossible to discriminate against a person for being homosexual or transgender without discriminating against that individual based on sex” (*Bostock*, p. 1741).

Justice Gorsuch’s majority opinion concludes with a “pure expression of textualism” (Poindexter, 2020):

“In Title VII, Congress adopted broad language making it illegal for an employer to rely on an employee’s sex when deciding to fire that employee. We do not hesitate to recognize today a necessary consequence of that legislative choice: An employer who fires an individual merely for being gay or transgender defies the law” (*Bostock*, p. 1754).

Justices Samuel Alito, Brett Kavanaugh, and Clarence Thomas dissented. “The Court tries to convince readers that it is merely enforcing the terms of the statute, but that is preposterous,” Alito wrote in the dissent. “Even as understood today, the concept of discrimination because of ‘sex’ is different from discrimination because of ‘sexual orientation’ or ‘gender identity’” (*Bostock*, p. 1755).

Justice Kavanaugh wrote in a separate dissent that the Court was rewriting the law to include gender identity and sexual orientation—a job that belongs to Congress, and not to courts.

“Like many cases in this Court, this case boils down to one fundamental question: Who decides? Title VII of the Civil Rights Act of 1964 prohibits employment discrimination “because of” an individual’s “race, color, religion, sex, or national origin.” The question here is whether Title VII should be expanded to prohibit employment discrimination because of sexual orientation. Under the Constitution’s separation of powers, the responsibility to amend Title VII belongs to Congress and the President in the legislative process, not to this Court” (*Bostock*, p. 1823).

And then Justice Kavanaugh seemed to “want to have it both ways” by making a rather “bizarre” statement.” Justice Kavanaugh acknowledged that the decision represents an “important victory achieved today by gay and lesbian Americans.” Justice Kavanaugh wrote:

“Millions of gay and lesbian Americans have worked hard for many decades to achieve equal treatment in fact and in law. They have exhibited extraordinary vision, tenacity, and grit — battling often steep odds in the legislative and judicial arenas, not to mention in their daily lives. They have advanced powerful policy arguments and can take pride in today’s result” (*Bostock*, p. 1837)

Justice Alito raised the possibility of a future controversy and added that employers who have religious objections to employing LGBT people also might be able to raise those claims in a different case (see, e.g., Junker, 2019).

4. The Age Discrimination in Employment Act (ADEA) (Hunter, Shannon, & Amoroso, 2018; Hunter, Shannon, & Amoroso, 2019)

The Age Discrimination in Employment Act of 1967 is a statute that prohibits employment discrimination against any person at least 40 years of age in the United States (see Willis, 2020; Kenton, 2022). When enacted in 1967, the ADEA cited the frequent practice of using “arbitrary age limits” in making staffing decisions. The intent of the Act, found in the Congressional statement of findings and purpose, is “to promote employment of older persons based on their ability rather than age; to prohibit arbitrary age discrimination in employment; to help employers and workers find ways of meeting problems arising from the impact of age on employment.”

Willis (2020, p. 73) stated: “A plaintiff must establish a prima facie case for age discrimination by showing: he or she is over the age of forty; is qualified for the position; suffered damages as a result of an adverse employment decision; and was replaced by a younger person.”

The ADEA was signed into law by President Lyndon B. Johnson as part of his “civil rights” legislative agenda. The ADEA prevents age discrimination and provides equal employment opportunity under conditions that were not explicitly covered in Title VII of the Civil Rights Act of 1964. The ADEA also applies to the standards for pensions and benefits provided by employers, and requires that information concerning the needs of older workers be provided to the general public by the EEOC.

The ADEA includes a broad ban against age discrimination and specifically prohibits (U.S. Code Section 623):

- *Employers* from discrimination with respect to “compensation, terms, conditions, or privileges of employment, because of such individual’s age.”

In addition, Section 623:

- Makes it unlawful for an *employer* to “limit, segregate, or classify” employees in any way which would “deprive or tend to deprive any individual of employment opportunities or otherwise adversely affect [his] status as an employee because of such individual’s age”;
- Makes it unlawful for an *employer* to “reduce the wage rate of any employee”;
- Makes it unlawful for an *employment agency* to “fail or refuse to refer for employment, or otherwise discriminate against, any individual because of such individual’s age, or to classify or refer for employment any individual on the basis of such individual’s age”;
- Makes it unlawful for a *labor organization* to “exclude or expel from membership, or otherwise to discriminate against, any individual because of his age” or to “limit, segregate, or classify its membership, or to classify or fail or refuse to refer for employment any individual, in any way which would deprive or tend to deprive any individual of employment, or would limit such employment opportunities or otherwise adversely affect his status as an employee or as an applicant for employment, because of such individual’s age”;
- Makes it unlawful for an employer, labor organization, or employment agency to “print or publish, or cause to be printed or published, any notice or advertisement relating to employment by such an employer or membership in or any classification or referral for employment by such a labor organization, or relating to any classification or referral for employment by such an employment agency, indicating any preference, limitation, specification, or discrimination, based on age” (see also Burn et al., 2020).

In 1978, Congress amended the original statute in order to extend the ADEA’s protections to workers to 70 years of age, replacing the Act’s initial upper age limit of 65. Pursuant to the Age Discrimination in Employment Amendments of 1986, the Congress then removed the upper age limit eligible, although several recognized exceptions remained.

Since 1986, the ADEA has effectively prohibited mandatory retirement in most employment sectors, with phased elimination of mandatory retirement for certain “tenured workers,” such as college professors (Novotny, 1981), which was eliminated in 1993 (see Fitzgerald, 2018).

4.1. Exemptions and Exceptions

An age limit may be legally specified in the circumstance where age has been shown to be a “bona fide occupational qualification reasonably necessary to the normal operation of the particular business.” Willis (2020, p. 74) notes: “The ADEA covers most professions; however, there are a wide range of exemptions available to employers, including carveouts for executives, high policy makers, judges, commercial airline pilots, firefighters, and law enforcement officers, just to name a few. These exemptions enable businesses to impose mandatory retirement, despite the fact that age is an arbitrary factor.”

In practice, BFOQs for age are limited to the obvious (for example, casting a young actor to play a young character in a movie) or when public safety is at stake (for example, in the case of age limits for airline pilots and bus drivers). Tully (1977, p. 511) stated: “Courts have been more lenient in sustaining a finding of BFOQ exception where the job places the employee in a special relationship to the public at large (citing *Airlines Pilots Ass'n v. Quesada*, 1961; *McIlvaine v. Pennsylvania State Police*, 1971).”

Mandatory retirement based on age may also be permitted for corporate executives over age 65 in high policy-making positions who are entitled to a pension over a minimum yearly amount (see Tully, 1977). As Willis (2020, p. 74) states: “The exemption for bona fide executives and high policymakers allows for compulsory retirement of any employee who has attained 65 years of age and who, for the two-year period immediately before retirement, is employed in a bona fide executive or a high policymaking position.”

Section 623(f)(2) of ADEA provides: “It shall not be unlawful for an employer, employment agency, or labor organization . . . to observe the terms of . . . any bona fide employee benefit plan such as a retirement, pension, or insurance plan, which is not a subterfuge to evade the purposes of this chapter, except that no such employee benefit plan shall excuse the failure to hire any individual....”

In more general terms, Willis (2020, p. 104) provides an apt summary of the policy debate on the efficacy and importance of the ADEA:

“Individual assessments are needed in order to reduce discrimination in mandatory retirement policies that are still in place. Previous studies have shown that individual assessments are a more effective predictor than age as a way to measure the ability of a person to perform a job. Policies regarding exceptions to the ban on mandatory retirement need to be amended in order to limit discriminatory practices and protect the elderly. Retirement policy also needs to be addressed in consideration of the needs of changing demographics. Occupational assessments for employees of certain professions must be implemented to reduce discrimination in a world where people are living and working longer in order to effectively accomplish the aims of the ADEA.”

However, a significant limitation on the rights of an individual to successfully litigate a case of age discrimination was created in *Gross v. FBL Financial Services* (2009), where the United States Supreme Court ruled that a plaintiff must prove by a preponderance of evidence that age was the “but for” cause of any adverse employment action (see Van Ostrand, 2009; Eyer, 2021).

5. The Americans with Disabilities Act (ADA) (Bowman, 2011; Hunter & Shannon, 2017)

The ADA is a wide-ranging statute that broadly prohibits discrimination based on disability (see Essex-Sorlie, 1994). Rosenthal (2006, p. 895) stated:

“When President George H. Bush signed the Americans with Disabilities Act (ADA) into law, he hailed it as a landmark piece of legislation that would open many ‘once-closed’ doors for individuals with disabilities. One of the ADA’s most noticeable features is that in addition to prohibiting employers from firing and failing to hire individuals with disabilities, it places an affirmative obligation on employers to accommodate an employee’s or a candidate’s disability....”

The ADA generally applies to “public accommodations.” According to the ADA National Network (2023): “A public accommodation is a private entity that owns, operates, leases, or leases to, a place of public accommodation. Places of public accommodation may include a wide range of entities, such as restaurants, hotels, theaters, doctors’ offices, pharmacies, retail stores, museums, libraries, parks, private schools, and day care centers. Private clubs and religious organizations are exempt from the ADA’s title III requirements for public accommodations.”

The term “disability” is defined by the ADA as “... a physical or mental impairment that substantially limits a major life activity” (Jones, 2006) The determination whether any particular condition is considered a disability is made on a case by case basis. Certain specific conditions are excluded from the definition of a disability, such as current substance abuse (from the use of illegal drugs) and visual impairment that is correctable by prescription lenses. The Department of Justice, Civil Rights Division (U.S. Department of Justice (ADA.gov), 2023) noted:

“People with OUD [Opioid Use Disorder] typically have a disability because they have a drug addiction that substantially limits one or more of their major life activities. Drug addiction is considered a physical or mental impairment under the ADA. Drug addiction occurs when the repeated use of drugs causes clinically significant impairment, such as health problems and or an inability to meet major responsibilities at work, school, or home. People with OUD may therefore experience a substantial limitation of one or more major life activities, such as caring for oneself, learning, concentrating, thinking, communicating, working, or the operation of

major bodily functions, including neurological and brain functions. The ADA also protects individuals who are in recovery, but who would be limited in a major life activity in the absence of treatment and/or services to support recovery” (see SAMHSA, 2023).

The ADA states that a *covered entity* shall not discriminate against a *qualified individual with a disability* (see Bangerter & Kleiner, 2005; Anderson, 2006). The ADA applies to job application procedures, hiring, advancement and discharge of employees, workers' compensation, job training, and other terms, conditions, and privileges of employment. The term *covered entity* can refer to an employment agency, labor organization, or joint labor-management committee, and is generally an employer engaged in interstate commerce with 15 or more employees. Discrimination may include limiting or classifying a job applicant or employee in an adverse way; denying employment opportunities to individuals who otherwise qualify for employment; not making reasonable accommodations to the known physical or mental limitations or relating to learning disabilities of disabled employees (see Leslie, Rumrill, McMahan, & Cormier, 2023); not advancing or promoting employees with disabilities; and/or not providing accommodations in creating training materials or formulating employment policies, which may include providing qualified readers or interpreters for employees (see Kiviniemi & Sanjo, 2012).

Employers can use medical examinations for applicants, after making an offer of a job, only if *all* applicants (regardless of disability) must take the examination and if it is treated as a confidential medical record. As noted, *qualified individuals* do not include any employee or applicant who is currently engaging in the *illegal* use of drugs when that usage is the basis for the employer's actions.

5.1. What is "reasonable accommodation"?

A reasonable accommodation (Bowman, 2011) is any modification or adjustment to a job or the work environment that will enable an “otherwise qualified applicant” or employee with a disability to participate in the application process or to perform essential job functions (see Keating, 2010). A reasonable accommodation also includes necessary adjustments to assure that a qualified individual with a disability has rights and privileges in employment equal to those of employees without disabilities (Mello, 1993).

Examples of reasonable accommodation may include:

- making existing facilities used by employees readily accessible to and usable by an individual with a disability;
- restructuring a job (Coffield, 2023);
- modifying work schedules;
- acquiring or modifying equipment;
- providing qualified readers or interpreters;
- or appropriately modifying examinations, training, or other programs (Timmons, 2005; Repa, 2023).

A reasonable accommodation also may include reassigning a current employee to a vacant position for which the individual is qualified (Wilson, 2022), if the person is unable to do the original job because of a disability even with an accommodation (Befort & Donesky, 2000). However, there is no obligation to find a position for an applicant who is not “otherwise qualified” for the position sought. Employers are not required to lower quality or quantity standards as an accommodation; nor are they obligated to *provide* personal use items such as glasses or hearing aids to employees at the employer’s expense.

The decision relating to the appropriateness of any accommodation must be based on the particular facts of each case because the nature and extent of a disability and the requirements of a job will vary in each case. In selecting the particular type of reasonable accommodation, the principal test is that of *effectiveness*, i.e., whether the accommodation will provide an opportunity for a person with a disability to achieve the same level of performance and to enjoy the benefits of employment equal to those of an “average, similarly situated person” without a disability. However, the accommodation does not have to ensure equal results or provide exactly the same benefits.

An employer is only required to accommodate a "known" disability of a qualified applicant or employee. The requirement generally will be triggered by a request from an individual with a disability, who frequently will be able to suggest an appropriate accommodation.

If the individual does not request an accommodation, the employer is not obligated to provide one, except where an individual's disability impairs his/her ability to know of, or effectively communicate a need for, an accommodation that is obvious to the employer.

5.2. Limitations on the Obligation to Make a Reasonable Accommodation

The individual with a disability requiring the accommodation must be "otherwise qualified." In addition, an employer is not required to make an accommodation if it would impose an "undue hardship" on the operation of the employer's business.

"Undue hardship" is defined as an "action requiring significant difficulty or expense" when considered in light of a number of factors. According to MRA (2023), "Factors used to determine whether an undue hardship exists include:

- The nature and cost of the accommodation.
- The size, type, and financial resources of the specific facility where the accommodation would occur.
- The overall size, type of operation, and financial resources of the covered employer."

Undue hardship is likewise determined on a case-by-case basis (see McCord, 2023). Where a facility or business is part of a larger entity, the structure and overall resources of the larger organization would be considered, as well as the financial and administrative relationship of the facility or business to the larger organization. In general, a larger employer with greater resources would be expected to make accommodations requiring greater effort or expense than would be required of a smaller employer with fewer resources (Shinn, 2016).

Norman (2014) noted "ADA 'undue hardship' standard is tough to prove" for an employer.

If a particular accommodation would amount to an undue hardship, the employer must attempt to identify another accommodation that will not pose such a hardship. Also, if the cost of an accommodation would impose an undue hardship on the employer, the individual with a disability should be given the option of paying that portion of the cost which would constitute an undue hardship or providing the accommodation.

The employer's obligation under Title I of the ADA is to provide access for an *individual* applicant to participate in the job application process, and for an *individual* employee with a disability to perform the essential functions of his/her job, including access to a building, to the work site, to needed equipment, and to facilities used by employees. For example, if an employee recreation or "break" area is located in a place or facility inaccessible to an employee using a wheelchair, the place or facility might be modified or relocated, or comparable facilities might be provided in a location that would enable the individual with a disability to take a break with co-workers. The employer must provide such access unless it would cause an undue hardship, as discussed above.

Under Title I, an employer is not required to make its existing facilities accessible until a particular applicant or employee with a particular disability demonstrates a need for an accommodation, and then the modifications should meet that individual's specific work needs. However, in the spirit of the ADA, employers should at least consider initiating changes that will provide general accessibility for all employees as well as for job applicants, since it is quite likely that people with disabilities will be applying for jobs.

Burden (2019) suggests the following as "best practices" of a decidedly pro-active strategy for businesses and other entities who are attempting to comply with both the "letter and spirit" of the ADA. These include:

"1: Write clear employee handbook policies

Employers should have a handbook policy that instructs employees to contact HR if they need accommodations to perform the essential functions of their job. There should also be a policy in the handbook stating that the company does not retaliate against employees who request accommodations, she said.

2: Don't skimp on training for supervisors and managers

Employers need to train supervisors and managers on recognizing the needs of employees and responding to them in an appropriate and lawful way.

3: Request medical documentation only when necessary

Experts have recommended that employers require medical documentation only when necessary. The EEOC takes the position that employees may not even be required to start the interactive process when a need is obvious.

Requiring the employee to provide medical information from his or her health professional typically comes into play when the disability is invisible to the employer.

4: Ensure job descriptions stay true to job duties

Job descriptions should accurately outline job duties, experts say. Descriptions can help establish expectations for employees and also set a baseline for what employers do or do not have to accommodate.

5: Maintain flexibility

It's important for employers to stay flexible. Rigidly following set practices or using certain technologies might cause compliance complications.

An employer who conducts initial job interviews only by phone, for example, would need to find other options to accommodate a deaf applicant, she said. And while flow charts or standardized checklists can help an employer navigate the accommodation process, employers should understand and accept alternatives and recognize other options that may work better for an applicant or employee in a particular situation.

6: Move the interactive process forward

The interactive process is so important. Through it, the employer can show that it made every effort to engage with the employee. If the employee refuses to communicate, then the employer can show that it made a good-faith effort and the employee didn't engage. But if the employer is responsible for ending the process too early, that can serve as evidence of an ADA violation... HR [should] be trained on the components of a "good, interactive process system."

7: Document the dialogue

Documenting the interactive process is critical step for the employer. Many employers fail to keep adequate documentation of the dialogue and fail to confirm steps taken and/or agreements made in writing. Keeping thorough, contemporaneous documentation is critical."

6. Conclusions and Commentary

While a full understanding of the statutory materials, major cases, and regulatory materials in the area of employment law and employment discrimination is still an important obligation of managers in the business environment, it must also be recognized that the "world of employment" is rapidly changing. The "industrial economy" of the 1930s through the 1980s is literally being transformed into a "knowledge economy" where patterns of work are subject to challenges not before experienced or anticipated. The workplace is no longer dominated by "traditional" 40-hour employees and is composed today of nearly 50% of employees who are temporary, part-time, or independent contractors (see U.S. Department of Labor, 2023).

This "new reality" poses a unique challenge to managers who must adapt the statutory and regulatory scheme of traditional "employment law" to employees of various stripes, responsibilities, physical conditions, orientations, ethnicities, ages, languages, etc. This challenge is also shared by the legal system itself who will be responsible to construct a new approach to the legal environment of employment that will reflect this "new reality" in statutory, regulatory, and case developments. Whether or not managers or the legal system itself will be successful is another matter.

References

- ADA National Network (2023). What are public accommodations? Adata.org, <https://adata.org/faq/what-are--public-accommodations> (accessed March 4, 2023).
- Age Discrimination in Employment Act. 81 Stat. 602 (1968).
- Age Discrimination in Employment Amendments of 1986. Public Law No: 99-592 (1986).
- Airline Pilots Ass'n v. Quesada. 286 F.2d 319 (1961). (U.S. Court of Appeals for the 2nd Circuit)
- Altitude Express Incorporated v. Zarda (2021). 140 S. Ct. 1731 (United States Supreme Court).
- Americans with Disabilities Act. 104 Stat. 327 (1990).
- Anderson, C.L. (2006). What is "because of the disability" under the Americans with Disabilities Act? Reasonable accommodation, causation, and the Windfall doctrine. *Berkeley Journal of Employment & Labor Law*, 27: 323-382.
- Andrews, K.T. & Gaby, S. (2015). Local protest and federal policy: The impact of the civil rights movement on the 1964 Civil Rights Act. *Sociological Forum*, 30(51): 509-527.
- Bangerter, R. & Kleiner, B.H. (2005). Equal Opportunities International, 24(5/6): 86-92.
- Befort, S.F. & Donesky, T.H. (2000). Reassignment under the Americans with Disabilities Act: Reasonable accommodations, affirmative action, or both? *Washington & Lee Law Review*, 57: 1045-1094.
- Beugnot, J. & Peterle, E. (2020). Gender bias in job referrals: An experimental test. *Journal of Economic Psychology*, 76: 102209, <https://EconPapers.repec.org/RePEc:eee:joepsy:v:76:y:2020:i:c:s016748701930090x>
- Bostock v. Clayton County, Georgia (2020). 140 S. Ct. 1731 (United States Supreme Court).
- Bowman, L. (2011). Americans with Disabilities Act as amended: Principles and practice. *New Directions for Adult & Continuing Education*, Winter 2001, 132: 85-95.
- Brown, P. (2014). The Civil Rights Act of 1964. *Washington University Law Review*, 92(2): 527-552.
- Burden, L. (2019). 7 best practices for ADA compliance. HR Dive (January 7, 2019), <https://www.hrdiver.com/news/7-best-practices-for-ada-compliance/545109/>
- Burlington Industries, Inc. v. Ellerth (1998). 534 U.S. 743 (United States Supreme Court).
- Burn, I. et al. (2020). Older workers need not apply? Ageist language in job ads and age discrimination in hiring. National Bureau of Economic Research (NBER) Working Paper 26552 (May 2020), <https://www.nber.org/papers/w26552>
- Burns, J.E. & Burns, C.G. (1973). An analysis of the Equal Pay Act. *Labor Law Journal*, 24(2): 92-99.
- Chambers, J.L., Jr. (2008). Civil Rights Act of 1964. University of Richmond Scholarship Repository, <https://scholarship.richmond.edu/law-faculty-publications/928/>
- Civil Rights Act of 1964. 78 Stat. 241 (1964).
- Cleveland Board of Education v. LaFleur (1974). 414 U.S. 632 (United States Supreme Court).
- Coffield, T. (2023). ADA job restructuring law. Coffield Law (Blog), <https://coffieldlaw.com/ada-job-restructuring-law/> (accessed March 6, 2023).
- Corning Glass Works v. Brennan (1974). 417 U.S. 188 (United States Supreme Court).
- Elisburg, D. (1978). Equal pay in the United States: The development and implementation of the Equal Pay Act of 1963. *Labor Law Journal*, 29(4): 195-208.
- Equal Pay Act of 1963. 77 Stat. 56 (1963).
- Eyer, K. (2021). The but-for theory of anti-discriminatory law. *Virginia Law Review*, 107: 1621-1710.
- Essex-Sorlie, D. (1994). The Americans with Disabilities Act: I. History, summary, and key components. *Academic Medicine*, 69(7): 519-524.
- Faragher v. City of Boca Raton (1998). 524 U.S. 775 (United States Supreme Court).
- Ferris, K. (2021). Supreme Court expands ministerial exception to lay teachers at Catholic elementary schools- *Our Lady of Guadalupe School v. Morrissey-Berru*. *Suffolk University Law Review*, 54: 423-437.
- Fitzgerald, D.K. (2018). A professor's last crucial decision: When to retire. The Chronicle of Higher Education (May 30, 2018), <https://www.chronicle.com/article/a-professors-last-crucial-decision-when-to-retire/>
- Franklin v. Gwinnett County Public Schools (1992). 503 U.S. 60 (United States Supreme Court)
- Gaffney, E.J., Jr. (1985). Factors other than sex: The catchall exception to the Equal Pay Act. *Cooley Law Review*, 3(1): 75-96.
- Griggs v. Duke Power Co. (1971). 401 U.S. 424 (United States Supreme Court).
- Gross v. FBL Financial Services (2009). 557 U.S. 167 (United States Supreme Court).
- Grossman, J.L. (2009). The Lilly Ledbetter Fair Pay Act of 2009: President Obama's first signed bill restores essential protection against pay discrimination. Find Law (February 13, 2009), <https://supreme.findlaw.com/legal-commentary/the-lilly-ledbetter-fair-pay-act-of-2009-1.html>
- Harris v. EEOC (2021). 140 S. Ct. 1731 (United States Supreme Court).

- Hunter, R.J. & Shannon, J.H. (2017). The confluence of the Americans with Disabilities Act with administrative law: The case of the recalcitrant or perhaps dangerous employee. *Texas Tech Administrative Law Journal*, 18(1): 83-101.
- Hunter, R.J., Shannon, J.H., & Amoroso, H.J. (2018). A fresh look at an old problem- Age discrimination in employment: Is there a demographic and political trap? *Journal of Public Administration and Government*, 8(1): 68-85.
- Hunter, R.J., Shannon, J.H., & Amoroso, H.J. (2019). Employment discrimination based on age: Part II: Applying the ADEA in employment scenarios: Discrimination, idle chatter, or something else? *Journal of Public Administration and Governance*, 9(1): 1-17.
- Johnson v. Transportation Agency (1987). 480 U.S. 616 (United States Supreme Court).
- Jones, N.L. (2006). The Americans with Disabilities Act (ADA): The definition of disability. Congressional Research Service, Washington, DC, <https://digital.library.unt.edu/ark:/67531/metacrs9274/>
- Jones, S.M. (1987). Applying disparate impact theory to subjective employee selection procedures. *Loyola of Los Angeles Law Review*, 20(2): 375-420.
- Junker, M. (2019). Ending LGBTQ employment discrimination by Catholic institutions. *Berkeley Journal of Employment and Labor Law*, 40(2): 403-442.
- Keating, A. (2010). Reexamining reasonableness: An analysis of reasonable accommodation under the ADA. SSRN Electronic Journal, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1597416
- Kenton, w. (2022). Age Discrimination in Employment Act of 1967. Investopedia, <https://www.investopedia.com/terms/a/age-discrimination-employment-act-1967.asp>
- Kissinger, A. (1995). Civil rights and professional wrongs: A female lawyer's dilemma. *Texas Law Review*, 73: 1419-1460.
- Kiviniemi, J. & Sanjo, C. (2012). The Americans with Disabilities Act: Provisions and protections. Nova Science Publishing: Hauppauge, N.Y, https://www.researchgate.net/publications/291107716_The_Americans_with_Disabilities_Act_ADA_Provisions_and_protections
- Knight v. Nassau County Civil Serv. Comm'n (1981). 649 F.2nd 157 (United States Court of Appeals for the 2nd Circuit).
- Legal Match (2023). Employer liability for sexual harassment. Legal Match, <https://www.legalmatch.com/law-library/article/employer-liability-for-sexual-harassment.html> (accessed March 5, 2023).
- Leslie, M., Rumrill, P.D., McMahon, B. & Cormier, A.G. (2023). Differences in Americans with Disabilities Act Title 1 discrimination allegations filed by people with learning disabilities and other disabilities. *Journal of Vocational Rehabilitation* (Pre-press): 1-10, <https://content.iospress.com/articles/journal-of-vocational-rehabilitation/jvr230003>
- Lilly Ledbetter Fair Pay Act. 123 Stat. 5 (2009).
- Loevy, R.D. (1990). To end all segregation: The politics of the passage of the Civil Rights Act of 1964. *Philosophy Papers*, <https://philpapers.org/rec/LOETEA-3>
- McCord, M. (2023). What does "undue hardship" mean? - A deconstructive series for ADA terminology. JAN (Job Accommodation Network), <https://askjan.org/articles/Undue-Hardship-is-a-Process.cfm> (accessed March 4, 2023).
- McIlvane v. Penn. State Police. 3 Pa. Commw. 478 (1971). (Supreme Court of Pennsylvania).
- Mello, J.A. (1993). Employing and accommodating workers with disabilities: Mandates and guidelines for labor relations. *Labor Law Journal*, 44(3): 162-170.
- Meritor Savings Bank v. Vinson (1986). 477 U.S. 57 (United States Supreme Court).
- MRA (2023). Determining undue hardship under the ADA. MRANET.org, <https://www.mranet.org/resource/determining-undue-hardship-under-ada> (accessed March 4, 2023).
- Neidig, H. (2020). Workers can't be fired for being gay or transgender, Supreme Court rules. The Hill (June 15, 2020), <https://thehill.com/regulation/court-battles/502729-supreme-court-rules-lgbt-workers-protected-by-civil-rights-law/>
- Norman, J. (2014). ADA 'undue hardship' standard is tough to prove. Louisville Business First (June 27, 2014), <https://www.bizjournals.com/louisville/print-edition/2014/06/27/ada-undue-hardship-standard-is-hard-to-prove.html>
- Novotny, J. (1981). Mandatory retirement of higher education faculty. AAHE-ERIC Higher Education Currents (February 1981), <https://eric.ed.gov/?id=197693>
- Oncale v. Sundowner Offshore Serv. (1998). 523 U.S. 75 (United States Supreme Court)
- Our Lady of Guadalupe School v. Morrissey-Berru (2020). 140 S. Ct. 2049 (United States Supreme Court).
- Paetzold, R.L. (1999). Same-sex sexual harassment, revisited: The aftermath of *Oncale v. Sundowner Offshore Services, Inc. Employee Rights and Employment Policy Journal*, 3(2): 251-268.
- Poindexter, H. (2020). A textualists dream: Reviewing Justice Gorsuch's opinion in *Bostock v. Clayton County*. *University of Cincinnati Law Review* (Blog) (June 23, 2020), <https://uclawreview.org/2020/06/23/a-textualists-dream-reviewing-justice-gorsuchs-opinion-in-bostock-v-clayton-county/>

- Repa, B.K. (2023). Your right to a reasonable accommodation under the Americans with Disabilities Act (ADA). Nolo, <https://www.nolo.com/legal-encyclopedia/free-books/employee-rights-book/chapter7-8.html> (accessed March 4, 2023).
- Roscigno, V.J. (2019). Discrimination, sexual harassment, and the impact of workplace power. *Socius: Sociological Research for a Dynamic World*, 5: 1-21.
- Rosenthal, L.D. (2005). Reasonable accommodations for individuals regarded as having disabilities under the Americans with Disabilities Act? Why “no” should not be the answer. *Seton Hall Law Review*, 36: 895-969.
- SAMHSA (Substance Abuse and Mental Health Services Administration) (2023). Mental health and substance use disorders. SAMHSA.gov, <https://www.samhsa.gov/find-help/disorders> (accessed March 6, 2023).
- Shannon, J.H. & Hunter, R.J., Jr. (2020). The Civil Rights Act of 1964: Beyond race to employment discrimination based on sex: The “three letter word” that has continued to vex society and the United States Supreme Court. *Journal of Social and Political Sciences*, 3(3): 613-636.
- Shinn, J. (2016). “Reasonable accommodations” and “undue hardship” defenses- It comes down to money. Michigan Employment Law Advisor (January 25, 2016), <https://www.michiganemploymentlawadvisor.com/americans-with-disab...commodations-and-undue-hardship-defenses-it-comes-down-to-money>
- Sincoff, M.Z., Slonaker, W.M., & Wendt, A.C. (2006). Retaliation: The form of 21st century employment discrimination. *Business Horizons*, 49(6): 443-450.
- Smith v. City of Jackson (2005). 544 U.S. 228 (United States Supreme Court).
- Smith, A. (2020). Supreme Court expands religious-school exemption from civil rights laws. SHRM.org (July 8, 2020), <https://www.shrm.org/resourcesandtools/legal-and-compliance/employment-law/pages/ministerial-exception-discrimination.aspx>
- Stoilkoska, A., Ilieva, J., & Gjakovski, S. (2015). Equal employment opportunities in the recruitment and selection process of human resources. UTMS (University of Tourism and Management, Skopje, Macedonia) Journal of Economics, 6(2): 281-292.
- Sullivan, C.A. (1978). The Equal Pay Act of 1963: Making and breaking a prima facie case. *Arkansas Law Review*, 31(4): 545-606.
- Thomas, J.H. (2021). Evolution of sexual harassment law. How do I know a “hostile environment” when I see it? Journal of Foodservice Business Research, <https://scholars.fiu.edu/display/pub190727>
- Timmons, K.C. (2005). Limiting “limitations”: The scope of the duty of reasonable accommodation under the Americans with Disability Act. *South Carolina Law Review*, 57: 313-355.
- Toke, N. (2023). The complete guide to handle quid pro quo harassment. Diversity for Social Impact, <https://diversity.social/quid-quo-quo-harassment/>
- Tully, R.F. (1977). Involuntary retirement under the Age Discrimination Employment Act: The bona fide employee benefit plan exception. *Fordham Urban Law Journal*, 5: 509-520.
- U.S. Department of Labor (Women’s Bureau) (2023). Full-time/part-time employment. dol.gov, <https://www.dol.gov/agencies/wb/data/latest-annual-data/full-and-part-time-employment> (accessed March 8, 2023).
- U.S. Department of Justice (2023). The ADA and opioid use disorder: Combating discrimination against people in treatment or recovery. ADA.gov, <https://www.ada.gov/resources/opioid-use-disorder/> (accessed March 6, 2023).
- U.S. Equal Employment Opportunity Commission (2007). Employment tests and selection procedures. EEOC.gov (December 1, 2007), <https://www.eeoc.gov/laws/guidance/employment-tests-and-selection-procedures>
- Valenti, A. (2021). LGBT employment rights in an evolving legal landscape: The impact of the Supreme Court’s decision in *Bostock v. Clayton County, Georgia*. *Employee Responsibilities and Rights Journal*, 33: 3-23.
- Van Ostrand, L.A. (2009). A close look at ADEA mixed-motives claims and *Gross v. FBL Financial Services, Inc.* *Fordham Law Review*, 78(1): 399-451.
- Weiss, M. (2020). Sexual orientation and gender identity encompassed within prohibition against employment discrimination because of sex: *Bostock v. Clayton County*. *International Labor Rights Case Law*, 6: 288-294.
- Willis, C.C. (2020). Age is just a number, not a reason to force retirement. *International Aging Law & Policy*, 11: 67-104.
- Wilson, B. (2022). Mandatory reassignment under the Americans with Disabilities Act: The Fourth Circuit weighs in. *Wake Forest Law Review*, 12: 1-23.