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Evaluation of Turkish Teaching Set Prepared for Syrian Immigrant Students in Turkey According to Teachers' Views

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Abstract

Many resources are used when teaching Turkish about the immigrant future in Turkey. At the beginning of these sources used are the textbooks in which explanations are used. The descriptive model was used in the qualitative research designs of this education, according to the purpose of evaluating the Turkish education set consisting of three books and economics within the scope of the Project for Supporting the Integration of Syrian Children into the Turkish Education System (PICTES). Easy cost case run, one of the purposive run methods, was used to calculate the run data. For this purpose, 20 teachers who used the Turkish teaching set were interviewed and semi-interviews were conducted. The collected data were analyzed using content analysis and presented on the analyzed tables. Based on the opinions received from teachers; The Turkish education set has been presented in terms of form, content, learning-oriented distribution, sophisticated conformity, contribution to teaching from narratives, and general evaluation of the books. As a result of the study, the teacher; Although some deficiencies were declared in the study set, it was determined that the evaluations for the study set were positive.

Keywords: Immigration, Immigrants, Teaching Turkish, Teaching Turkish to Foreigners, Turkish Teaching Set

1. Introduction

1.1 Introduce the Problem

Immigration, the causes of which can change depending on the place, time and conditions, and which is multidimensional, is a phenomenon that concerns different fields in social sciences and should be dealt with from all aspects by these fields. Migration has important consequences for both immigrants and the societies and

countries that accept them. When well-managed, it can benefit both immigrants and host countries and communities. Therefore, it is important to consider different aspects. But the most difficult and comprehensive one is the issue of education of immigrants. Turkey; In addition to an education system that takes into account the increasing and changing demands of people today, an education system that takes into account the increasing and continuing migration towards it should be planned (Bozkaya, 2021a). The most basic purpose of teaching Turkish to immigrant children in Turkey is for these children to express themselves in Turkish both verbally and in writing. In order to achieve this goal, studies on teaching Turkish to foreigners are carried out. "PICTES project was carried out so that immigrant students can learn Turkish better" (Bozkaya, 2020). These studies are supported with different materials and teaching activities are shaped. The first of these materials is the textbook. Textbook; It is one of the tools that are prepared to realize the aims of education and training activities and that make learning activities a source (Halis, 2002). In addition, it is the material prepared in order to reach the goals determined in line with the expectations and needs of the students (Cunningsworth, 1995). In the words of Gün and Şimşek, (2017) and Karababa (2009), the textbooks, which are also used in teaching Turkish to foreigners, are the most preferred materials, although there are many materials. For this reason, textbooks used for foreign students to learn Turkish should be carefully prepared so that they guide students or teachers. Therefore, while preparing textbooks; It states that principles such as meaningfulness, from the known to the unknown, using more examples, relativity, completion, selectivity, invariance in perception, closure, unifying, depth, novelty, simplicity, suitability for the target audience should be taken into consideration (Duman, 2013). In addition, Bozkaya (2022b) stated in his study that most of the teachers were indifferent and inadequate in language-related problems while expressing problems related to education. Foreign language teaching books prepared in accordance with the functions of the textbooks will play an important role in teaching the target language to the students. The factors to be considered in the preparation of the textbooks to be used for teaching Turkish as a foreign language can be given as follows:

• The target audience who will use the textbook

- Learning teaching principles
- General framework
- Physical properties
- Cultural features
- The language and expression features of the book
- Grammar teaching (Demir, 2015).

In that case; What should be the characteristics of the textbooks prepared for teaching Turkish to foreigners? Textbooks should be suitable for the target audience in terms of elements such as design and content features, language features, instructiveness, intelligibility and usability, and should also be suitable for use with other materials (Tosunoğlu, Arslan, & Karakuş, 2001). However, textbooks have various functions. These functions are; informative, instructive, experimental, enlightening and encouraging research (Tomlinson, 2012). All these features that should be included in the textbooks prepared for the purpose of teaching Turkish as a foreign language; It is very important for learners to use the language by teaching Turkish more easily and effectively. Apart from these qualities that the textbooks should have, it is also important that the textbooks are more in quantity and that there are sets prepared for different target audiences and levels, both in terms of diversity and in choosing the most suitable book for the characteristics of the students. Because, in most studies, "it has been pointed out that immigrant students have language problems" (Bozkaya, 2021b). As a matter of fact, there are many textbooks prepared for the purpose of teaching Turkish as a foreign language. "Istanbul Turkish for Foreigners Textbook, Altay Turkish Teaching Set, İzmir Turkish for Foreigners, Journey to Turkish Turkish Teaching Set, Turkish for Foreign Students and Hello Turkish Teaching Set" are some of these books. Another material prepared for the purpose of teaching Turkish to foreigners is the Turkish teaching set. The Turkish teaching set, prepared by the General Directorate of Lifelong Learning within the scope of PICTES, consists of 1 student workbook and 2 student books for the 6-12 age level. This set was published in 2019 and was especially used in Turkish learning activities of Syrian students.

When the literature is examined, it is seen that there are many studies on the examination or evaluation of textbooks prepared for the purpose of teaching Turkish as a foreign language (Göçer, 2007; Toprak, 2011; Kılınç and Özdemir, 2013; Tok, 2013; Gün, Akkaya and Kara, 2014; Demir, 2015). ; Yenen, 2015; Yavuz Kırık, 2015; Fidan,

2016; Biçer and Kılıç, 2017; Gün and Şimşek, 2017; Bingöl, 2017; Kalaycı and Durukan, 2019; Tüm and Ceyhan; Bozkaya, 2021c; Bozkaya, 2022a). In these studies, textbooks; The qualities that must be possessed, physical and content features, features of activities, the place of language skills in books, language and expression features of books, measurement and evaluation dimension are discussed.

It is very important to get the opinions of the students or teachers about the books in the evaluation of the Turkish teaching set. For this reason, the lack of a study on the evaluation of the Turkish teaching set prepared especially for Syrian students to learn Turkish and the thought that it will contribute to the field necessitated this research.

1.2 State Hypotheses and Their Correspondence to Research Design

In the research, which aimed to get the opinions of teachers about the Turkish teaching set, answers were sought for the following questions in line with this main purpose:

- What are the teachers' views on the content features of the Turkish teaching set?
- What are the teachers' views on the distribution of learning areas in the teaching set?
- What are the opinions of the teachers about the suitability of the Turkish teaching set for the age level?
- What are the teachers' views on the contribution of the activities in the teaching set to teaching?
- What are the teachers' views on the general evaluation of the Turkish teaching set?

2. Method

In this study, which was conducted to evaluate the Turkish teaching set according to the opinions of teachers, a descriptive model, one of the qualitative research designs, was used. "Qualitative research is the research in which qualitative data collection methods such as observation, interview and document analysis are used, and a qualitative process is followed to reveal the events in a natural environment in a realistic and holistic way." (Yıldırım ve Şimşek, 2018). In the studies conducted in descriptive design, there is an in-depth analysis of the subject discussed. For this purpose, a semi-structured teacher interview form was used to collect the research data. The semi-structured interview form provides a more detailed examination of the researched subject together with the fixed choice answer (Creswell, 2012).

2.1. Working group

Easily accessible case sampling, which is one of the purposeful sampling methods, was used in the research. In this direction, opinions were received from 20 teachers who teach Turkish to Syrian students and use the Turkish teaching set. Information on the characteristics of the study group is presented in Table 1:

Table 1: Characteristics of the working group

		(f)	**N**
Gender	male	12	20
	Woman	8	
Year of Duty	Hatay	20	20
Type of School Served	Primary school	15	
	Middle School	5	20
Graduated Department	primary school teacher	15	20
	Turkish teacher	5	

2.2. Data collection tool

In the research, a semi-structured interview form was used to collect the opinions of teachers about the Turkish teaching set. During the preparation of the interview form, opinions were received from 3 academicians who are

experts in teaching Turkish to foreigners and 3 lecturers who teach Turkish as a foreign language. The form, which was finalized in line with expert opinions, was applied to the teachers.

2.3. Analysis of data

Coding was done on the semi-structured interview forms filled by the teachers and the findings were subjected to content analysis. In order to ensure the coding reliability of the research, separate coding was done by both researchers. In order to calculate the reliability of the coding, the formula determined by Miles and Huberman (1994) was used and the reliability between the coders was determined as .84. The findings obtained from the research are presented in tables, and some opinions about the codes are also given directly.

3. Findings and Interpretation

The findings of the study examining the opinions of teachers about the Turkish teaching set used in primary and secondary schools within the scope of teaching Turkish to Syrian immigrant students; The Turkish teaching set has been presented under separate headings in terms of format, content, distribution of learning areas, suitability for the level, contribution of the activities to the teaching and teachers' opinions about the general evaluation of the books.

The opinions obtained from the teachers regarding the content features of the Turkish teaching set are presented in Table 2:

Table 2: Opinions on content features of Turkish teaching set

	(f)	**%**
Content is not enough	5	16,9
Events are not enough	5	16,9
Suitable for student level	4	13,5
Content not suitable for immigrant	4	13,5
The content is simple and	2	6,6
Associated with daily life	2	6,6
Current events not included	2	6,6
Content gains covered	2	6,6
Topics in the content are given	2	6,6
Content does not serve the intended	1	3,3
Content should be supported with more	1	3,3
Total	**30**	**100**

Table 2 includes the opinions obtained from the teachers about the content features of the Turkish Teaching Set, which was prepared for foreign students to learn Turkish. As a result of the opinions obtained from the teachers, it was determined that the students and workbooks were not sufficient in terms of content (n=5) and the activities in the books were not sufficient (n=5) as the most stated opinions. Considering the opinions of teachers obtained in this context, it is seen that the books in Turkish teaching are insufficient in terms of content. The fact that the content was prepared in accordance with the level of the student (n=4) is the third opinion reported by the teachers. The content is not suitable for immigrant students (n=4), it does not include current events in the content (n=2), the topics are presented superficially (n=2), the content does not serve the purpose (n=1), and the content should be supported with visuals (n=1) are other negative opinions obtained. Apart from these, the fact that the content is simple and understandable (n=2) and that the content covers the achievements (n=2) are among the positive opinions obtained from the teachers. When the findings were examined, it was seen that the views of the teachers on the content features of the Turkish teaching set were mostly negative. The teacher's view on the fact that the content of the Turkish teaching set is not suitable for the target audience is as follows:

T 14 (Turkish teacher): The content is not sufficient for immigrant students in secondary school. I think there should be longer and more difficult texts. I also think that there should be words in the texts that they have not seen before and that they can use in their lives, and that the texts should be supported by visuals.

The teacher's opinion, stating that the contents of the teaching set are clear, understandable and prepared for the student, is as follows:

T1 (Classroom teacher): The content was very good. Our students enjoyed participating in the lesson. The content is not boring, on the contrary, the information is supported with images.

The opinions of the teachers regarding the distribution of the learning areas in the Turkish teaching set were taken and the information about this is presented in Table 3:

Table 3: Views on the distribution of learning areas in the teaching set

	F	%
Appropriate in terms of the distribution of language skills	8	29,6
It should be improved in terms of content distribution	7	24,0
Not enough speaking activity	4	13,8
Not enough listening activity	3	10,2
Not enough write activity	2	6,8
There is enough reading activity	2	6,8
There is enough speaking activity	1	3,3
There is enough listening activity	1	3,3
Inadequate in grammar teaching	1	3,3
Total	**29**	**100**

The views of teachers regarding the distribution of learning areas in the Turkish teaching set are given in Table 3. According to the results obtained from the teachers' opinions, it is seen that the distribution of language skills is appropriate (n=8). The second opinion is that the content should be developed in terms of distribution (n=7). From this point of view, it is seen that the views of teachers are close to each other. While it is of great importance to include the basic language skills of listening and speaking in the books, when the opinions obtained from the teachers are examined, it is concluded that there is not enough activity about speaking (n=4) and there are no activities related to listening (n=3). Enough activities related to writing (n=2), sufficient activities related to reading (n=2), sufficient activities related to speaking (n=1), and sufficient activities related to listening (n=2) =1) is also one of the opinions obtained from the teachers. 1 view that students and workbooks are insufficient in grammar teaching is also seen in the table. This view is as follows:

T 2 (Classroom teacher): The language was given plainly. It does not contain words that the student can force. The length of the sentence is also appropriate. The scarcity of inverted sentences and the use of simpler sentences instead of compound sentences are appropriate for the level of children.

Basic language skills are not evenly distributed throughout the book; One of the teachers' views on the inadequate listening and speaking skills is as follows:

T 8 (Turkish teacher): It seems that basic language skills are not evenly distributed in the textbooks. Because there are few activities that involve listening and speaking skills. More emphasis is placed on literacy skills. It is very well formed, especially in terms of making language skills felt at primary school level without overwhelming the rules.

Within the scope of teaching Turkish to foreigners, teachers' opinions were taken about whether the Turkish teaching set used for Syrian students is suitable for their age level (6-12 years old), and the information about this is presented in Table 4:

Table 4: Opinions on the appropriateness of the Turkish teaching set for age levels

	(f)	%
Appropriate for the level	15	51,3
Not suitable for all levels	10	35,7
Suitable for primary school level	3	10,5
Not suitable for secondary school level	1	3,5
Total	**28**	**100**

In Table 4, the opinions of teachers about how suitable the Turkish teaching set prepared for teaching Turkish to Syrian students are for the level of students (6-12 years old) are given. When Table 4 is examined, the finding that the prepared books are suitable for the level of students (n=15) was obtained in line with the opinions of the majority of the teachers. It has been concluded that the books prepared for the 6-12 age group are not prepared for all levels (n=10), that the books prepared are not for a certain age level and that there is no age discrimination in the books. On the other hand, 3 of the opinions are that the books are suitable for primary school level. 1 opinion was expressed that it is not suitable for secondary school level. Turkish teaching set has been prepared for students between the ages of 6-12. However, the fact that this set is also used in all levels of secondary school has caused the teachers working there to express their opinions that it is not suitable for the level. The teacher's opinion on the fact that it would be better to prepare the prepared books at the grade level rather than age groups is as follows:
T 7 (Turkish teacher): Creating it in this way causes some problems. I think it would be more appropriate to create a class instead.

The opinions of the teachers about the fact that the Turkish teaching books prepared are suitable for the ages of 6-12, but not at the level of students at the secondary school level are as follows:
T 13(Turkish teacher): It is not very suitable for secondary school level.

Teachers' opinions were taken about the activities in the Turkish teaching set used and the contribution of these activities to teaching, and the information about these opinions is presented in Table 5:

Table 5: Opinions on the contribution of the activities in the books to teaching

	(f)	%
Insufficient number of events	9	31,9
The activities are suitable for teaching Turkish to	5	17,1
The activities are insufficient for teaching Turkish.	4	13,6
Activities at basic level	3	10,2
Activities are enough	2	7,8
Activities support language teaching	2	7,8
Activities reinforce and complement learning	1	3,4
Activities associated with daily life	1	3,4
Activities not suitable for middle school students	1	3,4
Activities above student level	1	3,4
Total	**29**	**100**

Table 5 shows the opinions of the students and the teachers about the activities in the workbooks. The most stated opinion is that the number of activities is insufficient (n=9). The teachers stated that the activities in the books were insufficient in number, and they stated that depending on this situation, learning could not be fully achieved or the teaching of basic language skills was insufficient. It was also expressed by the teachers that the activities included in the books within the scope of teaching Turkish to foreigners are appropriate (n=5). Four opinions were expressed that the activities in the books were insufficient for teaching. Another view is that the activities that have been prepared are basic and simple. 3 opinions are in this direction. The positive findings determined in line with the opinions obtained from the teachers are that the activities are sufficient (n=2), support language teaching (n=2), reinforce and complement learning (n=1). In addition to these findings, there are other findings that are above the student level (n=1). In line with the findings obtained, the opinions of the teachers about the inadequacy of the activities are as follows:
T 18 (Turkish teacher): The activities are good but not too many, they are insufficient for the students and permanence is not provided.
T 9 (Turkish teacher): Although the activities in the book are considered sufficient for some skills, they are insufficient for some skills. For example, although there are more activities involving speaking and writing skills in the book, there are more activities involving reading and writing skills.

The teacher's view on the fact that the Turkish teaching set has a reinforcing effect but these activities do not contribute to the permanence of learning is as follows:

T 15 (Turkish teacher): I think the examples in the workbook are at a level to reinforce the activities in the student's book; I do not think that it is sufficient in terms of permanence in learning.

The opinions of the teachers about the general evaluation of the Turkish teaching set were taken and the information about this is presented in the Table:

Table 6: Opinions on the General Evaluation of the Turkish Teaching Set

	(f)	%
Suitable	14	50
Should be improved	10	30
Not available	5	20
Total	**30**	**100**

The general opinions about the Turkish teaching set prepared for the purpose of teaching Turkish to foreigners are shown in Table 6. 14 opinions indicate that the set used is appropriate; 10 opinions are that the used set should be improved, and the last 5 opinions are that the used set is not suitable. One view of the set's overall usefulness is as follows:

T 2 (Classroom teacher): I liked the last set very much. The levels were collected in separate books, and they published the books considering the teaching principles from easy to difficult, known to unknown, concrete to abstract. In this last set, basic language skills are integrated, complementing each other.

The opinion that the Turkish teaching set is not prepared in accordance with the target audience and that the books are not suitable is as follows:

T 19 (Turkish teacher): Lifelong Turkish teaching set was prepared by considering the aims and principles of language teaching. While preparing the books, they also considered the audience that the book will address, but the age group was not considered at the point of distribution to schools. Because the activities in the books are below the interests, needs and age level of the secondary school student.

One of the opinions about the development and review of the training sets used is as follows:
T 16 (Classroom teacher): Activities should be organized very well in terms of paper quality, the content should be arranged about different books according to student levels, more visuals should be arranged as an additional book and activities intertwined with life should be increased

4. Conclusion and Discussion

The following results were obtained in this research, in which teachers' opinions were taken about the Turkish teaching set prepared to teach Turkish to Syrian immigrant students:

When the teachers' views on the physical characteristics of the Turkish teaching set are examined; It is understood that both primary school teachers and Turkish teachers generally consider the physical features of the teaching set sufficient. Adequate visuals, appropriate font size, physical usefulness, strong binding and sufficient number of pages are among the views supporting the physical features of the books. On the other hand, there are also teacher opinions that the teaching set is physically inadequate. The fact that the books are not physically appealing to different age groups, that the visuals are insufficient, that the visuals are not clear and that the number of pages is not considered sufficient are the opinions that show that the books are physically inadequate. The physical features of the Turkish teaching set are as important as the content features. As a matter of fact, Gün et al. (2014), in which teachers' opinions were taken, it was concluded that the physical properties of the books to be used at school are as important as the content properties. When it is considered in terms of being attractive, presenting the content more aesthetically and providing motivation, it is also revealed how much importance should be given to the physical characteristics of the books. When the literature is examined, results regarding the physical properties of the books have been found. In the research conducted by Biçer and Kılıç (2017), it was determined that the teachers considered the books physically sufficient in general. This result is in line with the results obtained in the research.

However, in the studies conducted by Kılınç and Yenen (2015) and Demirci (2015), they found results indicating that some physical properties were not sufficient.

When the opinions of the teachers about the content features of the Turkish teaching set were examined, it was determined that the teachers did not see the books as sufficient in terms of content in general. Expressions such as the lack of activities and examples of the teaching set, the content not suitable for the target audience, the absence of current events, the superficial presentation of the subjects, the fact that the content does not serve the purpose are the opinions supporting the content to be seen as inadequate. However, there are also opinions stating that the content is considered sufficient. The positive opinions are that the content is suitable for the level of the student, that the content is simple and understandable, and that it covers the achievements. When the literature is examined, studies that reveal opinions about the content of the books have been found. Demirci (2015) stated in his research that reading texts are not sufficient. In their study, Moralı (2018) concluded that the books were insufficient in terms of content, and Dilek, Boyaci, and Yaşar (2018) concluded that the materials were insufficient in terms of content.

When the teachers' views on the distribution of learning areas of the teaching set were examined, it was determined that they generally thought that the skills had an appropriate distribution. On the other hand, there are also teachers who think that the distribution should be revised and that the distribution is insufficient. According to these teachers, some skills are not given much space. Some of the teacher's views are that there are not enough activities for speaking skills, there are not enough activities for listening skills, or the books are insufficient in teaching grammar. Similar results were obtained in other studies as well. Biçer and Kılıç (2017) researched that listening and speaking skills were not sufficiently included in the books, there was no standardization in the distribution of grammar topics in the Fidan (2016) research, and Kalaycı and Durukan (2019) also stated that the activities for reading and writing skills in the books were not focused on listening and speaking skills. They determined that the number of activities was more than the number of activities.

When the opinions of the teachers about the suitability of the Turkish teaching set for the level of the student were examined, it was observed that there were opinions that the books were suitable for the level in general. However, the negative opinions stated that it is not suitable for all levels. In the studies in the literature, there are also results related to the suitability of the books for the level. Despite the result that the Turkish teaching set is suitable for the level in general, which emerged in the research, Beyhan and Epçaçan (2018) stated that the teaching set was not suitable for the level of the student in terms of content; In the study of Moralı (2018), the teaching set was not suitable for the level, and again Biçer and Kılıç (2017) reached the conclusion that the teaching set was not suitable for the level of the student.

When the opinions of the teachers about the activities in the Turkish teaching set are examined; Insufficient number of activities, insufficient support for teaching, repetition of each other, not suitable for the level and being difficult, besides being suitable for teaching, being sufficient, reinforcing and complementary, being related to daily life and paying attention to teaching principles. It has also been determined that there are positive opinions.

According to the opinions about the general evaluation of the Turkish teaching set, it was concluded that most of the teachers evaluated the books positively, some of them needed improvement, and some of them did not find the teaching set appropriate. With these findings, it was concluded that the teachers who used the teaching set generally liked the teaching set or had the opinion that it would become more suitable by eliminating the deficiencies in the set. In the study conducted by Biçer and Kılıç (2017), it was determined that teachers generally had a negative attitude towards the teaching set used.
Based on the results obtained, the following recommendations can be made:
• More attention should be paid to the details in all textbooks to be prepared.
• Particular attention should be paid to the formation of content in all textbooks to be prepared, especially at the student's home.
• Using enough space for all sections while it is a course book in language teaching.
• It is necessary to prepare different books for each education level.

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The Impact of Self-motivation on the Effective Job Performance of Staff: A Case Study of a Private Hospital in Kuala Lumpur, Malaysia

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Abstract
Like many other methodological motivations, the relationship between motivation and job satisfaction has been defined in many psychology studies. The model of impacts of rewards towards job satisfaction has been used by many organizations for their approach and reference. However, little research has been done to explore the impacts of self-motivation amongst staff at a private hospital in Kuala Lumpur towards their effective job performance. The paper is derived from factors that influence staff motivations and how these motivations can affect their job performance, using quantitative research data collection. The theory and results of the study are also briefly discussed. The Table of Reliability, Correlation and Regression analysis is presented in this thesis study for further reference. The results of this study suggest that the relationship between self-motivation and performance is a two-way relationship, where performance is also a key measure of a person's job satisfaction in his or her job. High job satisfaction, especially in the element of supervision, co-workers and the work itself can improve the emotions and behavior of employees in the workplace, as well as motivate employees to become more committed to attaining better performance.

Keywords: Self-Motivation, Job Satisfaction, Effective Job Performance

1. Introduction

Work is not only a source of income – it is more to the satisfaction of other needs such as the desire for competition, power, higher achievement as well as to determine the public opinion of their din. In this case, the individual will be happy, fun, and proud when their needs and satisfaction in the world of work have been met. On the other hand, negative feelings such as anger, resentment, boredom, and dissatisfaction will occur when their needs are not met; and this will have a big impact on the organization's progress. Work motivation is defined as the feeling or

emotional response of employees regarding aspects in a work situation; where employees who get encouragement and satisfaction in work will produce more quality and productive work (Kanfer et al., 2017). In other words, motivation is also defined as the essential factor for achieving one's goals (Azar & Sahar, 2021). It is contended that employees with extrinsic motivation require something in exchange for doing the duties assigned to them. Managers and coordinators must inspire them with awards to urge them to participate in the assigned responsibilities. It is essential in pushing and encouraging people to carry on with their daily activities. According to Andriani et al. (2018), work motivation refers to an employee's overall attitude towards his or her job. Moreover. according to Breaugh et al. (2018), the study of work motivation is a description of attitude rather than behavior. However, both attitudes and behaviors have a cause and effect toward effective performance. Azar & Sahar (2021, p. 35) contend that employees that are intrinsically motivated frequently motivate themselves from inner side through internalised processes. This sort of individual is eager to learn and work independently to reach his or her goals. Employees that are self-motivated do not require other individuals or external motivators if they have their own inner drive. Azar & Sahar (2021) further add that the inner selves of self-motivated people are eager to achieve their objectives and fulfil their wishes. In the context of self-motivation, newly employed individuals will accept whatever form of work is offered; however, when they have been working for a long time, the view on employment becomes broader and more meaningful (Çetin & Aşkun, 2018). Based on the above issues, this study intends to explore impacts of self-motivation amongst the employees at a private hospital in Kuala Lumpur, Malaysia on the effective job performance.

1.1 Self-Motivation on the Effective Job Performance

Past studies have shown that with the existence of work motivation and high commitment to the organization, an individual can exhibit behavior known as pro-social citizenship, which involves the attitude of liking and helping colleagues, helping and prioritizing customer interests as well as being willing to cooperate with each other (Olafsen et al., 2018). This includes assisting hospital patients in carrying out tasks, striving and having awareness to protect healthcare departmental interests and symptoms such as fire, theft, and damage by irresponsible people. Another organizational researcher, Demirhan et al. (2020) conducted a study on the hospital nurse and categorized three main factors that can influence job motivation. These were job characteristics (rewards, promotion opportunities, clear responsibilities, and opportunities for the use of skills), organizational characteristics (commitment to the hospital organization, good relationships with supervisors and doctors), and individual characteristics (age, race and gender). The researcher also found that improvements in all factors related to job characteristics and organizational characteristics have a positive effect in further increasing work motivation among hospital nurses.

For individual characteristics, the positive effect is only shown with age increase, while the influence of gender does not play an important role in determining such satisfaction. This is also in line with the recommendations of Ahlstedt et al. (2019) who have recommended several ways to increase work motivation amongst hospital staff such as the clarification of responsibilities and areas of responsibility, reducing control over employees, providing opportunities to plan and perform their own tasks, and giving authority and creativity to employees in carrying out their duties. In terms of personal factors that can affect job satisfaction, Abidin (2020) has categorized these personal factors of affecting job satisfaction into five main categories namely age, gender, race, personality, and cognitive abilities. Job motivation among hospital staff usually increases with increased employee age as displayed by a "U" shaped distribution. As for gender characteristics, male employees generally show a higher level of work motivation compared to women, while minority segments in an organization often have low work motivation. As for the personality aspect, a high locus of internal control and self-concept often shows a high degree of work motivation; however, it was also found that individuals who are fit and have cognitive abilities tend to find routine tasks boring and this lowers their level of motivation to work. According to Purwanti et al. (2020), the differences between male and female workers also depend on job factors (autonomy, use of skills, career development opportunities, status and salary), family factors (responsibility for family burdens) and social factors (education, age, religion and degree) can also influence work motivation differences between gender. In addition, Gunawan et al. (2019) stated that female workers will be more motivated to work than men if the aforementioned factors were evenly distributed among them.

A study by Breed et al. (2020) for nine countries in Europe found differences in the level of work motivation amongst hospital staff for these countries. In most of the countries surveyed, researchers found that more than 10% of employees said they did not get satisfaction or motivation from work. On the other hand, for countries categorized as industrial countries, only 3% of workers have high career motivation. Workers in the Republic of Ireland have the highest level of motivation and job satisfaction compared to other European countries. This situation exists as a result of the work culture and work patterns in Ireland which are less stressful and prioritize strong social relations. This finding is also supported by Djukic et al. (2020) where he found work stress that determines the level of motivation and satisfaction, as well as factors of economic and social conditions of a country. Organizational practices related to autonomy play an important role in determining work motivation among hospital staff (Phinari & Bernarto, 2020). The results of the study have proven that there are no differences in the level of work motivation between genders in organizations that give autonomy to female employees. Female employees at the management level are given more responsibilities. In addition, work motivation is also found to depend on one's age and duration of work. Manning (2016) found that age gives a "U" shaped distribution in determining work motivation. According to him, the level of work motivation amongst hospital staff at the beginning level is high, before decreasing and then increasing again as age increases until the end of the period of service.

Similarly, Ardita et al. (2019) found that only 5% of hospital staff aged 35 years and above do not have work motivation when compared with young hospital staff who mostly show a low level of work motivation. This opinion is supported by Hidayah and Fadila (2019) that staff of local with higher education positions prioritize a love for work as very important in determining their motivation and satisfaction. Recognition from employers and peers as well as academic freedom occupy the next place on the list of interests. Thus, it is important to explore what the impact of self-motivation is on the effective job performance amongst staff of private hospitals in Kuala Lumpur. Organizational behaviour researchers – Doloh et al. (2018) also formulated a similar matter where according to the authors, the importance of work motivation should be prioritized since the absence of motivation will cause behaviors such as skipping and changing work. For the employees themselves, low motivation will tend to exhibit physical and mental health disorders. Therefore, employees who have a high level of work motivation are more to be profitable and an important asset to the organization. According to Pundati et al. (2018), there is a positive relationship between work motivation and an individual's excellence, physical and mental health, and life satisfaction. They added that dissatisfaction in work can evoke various feelings such as frustration, truancy, job changes, mental and physical health disorders as well as internal conflicts within the organization. Therefore, it is very important to ensure that staff motivation is consistently maintained to avoid frustration, burn out, and a lack of interest towards their job which causes them to eventually leave the organization.

Besides, Sutarto et al. (2017) recommend every organization should always strive to improve its excellence in all aspects, especially in developing and enhancing knowledge, skills, attitudes, and values amongst all levels of its members. With this, the organization can increase the expectations of staff and organizations to achieve organizational excellence. The systematic control and management of human resource departments are also important in increasing employees' motivation, organizational productivity, and further achieving national vision. In this regard, management needs to foster good relations amongst employees, create a harmonious organizational climate and ensure that employees have high loyalty to their workplace organization. Therefore, based on the above research, this study seeks to explore the factors that influence staff motivation. The issue of maintaining staff loyalty to their organization is very challenging. However, from the various research studies available, the potential of retaining staff in an organization by ensuring staff motivation and job satisfaction is crucial because it will influence the staff to work more effectively and passionately, as well as clearly understanding the organization mission and becoming an important asset to the organization. In addition, from the study, the organization can help identify factors that influence staff motivation and what the organization can provide to ensure staff remain motivated throughout their career and achieve job satisfaction.

1.2 Job Satisfaction

Job satisfaction is the feeling experienced by an employee towards the work he or she does. This feeling of satisfaction will cause a person to always want to work with a full sense of responsibility (Ghazali & Turiman,

1995). Several studies have shown that employees who have a high level of job satisfaction will be more productive, as well as produce quality and good work (McNeese-Smith, 1996; Mullins, 1989; Nash, 1985; Schultz, 1982). While employees who are at a low level of job satisfaction tend to cause various problems to the organization such as truancy, lateness, and disciplinary problems (Lussier, 1990). Employee job satisfaction is very important for an organization because employees with job satisfaction tend to carry out their work sincerely and not complain about the work and instructions given. Even if the staff are not satisfied with the work that they do, they still complete their work even if they are not diligent (French & Saward, 1983; Locke, 1988). Katzell (1975) associated job satisfaction with feelings, the extent to which an employee likes or dislikes his or her work. According to him, employees are satisfied when they have a positive attitude towards work and job prospects, as well as being able to animate their work in accordance with their lives. Apart from that, according to Wan Ahmad (2000), job satisfaction is considered as a feeling of fun or positive emotions resulting from the evaluation of positions held in the work environment.

1.3 Relationship Between Employees Motivation and Job Satisfaction

The relationship between employee motivation and job satisfaction is also currently being studied and some researchers (Heneman et al., 1988; Igalens & Roussel, 1999; Pool, 1997) have concluded that job motivation and job satisfaction should be investigated separately, so that the factors influencing the results of the study are easier to identify and better understand. Herzberg (2003) Two-Factor Theory identifies intrinsic factors and hygiene factors that tend to be extrinsic factors. Herzberg argues that these factors lead to job satisfaction because they meet individual needs to realize themselves (Maslow, 1954; Tietjen & Myers, 1998). In contrast, the Theory of Expectations as developed by Porter and Lawler (1968), argues that pay-for-performance systems can influence job satisfaction (Ferris, 1977; Igalens & Roussel, 1999). Supporting this view, Pool (1997) studied the relationship between job motivation and job satisfaction and found a significant positive relationship between them; where as work motivation increases, job satisfaction also increases. Although the argument that the positive relationship between extrinsic factors and job satisfaction is more dominant, Frey (1997) gives an opposing opinion. Frey argues that intrinsic factors can increase because of work improvement programs that contribute to work ethic improvement (Frey, 1997).

When the pleasure of an employee advances their work, the instinctive factor can affect the extrinsic factor (Frey, 1997). However, researchers who support the theory of self-determination argue that the pay-for-performance system can have a positive effect on intrinsic factors by supporting and promoting employee autonomy and self-esteem (Deci & Ryan, 2008; Gagné & Deci, 2005). However, this theory does not state whether extrinsic motivation will decrease, or if intrinsic factors increase. Job satisfaction is also associated with performance (Halkos & Bousinakis, 2010), quality (Wood et al., 2012), and performance efforts (Apostle et al., 1985; Muse & Stamper, 2007; Pettijohn et al., 2008). Leach (1998) conducted a study on job satisfaction and performance among salespeople.

Studies have shown that motivational control and emotional control affect sales performance. As performance improves, job satisfaction also increases. Job satisfaction is also associated with motivation (Egan et al., 2004). From research on hospital department employees in large companies, studies show that job satisfaction positively influences motivation for learning transfer (Egan et al., 2004). In addition, this study also concludes that job satisfaction is related to motivation to share knowledge. According to Gholizade et al. (2014), in their study of 250 employees in the field of healthcare and public hospitals in the Boyerahmad Kohkiluyeh in Iran found that job satisfaction can be a major factor influencing work motivation and commitment to the study.

1.4 Relationship between Factors Influencing Self-Motivation and Effective Job Performance Among Employees

There are various factors that influence the effective job performance of employees. With the increase in employees' self-motivation, job performance is expected to become more effective. Firstly, a good working environment influences self- motivation and results in effective job performance (Ghaffari, Shah, Burgoyne, Nazri & Salleh, 2017). Working environment can be defined as the place employees work which affects their self-motivation and job performance (Ghaffari et al., 2017). This is key so that employees not only increase their

motivation to do more but also become more involved in their work, contributing to the growth of their respective organizations (Ghaffari et al., 2017). The result of all this will be absolute satisfaction for employees, increasing productivity of work, and increased organization benefits (Ghaffari et al., 2017).

The second factor influencing self-motivation and effective job performance is appreciation given by employer to the employees (Geiger, 2022). Appreciation can be defined as employers showing gratitude or the way the management of an organization thanks their employees (Geiger, 2022). Every employee who works in an organization must like when the work they do is appreciated by the employer or other colleagues (Geiger, 2022). Employers should always give praise for achievements by employees (Geiger, 2022). Employees who received appreciation at least once a year showed an improvement in terms of job performance compared to those who did not receive any direct appreciation from the organization since appreciation boosts self-motivation (Geiger, 2022).

The third factor is growth opportunities as gaining self-motivation and effective job performance (Faisal & Al-Rasheed, 2021). The potential for employees to be promoted or gain skill training and development can be summed up as a growth opportunity (Faisal & Al-Rasheed, 2021). The ability to evolve in an organization can increase employee self-motivation to be loyal and dedicated to work (Faisal & Al-Rasheed, 2021). One of the most crucial factors in fostering employee engagement is growth (Faisal & Al-Rasheed, 2021). If employees had more opportunity to grow, they will push their self-motivation to become better employees and show positive job performance (Faisal & Al-Rasheed, 2021).

1.5 Relationship between Impacts of Self-Motivation and Effective Job Performance Among Employees

Self-motivation of employees impacts job performance. Firstly, self-motivation enhances productivity of effective job performance (Mikhailova, 2021). In general, work productivity is measuring quality and quantity in certain units to achieve results and effective job performance (Mikhailova, 2021). Thus, productivity is related to inputs and outputs (Mikhailova, 2021). Elements included in work productivity and effectiveness which are related to maximum job performance by gaining self-motivation (Mikhailova, 2021). Second, self-motivation leads the focus of staff to a direction which the result is to accomplish effective job performance (Mikhailova, 2021). When employees are self-motivated to accomplish the job given, good focus and planning are needed for which job to be accomplished first (Mikhailova, 2021). Employees can prioritize their job list depending on deadline (Mikhailova, 2021).

Even for employees who have had difficulties and challenges during the job, self- motivation and a positive attitude helps employees maintain their focus on the vision and objectives until they achieve effective job performance (Geiger, 2022). Thirdly, self-motivation will ensure that employees achieve personal job growth in effective job performance. Self-motivation in personal job growth in terms of knowledge and skill is important for employees achieving effective job performance (Geiger, 2022). Hence, self-motivation can drive personal growth in terms of job promotion since it enhances job performance (Geiger, 2022).
Employees need to realise that self- motivation helps them a lot with effective job performance and gives positive impact to their personal job growth (Geiger, 2022).

1.6 Research Questions

1. What are the factors that influence self-motivation towards effective job performance of staff at a private hospital in Kuala Lumpur, Malaysia?
2. What is the impact of self-motivation on the staff's effective job performance at a private hospital in Kuala Lumpur, Malaysia?

1.7 Limitation of Study

The limitation of this study is that only one issue was examined – staff motivation at a private hospital in Kuala Lumpur. Thus, it is advisable to explore further in future regarding the challenges faced by organizations in terms

of retaining jobs or increasing staff wages. This study also focuses on collecting data using a questionnaire only in Kuala Lumpur.

2. Methodology

2.1 Research Design

Quantitative research is used for this research design where a questionnaire survey was used to collect data from respondents to achieve the research goal.

2.2 Sampling Procedure

The population study for this research was typically considered from one private hospital in Kuala Lumpur and its total was 985 staff of the hospital. The questionnaire was distributed to the managers, executive staff, assistant managers, senior managers, and finally head of departments through the WhatsApp and Telegram links. Those staff who were available and free at their office time at the hospital were only able to respond the researchers' questionnaire (100 respondents), which is the sample size of this project. The convenience sampling method was selected for this study.

3. Results and Discussion

3.1 Presentation, Analysis, and Interpretation of Data

The data analysis result of this study where the researcher will show the outcome of the SPSS analysis for readers to digest. SPSS offers a program that assists researchers with complex data analysis needs and is used widely by health researchers.
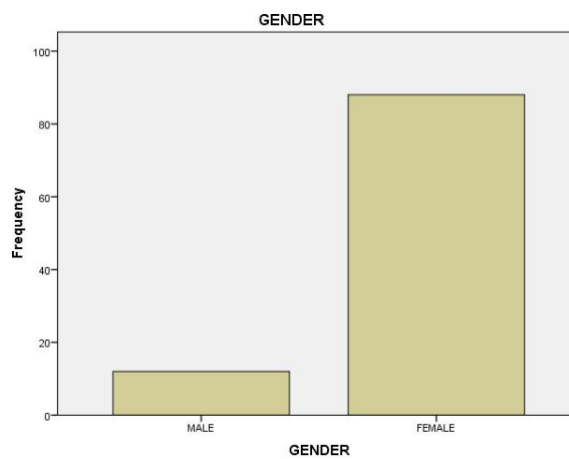
Figure 1: Gender Status

Based on Figure 1, the summary of gender status can be found where the majority of respondents were female with a total of 88 participants and only 12 male participants.
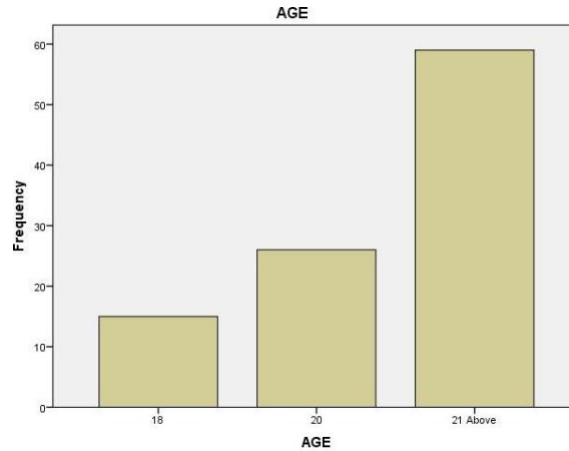
Figure 2: Age Status

Based on Figure 2, the summary of age status shows that the majority of respondents were 21 years and above (59 respondents), followed by 20-year-old participants (26 respondents), and finally 18-year-old participants (15 respondents) who represented the minority.
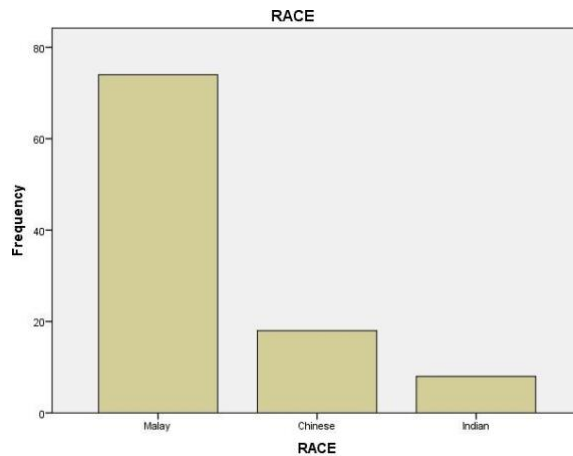
Figure 3: Race Status

Based on Figure 3, the summary of race status showed that many respondents were Malay with a total of 74 respondents, followed by a total of 18 Chinese respondents, and only 8 Indian participants.
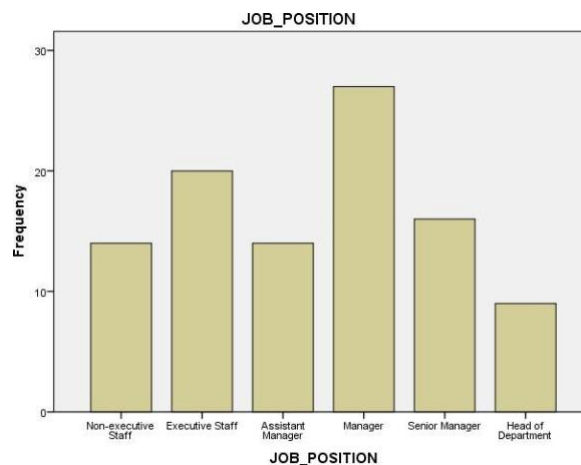
Figure 4: Job Position Status

Based on Figure 4, the summary of job position found that many of the respondents were managers (27 respondents), followed by executive staff (20 respondents), assistant managers (14 respondents), senior managers (16 respondents), and finally head of departments (9 respondents).
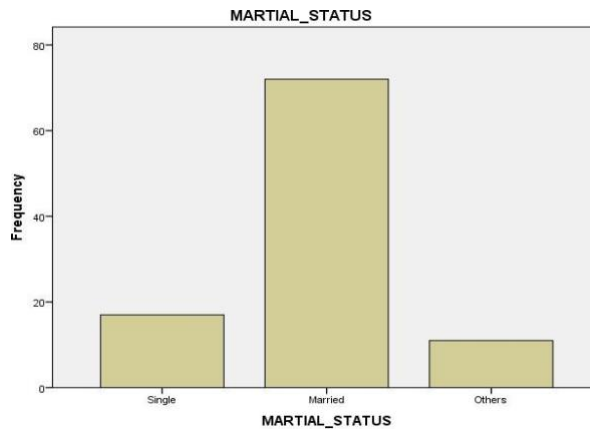
Figure 5. Marital Status

Based on Figure 5, the summary of marital status found that the majority of respondents were married with a total of 72 respondents, followed by respondents who were single with a total of 17 respondents, and other status' consisted of only 11 respondents.
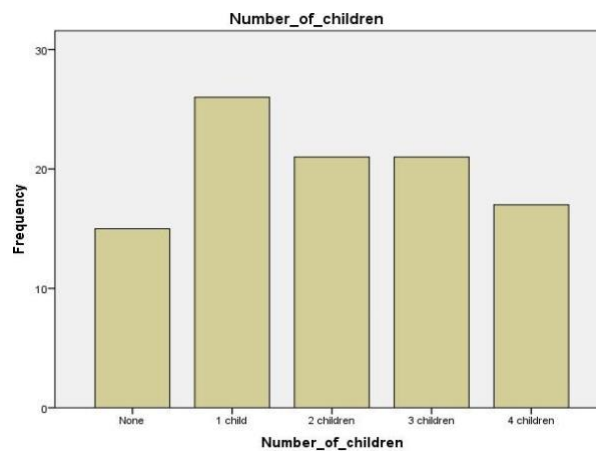
Figure 6: Number of Children Status

Based on Figure 6, the summary of number of children found that the majority of the respondents (26 respondents) have one child, 21 respondents have 2 to 3 children, 17 respondents have 4 children, and only 15 respondents stated that they do not have children.
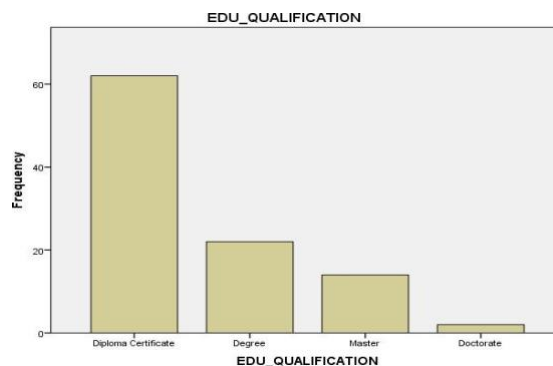
Figure 7: Education Qualification Status

Based on Figure 7, the summary of education qualifications found that many respondents with diploma certificates totaled 62 respondents, degree holders made up a total of 22 respondents, 14 respondents hold a master's degree, and finally only 2 respondents hold a doctorate.
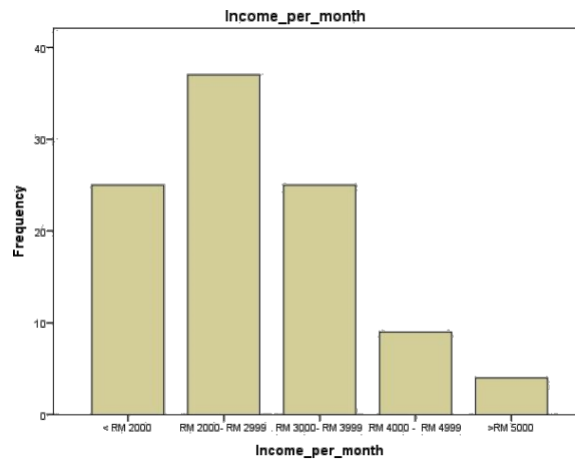
Figure 8: Monthly Income Status

Based on Figure 8, the summary of income per month found that the majority of respondents earn RM2,000 to RM2,999 (37 respondents), followed by an income of RM3,000 to RM3,999 (25 respondents), an income of RM4,000 to RM4,999 (9 respondents), and finally only 4 respondents shared that they earn RM5,000 above.
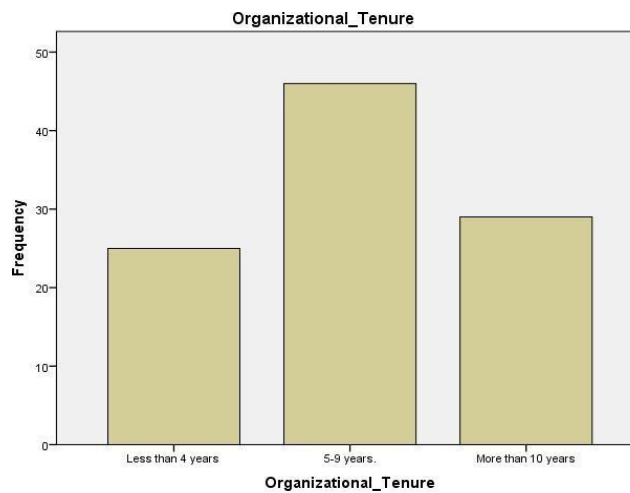
Figure 9: Monthly Income Status

Based on Figure 9, the summary of organizational tenure status found that the majority of respondents had a 5-to-9-year tenure with the organization (46 respondents), followed by 29 respondents with more than 10 years at the organization, and only 25 respondents with less than 4 years at the organization.
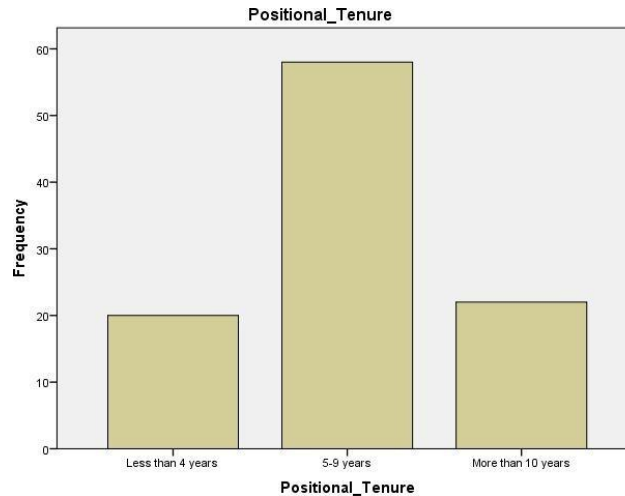
Figure 10: Positional Tenure Status

Based on Figure 10, the summary of positional tenure found that the majority of respondents stated that they have between 5 to 9 years at their respective positions (58 respondents), followed by another 58 respondents holding their job positions for more than 10 years, and only 20 respondents with less than 4 years tenure.

Table 1: Summary of Factors that Influence Self-Motivation

Variables	SD	D	PA	A	SA
I am happy with my benefit plans from the organization.	0	0	2	28	70
My organization cares about employee's welfare.	0	0	2	28	70
I feel energetic at my job.	0	0	10	25	65
I feel energetic to going work daily.	0	0	3	30	67
I am enthusiastic about my job.	0	0	2	25	73
My job inspires me.	0	0	0	20	80
I am proud of the work I do.	0	0	0	17	83
I feel happy when I work with intensity on my job.	0	0	2	28	70
My work gives me a feeling of personal accomplishment.	0	0	0	11	89
I will most probably stay in this job in the foreseeable future.	0	0	3	13	84
I am motivated to contribute more for my organization.	0	0	2	25	73

Note SD = Strongly Disagree D = Disagree PA = Partly Agree A = Agree SA = Strongly Agree

Based on Table 1, the summary of factors that influence self-motivation found that most respondents strongly agreed with "My work gives me a feeling of personal accomplishment" with 89 respondents. "I am happy with my benefit plans from the organization", "My organization cares about employee welfare", and "I feel happy when I work with intensity on my job" represented 70 respondents who strongly agreed. "I feel energetic at my job" represented 65 respondents, "I feel energetic going to work daily" represented 67 respondents, "My job inspires me" represented 80 respondents, all of whom strongly agreed. "I am enthusiastic about my job" and "I am motivated to contribute more for my organization" were strongly agreed by 73 respondents. "I am proud of the work I do" represented by 83 respondents and "I will most probably stay in this job in the foreseeable future" represented by 84 respondents who strongly agreed with these statements.

Table 2: Summary Impacts of Self-Motivation

Variables	SD	D	PA	A	SA
I feel satisfied with my good job performance.	0	0	0	10	90
I feel that self-motivation will lead to effective performance of my present job.	0	0	0	20	80
My job makes me feel like a valued member of this organization.	0	0	2	28	70
My job is meaningful and make me feel to perform better.	0	0	3	13	84
I am happy because the organization has given me the opportunity for career advancement.	0	0	2	25	73

Note SD = Strongly Disagree D = Disagree PA = Partly Agree A = Agree SA = Strongly Agree

Based on Table 2, the summary impacts of motivation found that most respondents strongly agreed with "I feel satisfied with my good job performance" with 90 respondents. "I feel that self-motivation will lead to effective performance of my present job" represented 80 respondents, "My job makes me feel like a valued member of this organization" represented 70 respondents, "My job is meaningful and makes me want to perform better" represented 84 respondents, and "I am happy because the organization has given me the opportunity for career advancement" represented 73 respondents, all of whom strongly agreed.

Table 3: Summary Effective Job Performance of Private Hospital Kuala Lumpur, Malaysia Staff

Variables	SD	D	PA	A	SA
My supervisors praise me and give me recognition when I perform my job well.	0	0	5	30	65
My supervisors take appropriate action to solve problems in a timely manner.	0	0	15	65	72
My supervisors provide the support I need to succeed.	0	0	2	28	70
My pay is appropriate for the role I have in this organization, compared to similar roles at other organizations.	0	0	20	20	60
I am reasonably paid for the extra contribution I make to the organization.	0	0	20	20	60

Note SD = Strongly Disagree D = Disagree PA = Partly Agree A = Agree SA = Strongly Agree

Based on Table 3, the summary of effective job performance of staff at a private hospital in Kuala Lumpur, Malaysia found that most respondents strongly agreed with "My supervisors take appropriate action to solve problems in a timely manner" with 72 respondents. "My supervisors praise me and give me recognition when I perform my job well" represented 65 respondents, and "My supervisors provide the support I need to succeed" represented 70 respondents, all of whom strongly agreed. Moreover, "My pay is appropriate for the role I have in this organization, compared to similar roles at other organizations" and "I am reasonably paid for the extra contribution I make to the organization" represented 60 respondents, all whom strongly agreed.

Table 4: Summary of Reliability Analysis

Variables	Cronbach's Alpha
Factors that influence self-motivation	0.86
Impacts of self-motivation	0.83
Effective job performance of private hospital Kuala Lumpur, Malaysia	0.84

Table 4 presents three variables that had been proposed in the questionnaire and a significant level of Cronbach's Alpha that is greater than 0.80 is observed. Thus, it can be assumed that all items can be moved to the next level since it was recommended and applicable for this study.

Table 5: Summary of Correlation Analysis

Correlations

		Factors Influencing Self-Motivation	Effective Job Performance of Private Hospital Kuala Lumpur, Malaysia
Effective Job Performance of Private Hospital Kuala Lumpur, Malaysia	Pearson Correlation	.519**	1
	Sig. (2-tailed)	<.001	
	N	100	100

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

A Pearson correlation coefficient is determined to examine the relationship between the factors influencing self-motivation (IV1) and impacts of self-motivation (IV2) towards effective job performance at a private hospital in Kuala Lumpur, Malaysia (DV). Table 4.15 shows that there is moderate and positive significant correlation between factors influencing self-motivation (IV1) and effective job performance of private hospital Kuala Lumpur, Malaysia (DV) ($r = .519$, $p < .01$). There is moderate and positive significant correlation between impacts of self-motivation (IV2) and effective job performance at a private hospital in Kuala Lumpur.

Table 6: Summary of Model Summary

Model Summary				
Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	.789[a]	.623	.615	0.307

a. Predictors: (Constant), Factors Influence Self-Motivation, Impacts Self-Motivation

Table 7: Summary of ANOVA

ANOVA					
Model	**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
Regression	31.93	2	7.982	84.54	0.00[b]
Residual	19.36	97	0.094		
Total	51.29	99			

a. Dependent Variable: Effective_Job Performance

b. b. Predictors: (Constant), Factors_Influence_Self-Motivation, Impacts_Self-Motivation

Table 8: Summary of Coefficients

Coefficients						
		Unstandardized Coefficients		**Standardized Coefficient**		
Model	**Sum of Squares**	**B**	**Std. Error**	**Beta**	**t**	**Sig.**
1	Constant	0.61	0.301		4.48	0.000
	Factors_Influence_Self-Motivation	0.38	0.067	0.40	5.73	0.000
	Impacts_Self-Motivation	0.23	0.07	0.23	3.23	0.001

a. Dependent Variable: Effective Job Performance

A multiple linear regression was implemented to examine whether factors influence self-motivation (IV1) and impacts of self-motivation (IV2) significantly describe effective job performance of private hospital Kuala Lumpur, Malaysia (DV). Based on Table 6, the outcome of the multiple regression analysis indicated that the model explicated 61.5% of the variance. Based on Table 7, the model significantly described effective job performance of private hospital Kuala Lumpur, Malaysia (DV), $F_{(2, 97)} = 84.54$, $p < .01$. Based on Table 8, the standardized coefficient beta, factors influence self-motivation (IV1) (B = 0.40, $p < .01$) significantly described the highest variance in effective job performance at a private hospital in Kuala Lumpur, Malaysia (DV) compared to impacts of self-motivation (IV2) (B = 0.23, $p < .01$). Hence, factors that influence self-motivation is the most independent variable (IV) related to effective job performance at the private hospital (DV).

The findings of this study show that the percentage of staff with high work motivation in the selected private hospital is high. Although there are differences depending on job position level, as an effort to further enhance the existing motivation, both agencies involved need to focus more on matters related to opportunities for staff Puteri Hospital regarding their future progress, prioritizing the use of staff-owned skills as well as providing more space to set goals at work. This matter is important because the findings of the study show that most healthcare departments lack motivation in job performance.

In this regard, to complete the job for their future progress, Odukah (2016) suggested greater exposure to training, courses and seminars, information on adequate assignments, and responsibility in making decisions related to work. This phenomenon in the agency may be related to the view of Lambrou et al. (2010) which is based on the belief that the behaviour of employees is difficult to change, and hence certain organizations do not provide courses and training for employees as an important factor towards employee development for future progress. According to the researcher Lambrou et al. (2010), many studies conducted in the Malaysia have succeeded in proving that employees are given adequate training and exposure to the task-related matter, being able to further enhance their own progress and development. Pardoe et al. (2018) has stated that to overcome this problem, employers should also be aware that the task of completing job for the sake of their future progress is not the responsibility of the employee but rather the duty of the employer. This is because hospital employees who are well-versed in their knowledge and experience in matters related to work will bring benefits to the organization itself.

This needs to be realized and implemented by employers continuously throughout the career period of employees to deal with changes in the organization, especially changes involving technological and communication skills works particular (Chigozie et al., 2018). The importance of this is in line with the findings by Machara and Jain (2016) where they found that the opportunity to use skills to be one of the main determinants in influencing individual work motivation. To realize this, the work system needs to be made adaptable and timely, especially for tasks that are too simple or repetitive work (routine) as it can cause the employee to become complacent. The staff in this study need to be given more complex and challenging tasks to hone their skills in problem solving, decision making, and job creativity.

It is also proven that employees with low work motivation have a high tendency to look for other jobs. In this case, the employers for both agencies need to take specific steps to overcome this since large expenses are required especially when appointing and retraining new employees (Panait & Panait, 2018). There is separation in the working group which may pose a major problem if it involves significant assignments (Cătălina, 2018). It also tends to be detrimental to the organization if these employees are the "star performers" in the agency (Chromjakova, 2016). Every organization must strive to retain existing employees and action needs to be taken to create loyalty among them. This includes improving the work climate as a reward system and fair recognition, assignment of clear duties and responsibilities, fostering a harmonious relationship between management and staff, and the more serious application of departmental identities.

In comparison, relatively low job motivation among the staff in this study at state agencies may be related to its closed service management system. Agencies that have closed service management are usually lagging slightly behind in terms of change and innovation due to the lack of exposure to change. In this regard, individuals at the top management level need to be exposed to many courses, seminars and training, especially at the national level to further expand their knowledge towards the formation of effective leadership and management patterns. Francis-Coad et al. (2019) conducted a longitudinal study to compare the changes that exist in the organizational climate and work motivation based on the reforms that have been implemented in line with the changing global environment. The findings of this study are important as a benchmark in guiding the management of the organization involved to lead towards the achievement of the vision and mission of the organization. This is necessary because the study that has been carried out has proven that improvement efforts in the climate of the organization can change the position of work motivation to a higher level.

4. Conclusion

Hospital staff are the most important assets in an organization whose role is to determine the direction and goals of the organization to be implemented and achieved (Reyazi & Aghaei, 2019). When new hospital staff joins an organization, the individual automatically agrees to be loyal and contribute their effort, skill, and knowledge to achieve the organization's goals (Reyazi & Aghaei, 2019). Therefore, private hospital staff need to fully commit to the organization, and further increase their productivity through responsibility (Reyazi & Aghaei, 2019).

Self-motivation will create a positive, productive, and innovative organizational climate (Reyazi & Aghaei, 2019). Through self-motivation of hospital staff, more action is encouraged, and the employee's thinking is stimulated to believe that he/ she has the potential and ability to continue contributing to the progress and success of the private hospital (Reyazi & Aghaei, 2019). The self-motivation of staff is essentially a form of recognition to the quality of work shown by the staff because quality employees are the main asset of an organization (Reyazi & Aghaei, 2019). The quality of the work includes how it is carried out and whether the output successfully meets the required expectations (Reyazi & Aghaei, 2019).

Trustworthy and responsible staff at a private hospital will increase effective job performance, while aspirations will be achieved if there are reforms in thoughts and actions that benefit the country (Siew, Chitpakdee & Chontawan, 2020). As well as encouraging innovation, this study endeavors to improve effective job performance amongst the staff at a private hospital by ensuring it is at the top of the Malaysian government's agenda amid an era of rapid change and disruptive technology (Siew et al., 2020). This study is a contribution for Malaysia in its journey of becoming a developed country, depending on the ability to increase the productivity level of employees (Siew et al., 2020). Therefore, having quality hospital staff at all levels in every department can enhance effective job performance because quality employees are a translation to the success of the organization, producing first-class human resources that in turn become valuable assets for organizational excellence in the long-term (Siew et al., 2020).

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The Precarity of the Nigerian Public University Education: Considering Alternative Models

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Abstract

Nigerian public tertiary education has witnessed many industrial crises in recent times which has consistently led to the closure of public tertiary institutions on several occasions and for more than a continuous period of up to eight months in the public universities in 2022. This is a result of elongated strikes embarked upon by the workers in Nigerian public tertiary institutions. At the core of the problem is underfunding of the tertiary institutions characterized by decaying infrastructure, low wages and low morale. Government is the significant financier of public tertiary education in Nigeria. However, it is now generally agreed by all stakeholders, including the government, and workers' Unions that the government is finding it increasingly difficult to fund tertiary education. With dwindling resources and increasing government expenditure across all sectors, it has become evident to all that the government cannot continue to almost solely fund tertiary education. The focus of this paper is to examine the challenges presented by the current funding model, the implications of inadequate funding and the recommendation of possible alternative models which has the potential to enhance effective and qualitative higher education and put an end to perennial strikes in the Nigerian public tertiary institutions.

Keywords: Funding, Public University, ASUU Strike, Higher Education, Brain Drain

1. Introduction

Higher education otherwise known as tertiary education is post-secondary school learning, training and education. The benefits of quality higher education are numerous to the individual and the society. Amongst others, it increases the knowledge and efficiency of the labour force, thereby increasing productivity. However, it is generally agreed that the Nigerian University educational system is in a state of comatose. The problems are multilayered, it includes paucity of funding for the University arising from inadequate funding by the federal government and the state governments, lack of autonomy as a result of government interventions through policies and directives, failure of strategic planning, stalled development, under staffing, bloated administrative work force, recurring unpredictability, dilapidated infrastructures and teaching facilities, and corruption among others. These problems have become overwhelming and are now undermining the university education system in Nigeria. The root cause of the problems is funding. Without adequate funding, there is an unsatisfied and poorly motivated workforce, inequality, low quality training, learning and teaching, limited research capacity resulting in inability

of graduates and trained work force to solve Nigerian socio-economic, industrial, medical, insecurity, unemployment, brain drain, religious and political problems. Invariably, necessitating capital flight, dearth of foreign investments and development. The doctrinal and qualitative, non-numerical, empirical legal methodology has been deployed to analyze relevant legal instruments and information extracted from published document in this research. This paper has four segments. The first segment is introductory. The second segment interrogates the funding mechanism for Nigerian public tertiary institutions and its inadequacies. The third segment examines some specific challenges to the public higher education caused by paucity of funding. The fourth segment recommends other viable funding alternatives and concludes.

1.1 Statutory Framework

In Nigeria, higher education consists of Colleges of Education, Monotechnics, Polytechnics and Universities (Abdu 2003). An efficient, qualitative and functional higher education system promotes national growth and development, reduces poverty, promotes civility and good national values, healthier society, good governance and high level of citizen participation and engagement in governance. It is because of these benefits that the United Nations encourages member states to commit to the progressive realization of qualitative higher education. Article 13 of the International Covenant on Economic, Social and Cultural Rights 1966 (ICESCR) provides that "higher education shall be made equally accessible to all, on the basis of capacity, by every appropriate means, and in particular by the progressive introduction of free education". Article 17 (1) of the African Charter on Human and Peoples' Rights, 1981   provides that every individual shall have the right to education. In addition, Section 18 (3) (b) of the Constitution of the Federal Republic of Nigeria 1999 as amended provides that the government shall strive to ensure that illiteracy is eradicated through the provision of free University education. And the National Policy on Education (NPE), 2004 recognizes the importance of education for national growth and development and that the pre-condition for the national growth is functional and impactful educational revolution, S.1 (9) (a). The objectives the tertiary education is set out in S.8 of NPE 2004. Tertiary education should contribute to the promotion of national unity, inclusivity, community service and national development through the training and development of the capacity of the students and by inculcating proper values for the development of the student and the survival of the society. The reception of higher education should equip the students with physical and intellectual skills for self-reliance and towards contribution to the national growth. All the above instruments and objectives are lofty ideas and ideals that are more observed in breach than compliance by all tiers of the Nigerian governments.

2. Sources of Funding in Nigerian Public Tertiary Institutions

From inception, when the University College Ibadan then an affiliate of the University of Ibadan was established in 1948, it was adequately funded by both the British and the Nigerian governments, between periods of 6 years the federal government's capital expenditure on the university was in excess of £3.6 million with recurrent expenditure about £112, 269. The federal government later established additional 5 universities between 1960 and 1973. Scholarships and bursary were paid to the students and annual subventions were released by the government on time, "the annual federal grants to the five first generation universities in the country at that time rose from £2.56 million in 1963/1964 to £5.9 million in 1968/1969" "(Ogbogu, p. 3: 2011; NUC, 2003). At the time, most often, these first-generation universities received 100 per cent subsidies from government and there were no private universities. However, financial challenges began to set in when the second-generation universities were established between the period of 1975 and 1980. Government revenue started dwindling, inflation set in and there was also devaluation of the Nigerian currency (World Bank, 2020) resulting in balance of payment deficits (Odebiyi and Aina, 1999). At about the same time, the federal government introduced the free education policy of no tuition or almost tuition free policy. Thereafter, despite the obvious funding problems, the third-generation universities were established between the period of 1980 and 1990. Then the fourth-generation universities started springing up (Ekundayo and Ajayi, 2009), most often because of political considerations. Since, then there have been unrelenting downward trends of funding in the Nigerian public universities, resulting in abandonment and deterioration of infrastructure and brain drain.

2.1.1 Income from budgetary Allocation/Subvention

This constitutes 90 percent of annual incomes of the budgetary allocation which is otherwise known as subvention (Akinyemi, 2013).   Education right is entrenched in the Constitution of the Federal Republic of Nigeria, 1999 as amended. Hence, tertiary institutions are established by the Federal governments and state governments. The underlying problems for these public institutions are poor funding for teaching, research and remuneration. These institutions offer free or low tuition education and accommodation. The institutions are heavily depended on government for funding. It is increasingly difficult for these different tiers of government to fund higher education primarily because of the dwindling financial resources occasioned by over dependency on mono-economy and the inefficiency, proflicacy, galloping inflation, and the challenges of insecurity. This pathetic situation calls for diversification of sources of funding for Nigerian higher education. The Federal government policy of free education has abysmally failed and his inhibiting the growth, quality and efficiency of higher education in Nigeria (Akintayo,2004). Nigeria has Colleges of Education consisting of 27 federal 54 state colleges of education. Monotechnics, Polytechnics and 43 federals, and 52 are state universities with about 1.8 million undergraduate students (Sasu, 2022). The higher intuitions keep growing while the resources dwindle.

At the moment, the federal government allocates between 5 – 7 per cent of the total budget to education as opposed to international benchmark set at 26 per cent of annual minimum budget of a nation as proposed by the United Nations Educational, Scientific and Cultural Organisation (UNESCO) (Akinyemi, 2013; Osinulu and Daramola, 2013). The meagre allocations are inadequate to maintain and effectively administer the tertiary institutions with overwhelmingly growing population. The unabated thirst of establishing more tertiary institutions for political reasons and without adequate financial provisions keeps exacerbating the problems.

The percentage of the annual budget allocated to education is abysmally low, in 2011 9.96%, 2012 9.75%, 2013 10.21%, 2014 12.05%, 2015 12.28%, 2016 9.17%, 2017 7.41%, 2018 7.1 ,2019 7.05%, 2020 6.7%, 2021, 5.6% and in 2022 the federal government proposed budgetary allocation to the education sector is 7.2 per cent which includes, allocation to the Federal Ministry of Education and its agencies covering recurrent and Capital expenses; transfers to the Tertiary Education Trust Fund (TETFUND) for infrastructure projects in Nigeria's tertiary institutions, refund of Borrowed Funds from The Education Tax Pool Account (TETFUND) and budgetary allocation to the Universal Basic Education Commission (UBEC) support to state governments (BudgiT, 2022). This proposed allocation covers all expenditures for public universities, polytechnics, Colleges of Education. For example, only a pastry sum of 963 million is the proposed capital allocation for the University of Lagos (BudgiT, p.7 2022). This budgetary allocation is disbursed through the National Universities Commission (NUC). Each of the University presents its annual budget to the NUC. The NUC usually prunes the university budgets to the barest minimum. Meanwhile, in 2015 Ghana allocated 23.81% of its national budget for education, in 2016, 22.09% in 2016, 20.1% in 2017 and 18.6% in 2018. And for South Africa, there is a continuous increase from R246 billion in 2018, to R416 billion by 2023, (Wahab, Vanguard 2:17: 2022)

In reality percentage of approved funding actually provided by federal government to federal universities in 2019 ranges from 62.3 percent at Nnamdi Azikwe Univerity to 100 percent at the Bayero University. Percentage of approved funding provided by the state government to the state universities ranges from 50 percent at Ekiti State University to 100 percent at Akwa Ibom State University (NUC, p.398: 2019). The average annual undergraduate tuition fee varies at the federal universities from free tuition in most federal universities to the maximum of N81, 500.00 at Nigeria Maritime University (NUC, p.402: 2019), for state universities tuition ranges from N 2,763.00 at the Delta State university to a maximum of N500,000.00 at the Edo State University (NUC, p.403: 2019). Average Annual Undergraduate Other Charges from zero at the University of Lagos, N 8,500.00 at the University of Jos and N108,500.00 at Michael Okpara University of Agric, while at the state universities other charges varies from zero at Edo University to N549,500.00 at the First Technical University (NUC, p.407: 2019)

2.1.2 Capital grant

Capital funding for universities are issued to acquire capital infrastructure, land, construction and maintenance of building, major renovations, repair and renovations, acquire and renew instructional facilities and learning

resources. The purpose of which is to support an effective and sustainable environment for learning, research and innovation. For example, laboratories, libraries, books, hostels, roads, classroom with latest technologically enabled teaching facilities. The total capital released to the universities varies from   N 104,732,856.40 to the University of Calabar and N955,307,579.33 to the Federal University Gusau, from the state government Benue State University was paid N181,524,580.00 while a maximum of N 965,660,513.00 was released to the Kano University of Sci. & Tech. (NUC, p.410: 2019)

Unfortunately, research findings reveal that the meagre capital is not being efficiently utilized by the public universities for diverse reasons including leakages, released of allocation towards the end of the window for effective utilization, corruption and bottlenecks in accessing the released funds (Odewole & Salawu, 2020). It is therefore imperative that a federal body with specific oversight functions in respect of capital utilization be set up to consist of representatives of the federal ministry of finance, federal ministry of education, representative of the NUC and representative of the ICPC to monitor and guarantee efficient use of capital grant to the universities.

2.1.3 Overhead Grant

This may otherwise be known as administrative costs, funding for administrative expenses, including cost of consumables, costs of experiments, cost of electricity, cost of internet access, cost of water etc. Some Universities incur in excess of N90, million per month on electricity, while spending N45 million to buy diesel quarterly (Ogunyinka, 2020). It is the statutory responsibility of the government to meet this obligation to public universities. Total Overhead Grant Released by federal government include, the lion share of N 244,672,482.00 to the National Open University of Nigeria, Federal University of Technology Akure was paid N 71,311,763.81. State Zamfara State University N100, 000,000.00 to Cross River University of Technology N767, 902,192.34 (NUC, p.430-31: 2019). Odewole etal. 2020, in their study evaluated the overhead grants efficiency among the federal institutions in Nigeria and concluded that the federal educational institutions recorded high efficiency rate in the utilization of overhead grants, which is seemingly has a result of inadequate overhead grant in face of mounting overhead expenses in the Nigerian federal educational institutions.

2.1.4 Personnel Cost Grant

This includes salaries and fringe benefits of Faculty members and other university staff members. The total Personnel Cost Grant Released from Nigerian Army University N 812,515,619.72 to the University of Nigeria 16,819,581,308.03. State from the N253, 273,971.76 released to the First Technical University to N4, 942,218,654.00 released to the Ignatius Ajuru University of Education. (NUC, p.438-39: 2019). This is sometimes inadequate to pay existing staff and universities often have to look for extra fund to pay their staff members. The table set out below highlights inadequacy of the personnel cost grant released to the University of Ibadan and the shortfall of 7.58 % of our personnel cost from December 2015 to May 2016.

S/No	Month	UI Personnel Cost (N)	Personnel Grant Received (N)	Amount of Shortfall (N)
1	December 2015	965,508,185.70	663,872,634.60	301,635,551.10
2	January 2016	878,148,127.28	782,346,495.59	95,801,631.69
3	February 2016	888,545,476.96	782,346,495.59	106,198,981.37
4	March 2016	877,193,065.55	782,346,495.59	94,846,569.96
5	April 2016	879,134,419.41	782,346,495.59	96,787,923,82

6	May 2016	878,756,811.03	782,346,495.59	94,898,518.25
	Total	**5,367,286,085,93**	**4,575,605,112.55**	**790,169,176.19**

Source: University of Ibadan website: Update on Funding of Personnel Cost by the Federal Government
https://www.ui.edu.ng/news/update-on-funding-of-personnel-cost-by-the-federal-government

Apart from the inadequacy of the payment structure it is also grossly insufficient. In addition, the university being a peculiar institution, welcome temporary staff, staff on sabbatical leave, visiting professors etc. These set of staff members are not captured on IPPS platform. The highest paid professor (on CONUASS Grade 7 Level 10) earns N416, 743 per month as net salary, which is roughly about $500 at official exchange rate.

2.1.5 Total Cost of Running the University

Total Cost of Running a Federal University ranges from N1,551,857,739.68 Nigerian Army University to University of Lagos N15,071,921,214.00 and Nnamdi Azikiwe University 25,685,269,584.40. And the total cost of running a State University ranges from N1,008,136,770.90 released to the Ondo State University of Sci. & Technology and N2,556,614,452.58 to the Enugu State University of Sci. & Tech. (NUC, p.442-444: 2019) while the average Cost for Training an Undergraduate Student ranges from N712,310.00 at the University of Lagos to Federal University Lafia 242,813.71 and N228,000.00 at the Akwa Ibom State University N600,000.00 Enugu State University of Sci. & Tech. (NUC, p.446-449: 2019). For illustration purposes, if the total cost of training an undergraduate is N712, 310.00 and UNILAG has a total population of 40,0000 undergraduates, (UNILAG, 2022). The university will require an average of N28, 492,400,000 per annum. UNILAG was allotted N15, 071,921,214.00 in the year under consideration, leaving a shortfall of N13, 420,478,790 in that year and will continuously be carried forward in subsequent years. This loss and resultant shortfall are unsustainable. Government authorities, university councils and university trade unions are aware of this,

2.1.6. TETFund

Tertiary Education Trust Fund (TETFund), abbreviated as TETFund was established by the Federal Government of Nigeria in 2011, it was formerly known as the Education Trust Fund (ETF) to disburse, manage and supervise education tax, it was a scheme under the Education Tax Act of 1993 allotted to the tertiary institutions. The Education Tax Act was repealed and replaced by the Tertiary Education Trust Fund Act 2011. TETFund income primarily comes from the 2% which has now become 2.5% education tax paid from the assessable profit of companies registered in Nigeria. The Federal Inland Revenue Services (FIRS) assesses collects the tax on behalf of the Fund. The funds are disbursed to tertiary institutions in Nigeria for essential physical infrastructure, equipment, research, publications, academic staff training and development and other essential needs for the improvement and maintenance of standards in the tertiary institutions as approved by the Board, across the country. Hence, the primary focus of the Fund is to arrest the infrastructural decay in Nigerian tertiary intuitions. It is observed that TETFund has intervened greatly in addressing the infrastructural decay in the Nigerian tertiary institutions but all the public institutions are still in dire need of infrastructure. TETFund interventions so far has been no more than a drop in the ocean. However, there has been allegations that some projects sponsored by TETFund are distressed or non-performing (Anuku, 2022). Favouritism and political consideration in the course of intervention has been alleged (Onyeike, 2018). Hence, the process, procedure and guidelines of accessing TETFund is opaque. There is a need for more credibility and transparency in the administration of the Fund.

2.2 Income from External Sources

Article 14 of the World Declaration on Higher Education for the 21st Century issued in 1998 and reemphasized in 2003 state that, "the funding of higher education requires both public and private resources". The role of government remains fundamental and critical though, diversification of university funding is very essential in

strengthening and development of higher education and for assurance of quality efficiency (UNESCO, 2004). Experiences from China that has "established a complete system of student financial assistance for economically disadvantaged families and has, effectively protected every student from dropping out of school because of family difficulties" (Wen, 2012) through the setting up of different funding assistance, including grants, par time jobs, scholarships, and tuition exemption.

2.2.1 External grants

External grants for universities are a form of financial aid that are gifts to the universities and does not usually get repaid. They are abysmally low or nonexistent in Nigerian public universities. External grants are given by charitable organisations, foundations and individuals. It covers a variety of education-related expenses, buildings, books, libraries etc. They are gift aids. They may come in the form of scholarships for brilliant students or endowments of assets or fund to the university in perpetuity and over generations, the income must be used for the stated purpose in the charter. For example there is FirstBank Endowment programme designated for Institutions which was instituted in 1994. It is aimed to provide funding for research projects that enhances academic excellence, to complement federal government efforts, and the Bank's corporate responsibility & sustainability strategic approach in about 10 public federal universities, across the six geographical regions of the country. The seed money cannot be spent it must be held in perpetuity, it should be aimed at generating income for different projects. Similarly, in 2001, MacArthur Foundation approved multi-year grants of between $2 and $3 million to each of four Nigerian universities: Ahmadu Bello University (ABU), Zaria; Bayero University Kano (BUK); the University of Port Harcourt (UPH); and the University of Ibadan (UI) under the Global Security and Sustainability Program for sustenance and development of democracy and good governance (Fine, 2005)

2.2.2 Internally Generated Revenue (IGR)

The National Policy on Education (NPE) recommends alternative sources of funding for higher institution of learning. It is imperative for universities to supplement government funding of universities. Averagely, IGR forms about 10 per cent of income of the universities (Ogbogu, 2011). However, some institutions of higher learning generate more than 10 per cent while some others generate less than 10 percent revenue outside the subventions (NUC, 2019). This includes fees generated from consultancy, sale of admission forms, change of course forms, transcripts fees, parking fees, medical services incomes, hire of university vehicles income, house rent investments, and tuition, but only eight federal universities charge tuition fees (NUC, 2019). Somehow, there has been a lack of accountability in this area. The institutions of higher learning must be compelled to publish all revenues derivable from IGR and be subjected to oversight functions of the National Assembly and the state House of Assemblies.

3. Some Specific Challenges of the Public Higher Education

3.1 Dearth of Essentials

Across the globe, Higher Education institutions are citadel of learning and research. Their primary functions is to advance the state of knowledge, seek truth and propagate innovative ideas that will result in national development and growth. However, higher education institutions are very expensive to establish and maintain. They have overhead, capital, personnel and recurrent expenses. Some of the significant problems confronting the public university administration are high recurring running cost, lack of or extremely slow internet connection, meagre and delayed budgetary allotment, epileptic power supply and shortages of manpower. Presently there are just about 100, 000 academic staff to teach, undertake research, perform community service function and supervise over 2.1 million students (NUC, 2022). Regardless of these facts, there is currently an embargo on new employment in the public universities. In spite of the public universities being stretched beyond limit, they still take significant part of students' enrolment every year, 94% of students enrolled in the public universities in 2019 (Sau, 2022).

3.2 IPPS

Enakirerhi and Temile (2017: p. 4) contend that IPPS is an ICT driven salary payment platform that has enhanced efficiency, transparency and eliminate ghost workers in the federal government payment structure. Thus, the Federal government has been able to save billions of naira through the elimination of ghost workers (Office of Accountant General of the Federation, OAGF, 2020). It is however, significant to note that till date, no one has been charged or convicted in relation to abhorring or benefiting from the ghost worker scam. Federal government workers have been complaining of under payments (Nduka, 2019) It follows therefore, that complaint by ASSUU, SNNAU and other university unions that their members salary are being amputated by reason of illegal deductions and inconsistent salary payment might be tenable. The so-called savings from elimination of ghost workers appears to be the unlawful deductions from workers' salaries through the deployment of IPPS. With the deployment of Integrated Payroll and Personnel Information System (IPPIS) payment system in the Nigerian Higher Education system, the problems have only been compounded. For example, IPPIS does not recognize academic staff on sabbatical, neither does it make provision for external assessors nor capture visiting fellows, and adjunct academics within and outside the country. The implication is localization of higher education and inbreeding of higher education. External assessors and academic staff from across the globe will not be able to come to Nigeria. This is negatively impacting the standard, quality and ranking of Nigerian higher education. In addition, IPPIS does not recognize academic staff in the professorial cadre over 65 years of age. IPPS also infringes on the autonomy of the University by restricting its ability to engage temporary staff and specialized academic staff. In addition, it is the perception of ASUU that the IPPS is not suitable for the peculiarities of higher education (Mela, 2019). ASUU further contends that the deployment of IPPIS in the University is unlawful. "The introduction of IPPIS is not backed by law. The Union's position is that there are extant legal provisions and negotiated agreements arising from the nature and peculiarities of Nigerian universities, which make IPPIS unnecessary and inapplicable to the universities" (ASUU Bulletin September, 2019). IPPIS infringes on university autonomy as provided in section 2AA of the University (Miscellaneous) provisions Amendment Act 2003 that circulars and policies that contradicts the laws of the University shall not apply to the University.

3.3 The Endless ASUU Strike

Academic Staff Union of Universities, ASUU is a trade union consisting of majority of academic staff in the Federal and State universities in Nigeria. Its primary aim is to promote, protect and advance the interests of its member. ASUU strikes have become an albatross that prevents the public universities from running smooth academic calendar by constantly truncating academic activities in universities across Nigeria. Consequently, negatively impacting the quality of university education (Bello, 2008). It has been noted that ASUU has embarked on 16 strikes in 23 years (Tolu-Kolawole, 2022). This is worrying and calls for a sober reflection and introspection by all stakeholders. The bane of these many disruptions occasioned by endless strikes is the failure of government to properly fund university education and failure of government to efficiently resolve the protracted crises. ASUU has achieved significant benefits for its members and the university system in the past, including, right to collective bargaining, autonomy to the university, increase wages for its members, autonomy to the university, and some revitalization fund for tertiary institution, particularly through the establishment of TETfund. However, the issues of insufficient funding, infrastructural decay, and low wages persist. In 2022 ASUU was on strike for upwards of eight months for issues revolving around the funding of the universities by government (Tolu-Kolawole, 2022). Government functionaries have however argued that government does not have sufficient fund to run the universities.

4. Finding the Right Combination Requires New thinking

It has become obvious that despite the consistent ASUU strike, the problems of paucity of funding for tertiary institutions persist. And in the face of many competing interests for government income, dwindling revenue, debilitating debts, worsening foreign trade deficits, increasing numbers of universities, students and staff members, government revenue cannot continue to be the sole or substantial university revenues. Responsibility for funding tertiary education cannot continue to rest solely with the government, that model has become unsustainable. The government is bearing a disproportionate share of the cost of higher education. Neither the federal, state or other

fees nor charges can provide sufficient funding to meet the funding requirements of the Nigerian tertiary institutions. But the right combination of funding will be adequate.   Hence, new sources alternative, effective, reasonable and viable sources of revenue must be explored. University education cannot continue to be free if our universities intend to keep competing in the global knowledge economy. To attract and retain top academic and non-academic staff and bright students, the universities must have world class and conducive learning facilities and environment. It can however be argued that tertiary education should remain free in Nigeria because tertiary education is free in some countries in Europe, North America and Africa. The problem with this argument is that Nigeria is not as rich as many of those countries and in many of the countries where tertiary education is free, income tax is high and tax collection is very efficient. The precarious financial situation of the Nigerian Higher institutions of learning demands the application of new thinking, innovations and prudent management of resources. Transparency, accountability and application of financial management techniques which encompass a broad range of actions, including, diligence use of available resources through careful planning, realistic budgeting, record keeping, cost forecasting, staff level management, regular auditing by independent and external bodies.

4.1 Payment of appropriate tuition

Knowledge is key to living a quality life. It aids critical thinking, offers access to good job and helps with the attainment of individual's aspirations. Higher education is a path to the attainment of the aspiration to become a professional. The National Policy on Education acknowledges that higher education is to serve as platform for individual, societal and the national development. The higher education is to focus on students' acquisition of skills, development of mental, physical and social competence which are critical to the development of the country. However, higher education does not come cheap, as shown above, lecturers have to be paid, classrooms built, technological equipment purchased, libraries frequently updated, laboratories well equipped and conducive learning environment maintained. All these require humongous amount of money and capital lay out. In addition, Nigeria has a growing population of over a million citizens with a significant youth population who are interested in higher education. In a dwindling economy and with decaying infrastructure in the higher institutions, it has become imperative for the federal government to reconsider its free education policy in higher education. It is simply not sustainable any more. This paper recognizes that it is a seemingly justifiable argument that some Nigerian youths cannot afford to pay adequate tuition. In response to this augment, scholarship and students grant for indigent students should be introduced by every public university.

4.1.2 Mode of selecting indigent student

Scholarship and grants are ideal to give equitable access to higher education and to prevent discrimination against the poor and educationally disadvantaged. It must however, be well structured, visible and transparent to be effective. Each public university must establish easily verifiable, open, transparent, fair and just eligibility criteria for scholarship, grants and financial assistance to indigent and deserving students. Indigent student should be defined by each university in the school's regulation and be a part of student's handbook and each university Council should be able to determine its sustainable tuition fee per student and course with the NUC being charged with oversight functions so that university education will not be unreasonable and completely unaffordable. The needs of the universities differ by reasons of their respective student population, staff strength, size, location and facilities needed.

An indigent student can be anyone whose parents do not earn up to a pre-determined sum to be benchmarked by the civil service salary structure. Every university must have s Scholarship Committee. Applications should be open to all indigent students and a certain proportion of the student population must be beneficiaries of the scholarship. Selection should be based exclusively on merit. Top 10 to 20 percent of indigent students in all the university qualifying examinations should be automatically entitled to the scholarship. Thereafter, maintenance of minimum of 3.5 CGPA may be a prerequisite for continuance enjoyment of the scholarship. Scholarship Committee of Senate should be established in all the public and state universities, comprising of the DVC Academics as Chair, all Deans of Faculties and all the Head of Departments, final recommendations should be

submitted to the Senate of the University for approval before a final approval of the beneficiaries by the Council of the University.

4.2 Full autonomy

The 1997 UNESCO Recommendation concerning the Status of Higher-Education Teaching Personnel, on University Autonomy defines the concept in Paragraphs 17-21 as follows:

> Autonomy is that degree of self-governance necessary for effective decision making by institutions of higher education regarding their academic work, standards, management and related activities consistent with systems of public accountability, especially in respect of funding provided by the state, and respect for academic freedom and human rights.

One of the fundamental problems besieging the universities and causing problems between ASUU and government is the issues revolving around university autonomy. A University Governing Council is the apex governing body of each University. Policy decisions and general administration of a university reside with the University Council. The autonomy of the universities is guaranteed under in the Universities (Miscellaneous Provisions) (Amendment) Act 2003, otherwise known as the Universities Autonomy Act. University autonomy has a tripartite part; academic, administrative and finance. It simple empowers every university to have freedom in teaching and research activities, have the freedom to employ staff needed and the liberty to determine their conditions of service, and also guarantees the freedom of the university to deploy its financial resources as it deems effectively and prudently fit. It is generally agreed that the universities in Nigeria enjoy academic freedom to a large extent, same cannot be said of administrative and financial freedom. One of the major contending issues in the ongoing ASUU strike is the deployment of IPPS as the salary payment platform by the federal government. ASUU argues that the inflexibilities of IPPS does not accommodate the employment of sabbatical staff, temporary staff and visiting Professors from foreign universities. The government insists on continued payment of salaries through IPPS. This is a clog in the freedom of the university to function without interference from external forces. For this reason, academic activities and calendar is being disrupted for upwards of eight months by both ASUU and the Federal government for failing to reach a compromise on this issue. What manner of higher education is this? For how long will academic calendar be disrupted because of mundane issues like this? And how will the national policy on higher education be achieved in this circumstance? This paper recommends that the provisions of the Universities Autonomy Act should be strictly adhered to and every university governing council should be allowed to determine a suitable salary payment platform subject to auditing by NUC and the ICPC if need be. The other infringement on the university autonomy is in relation to funding. Government is still the biggest financier of university education. This gives the government functionaries the impression that they have the right to regulate how the funding is being deployed. In addition, universities are not allowed to charge appropriate tuition, Hence, the heavy dependency on government for funding. A university, for smooth administration should have the freedom to control its financial resources without restrictions or interference from government and its agencies. This freedom should include the freedom to raise financial resources through tuition fees, grants, endowments etc.

4.3. Student jobs on campus

Students should be considered for part time jobs in the University community to alleviate the burden of tuition fee payments. There are many job opportunities for student job placements at the universities. Students can be employed to assist in the library, as student brand ambassadors, in the bookshop, babysitting, at halls of residence etc. Aside from alleviating the burden of tuition, it brings added benefits of learning and preparing for future work skills. It offers students the opportunity to link academic theory to real work environment and to imbibe employability skills, including multi-tasking, teamwork, communication, time management, commercial awareness, drive and initiative etc.

4.4. Proper auditing and accountability

Transparency, openness and accountably by the University management is fundamental to attract and sustain public funding for the universities. It is recommended that the university management comply with the 1997 UNESCO Recommendation concerning the Status of Higher-Education Teaching Personnel in respect of open governance and accountability through the entrenchment of the principle of non-discrimination, effective communication, efficient use of resources, honest accounting, commitment to quality and excellence in teaching, research and scholarship, international academic cooperation, integrity of internal control and audit mechanism. The limited resources available should be deployed in a prudent and effective manner (Afe-Babalola, 2014) The University accounting system and processes should also be made subject to mandatory oversight functions of the NUC and the National Assembly.

4.5. Encouraging alumni associations

Encouraging alumni associations to provide scholarships and mentoring for students. Alumni are culturally and psychologically connected to their *alma* matters. The universities must learn to embrace and engage with their alumni associations. Alumni associations must be established and managed by the universities and the alumni. The alumni association must have a proper structure, building, staff and working tools. Schools must maintain alumni register, with alumni data, including contact addresses, telephone, social media contact information etc. The alumni associations can be encouraged to provide grants and funding for the universities. They can also be helpful in providing job placements and mentoring of students and mentoring of new graduates.   Equipping vocational and technical schools

4.6. Temporary Positions

University positions need not be permanent employment of temporary academic staff and none academic staff should be considered. Some position should be source out to independent contractors. For example, gardening services and janitorial services should be source out to the most economical bidder. The system must ensure that that no one should be on a temporary contract for more than 10 years beyond the beginning of their PhD

5. Conclusion

As it has been shown above, Nigerian public tertiary institutions are experiencing many challenges and in recent years, there has been increased public concern about low quality of graduates, perennial ASUU strikes, dearth of learning facilities and infrastructural decay. This has has amplified the debate about rethinking the funding model of public tertiary institutions to address the genuine need of the tertiary institutions for effective training and learning environment. The time has come to reevaluate the original intention of the National education policy and revise tertiary education funding formula. Hopefully, by deploying the recommended financial tools, Higher Education   institutions in Nigeria will be able to accelerate growth and maximize the use of available resources.

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A Teaching Note on Warranties

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Abstract
This article is the fourth in a series of Teaching Notes on topics in a traditional Legal Environment of Business course. The article discusses warranties from the perspectives of both the Uniform Commercial Code and the Magnuson-Moss Warranty Act. The article describes the three major consumer warranties (the express warranty, the warranty of merchantability, and the warranty of fitness), and offers explanatory comments on each. In addition, the article discusses warranty limitations and disclaimers. The article concludes with an in-depth look at both the dispute settlement mechanism under Magnuson-Moss and the nature of damages that can be awarded in cases of a breach of warranty provisions.

Keywords: Warranty, Express Warranty, Implied Warranty of Merchantability, Warranty of Fitness, Warranty Disclaimer, Magnuson-Moss, Punitive Damages

1. Definition of a Warranty

What is a warranty? According to Kenton (2022b), "A warranty is a type of guarantee that a manufacturer or similar party makes regarding the condition of its product. It also refers to the terms and situations in which repairs or exchanges will be made if the product does not function as originally described or intended."

Warranty actions may be preferable if a plaintiff suffers pure economic damage (especially if only the product itself is defective) and suffers no personal injury (Goodman, Peacock, & Rutan, 2019). Three aspects of warranties relate back to their early tort and contract roots:

(1) Warranties can arise as a matter of law (i.e., can be *implied*) regardless of whether the parties intended to create them (Coale & Lynn, 2022);
(2) Because of its contractual nature, parties may *disclaim* warranties under certain circumstances or limit the remedies available for breach (see Clifford, 1993);
(3) The plaintiff is required to give prompt *notice of breach* of warranty (see, e.g., Holdych, 2005, p. 241) to the seller. This requirement was referred to as a "booby trap for the unwary" by Justice Traynor in the case of *Greenman v. Yuba Power Products* (1963), which led to the creation of strict liability in tort.

2. Types of Warranties

Common law recognized three separate types of sales warranties: the express warranty, the implied warranty of merchantability, and the implied warranty of fitness for a particular purpose (Casper & Wegrzyn, 2019).

Warranties were codified first into the Uniform Sales Act (1906), which was adopted by 34 of the 48 states between 1906 and 1948, and later into Article 2 of the Uniform Commercial Code or UCC (2002) (see Whiteside, 1960), which all states have now adopted! A revision of Article 2 was suggested in 1999, but never was adopted (Murray & Flechtner, 1999).

In the development of the warranty aspects of the UCC, no case could have been more important than *Henningsen v. Bloomfield Motors* (1960), in which the court gave the victim of an automobile accident a remedy against the defendant-manufacturer even though she was not in *privity of contract* with the defendant-manufacturer (Goldberg, 2017; Shaheen & Smith, 2019). The *Henningsen* court also refused to enforce the disclaimer and remedy limitation in the "standard form" ("boilerplate") contract on the grounds that the limitation would be *unconscionable* under UCC Section 2-302. Stated Professor Owen (2007, p. 966-967): "Truly modern products liability law in America arose in the early 1960s, …, beginning with *Henningsen v. Bloomfield Motors*, in 1960, which allowed a non-purchaser injured in an accident caused by a defective car to sue the manufacturer in warranty despite two rock-solid contract law defenses: the absence of privity of contract and a contractual disclaimer that barred such claims."

The warranty provisions of Article 2 of the UCC apply only to the "sale of goods." Section 2-106(1), defines a sale as "the passing of title from the seller to the buyer for a price." Goods are defined (Section 2-105) as all "things movable and tangible…." Consequently, transactions in "goods" other than sales (such as leases and bailments) were not governed by the original Article 2 warranty provisions. That coverage was specifically added in the addendum to Article 2, relating to *bailments* (see Hochstadter-Dicker & Campo, 1999). Goodman, Peacock, and Rutan (2019, p. 25) note: "The UCC covers contracts related to the sale of goods, leasing of goods, and secured transactions, but it does not cover contracts for services, real estate contracts, or employment contract. Consequently, the UCC does not provide parties with a remedy when no privity of contract exists or when there is no sale of goods."

In addition to coverage under the Article 2 warranties provisions, liability may, however, be governed by strict liability in tort or by common law warranties that still survive under state law. This Teaching Note looks at the warranty provisions under Article 2 of the UCC and the Magnuson-Moss Warranty Act. A later teaching note will be devoted to a discussion of strict liability in tort.

3. Express Warranty (Section 2-313)

Liberto (2022) defines an express warranty as: "… is an agreement by a seller to provide repairs or a replacement for a faulty product, component, or service within a specified time period after it was purchased (see Garvin, 2003). Buyers rely on these promises or guarantees and sometimes purchase items because of them."

"*Express warranties by the seller are created as follows:*

  a. *Any affirmation [statement] of fact or promise made by the seller to the buyer which relates to the goods and becomes part of the basis of the bargain creates an express warranty that the goods shall conform to the affirmation or promise.*
  b. *Any description of the goods which is made part of the basis of the bargain creates an express warranty that the goods shall conform to the description.*
  c. *Any sample or model which is made part of the basis of the bargain creates an express warranty that the whole of the goods shall conform to the sample or model.*"

There is no specific language required under the Code to create an express warranty:

*"It is not necessary to the creation of an express warranty that the seller use words such as "warrant"
or "guarantee" or that he have a specific intention to make a warranty, but an affirmation merely of
the value of the goods or a statement purportedly to be merely the seller's opinion or commendation
of the goods does not create a warranty."*

3.1. Commentary on Express Warranties

- A *sample* is actually drawn from the bulk of goods which is the subject matter of the sale; a *model* is not drawn from the bulk of goods and is offered for inspection by a seller or salesperson when the subject matter is not at hand (see Wolfson, 1997).

- The "affirmation of fact or promise" or a "description" of goods is usually made in words; however, an express warranty can also be made by pictures or other forms of communication (such as advertising on radio and TV) (see *Randy Knitwear, Inc. American Cyanamid Co.,* 1962).

- Courts will utilize use the analysis under misrepresentation and fraud for the distinctions between *fact and opinion* and *fact and commendation* (see, e.g., *Vokes v. Arthur Murray, Inc.,* 1968 (statements of fact vs. statements of opinion); *Sellers v. Looper,* 1962 (statements by parties with superior knowledge). The Official Comments to Section 2-313 state: "Concerning affirmations of value or a seller's opinion or commendation under subsection (2), the basic question remains the same: What statements of the seller have in the circumstances and in objective judgment become part of the basis of the bargain? As indicated above, all of the statements of the seller do so unless good reason is shown to the contrary. The provisions of subsection (2) are included, however, since common experience discloses that some statements or predictions cannot fairly be viewed as entering into the bargain. Even as to false statements of value, however, the possibility is left open that a remedy may be provided by the law relating to fraud or misrepresentation."

- A promise or affirmation of fact must "relate to the goods." Promises unrelated to the goods do not create warranties.

- Once an affirmation of fact or promise is made, or a description given, or a sample or model is shown or demonstrated, the presumption is that such affirmation, promise, description, sample, or model is *intended* to be a basis of the bargain.

- Unlike an action for misrepresentation or fraud, no particular reliance by a buyer is required in order to create a warranty (see Adler, 1994); likewise, no particular intention on the part of a seller is required to create the warranty. *The focus, instead, is on the words of the party in creating an express warranty.* Hodaszy (1991, pp. 510-511) noted: "If the seller made the affirmations to the buyer during the course of bargaining, then the buyer will be presumed to have relied on the affirmation with few exceptions. In such a case, the buyer does not have to show actual reliance unless the seller is able to rebut this presumption."

- Although a warranty must be "part of the basis of a bargain," Comment 7 to Section 2-313 provides that "post-sale" representations *may* be considered as part of the bargain—especially those concerning safety—where such statements would give the buyer a false sense of security or might cause the buyer not to be vigilant or not to return goods. This is a "public policy" consideration. The Official Comments state: "The precise time when words of description or affirmation are made or samples are shown is not material. The sole question is whether the language or samples or models are fairly to be regarded as part of the contract. If language is used after the closing of the deal (as when the buyer when taking delivery asks and receives an additional assurance), the warranty becomes a modification, and need not be

supported by consideration if it is otherwise reasonable and in order." Prince (2005, p. 1681, note 15) wrote: "Post-sale statements may sometimes amount to a warranty.

- Section 2-313 does not require that an express warranty be in writing; however, express warranties are subject to the parol evidence rule of Section 2-202. Thus, if there is a writing that was intended to be the final expression of agreement between the parties, the express warranty could not "contradict" the writing, but could "explain or supplement" any such writing with a "consistent additional term" (Kwestel, 2002). The Statute of Frauds (Section 2-201) may also apply if the contract was for sale of goods for $500 or more and may *require* that a warranty be in writing (see generally, Nowka, 2016).

- The express warranty is applicable to all sellers—*merchants and non-merchants alike!*
  However, the warranty is only applicable to one who makes the statement creating the warranty. Thus, a retailer is not automatically liable for a manufacturer's express warranty. If a retailer repeats the manufacturer's warranty as a part of a sales promotion, for example, the retailer now becomes liable. Shanker (1987, p. 42) writes: "Indeed, the liability goes no farther than the seller is willing to assume; that is, the express warranty liability is limited to responsibility only for those express actions and statements which the seller wishes to make about the quality of the goods in return for the price he demands."

4. Implied Warranty of Merchantability (Section 2-314)

Kenton (2022a) writes: "An implied warranty is a legal term for the assurances that a product is fit for the purpose that it is intended and that it is merchantable, i.e., conforms to an ordinary buyer's expectations. The warranty of merchantability is implied unless expressly disclaimed by name, or the sale is identified with the phrase "as is" or "with all faults." In general, an implied warranty is the assumption that a product will work as it is meant to." Professor Davis (2009, p. 788) writes: "The implied warranty of merchantability relates to the condition of the goods at the time they are delivered to the buyer…. The warranty does not extend to the future performance of the delivered goods" In *Lipinski v. Martin J. Kelly Oldsmobile, Inc.* (2001, p. 66), the court said "An implied warranty of merchantability applies to the condition of the goods at the time of sale and is breached only if the defect in the goods existed when the goods left the seller's control."

The warranty of merchantability is perhaps the most important of all of the warranty protections!

"Unless excluded or modified, a warranty that the goods shall be merchantable is implied in a contract for their sale if the seller is a merchant with respect to goods of that kind. Under this section, serving for value food or drink to be consumed either on the premises or elsewhere is a sale."

"Goods to be merchantable must be at least such as:

- a. *Pass without objection in the trade under the contract description; and*
- b. *In the case of fungible goods, are of fair average quality within the description* (Coale & Lynn, 2022)*; and*
- c. *Are fit for the ordinary purpose for which such goods are used* (*Zwicky v. Freightliner Chassis Corp.*, 2007; Block-Lieb & Janger, 2022)*; and*
- d. *Run, within the variations permitted by the agreement, of even kind, quality and quantity within each unit and among all units involved; and*
- e. *Are adequately contained, packaged, and labeled as the agreement may require* (Sawyer, 2019)*; and*
- f. *Conform to the promises or affirmations of fact made on the container or label if any."*

In an interesting case, *Coffer v. Standard Brands, Inc.* (1976), the plaintiff was injured when he bit down on an *unshelled* nut from a bottle of otherwise *shelled*, mixed nuts. The *Coffer* court held that since the impurity complained of "was a natural incident of the goods in question," there was no breach of the implied warranty of merchantability. This case was decided on the basis of the "foreign-natural" test in order to determine if such a product was defective (see Bassett, DeVault, & Green, 2009). However, as Aughenbaugh (1994, pp. 276-277):

> "In the past several decades and continuing today in several jurisdictions, the test which imposes such an obstacle, known as the foreign-natural test, has existed as the controlling standard for determining liability whenever a consumer is injured by a substance which is not clearly foreign to the food's ingredients. Essentially, this test requires that liability be denied as a matter of law whenever the injurious substance in a food product is determined to be "natural" to the ingredients in the food. Because of its harsh effects, the foreign/natural distinction for determining liability for natural defects in food products has been abandoned by many jurisdictions in favor of a test based on the reasonable expectations of the consumer. This test would allow our hypothetical consumer to recover against the food processor if it was determined by a jury that the injurious substance, notwithstanding its naturalness to the food's ingredients, was one that he would not have ordinarily expected to find in the particular food product consumed."

4.1. Commentary on the Implied Warranty of Merchantability

- *Merchantability* is not equated with perfection, and thus is not a strict liability standard, in that sense. However, it is not normally a defense to a claim of breach of the warranty of merchantability that the seller could not have done anything to detect or prevent the defect.

- "*Fair average quality*" is a term appropriate to agricultural bulk products and means goods centering on the *middle belt* of quality, not the *least or the worst*. A fair percentage of the least (as determined by the trade usage, course of dealings, etc.) is permissible, but the goods are not of "fair average quality" if they *all* are of the least or worst quality possible (Coale & Lynn, 2022).

- "*Fitness for the ordinary purposes for which goods of the type are used*" is the fundamental concept of the warranty of merchantability. A determination of a product's *ordinary purpose* depends on the circumstances of each case.

- The goal of subsection (f) is that goods must conform to the representations found on their containers or labels. Even if a buyer failed to read the label (and hence, there could be no express warranty), a violation of the implied warranty of merchantability might still obtain.

- Comment 3 provides that "a contract for secondhand [used] goods…involves only such obligation as is appropriate to such goods." Thus, while a warranty of merchantability is possible, the extent of that warranty would probably be one for a jury. U.S. Legal (2023) notes: "Used goods are covered under implied warranties if the seller is a merchant who is in the business of selling similar products. A private individual who chooses to sell a toaster at a flea market is not expected to take responsibility for the product's performance.

  Comment 3 continues: "In most states, goods can be sold "as is." These goods do not require the seller to offer even an implied warranty. What the seller is required to do for these products is make clear to consumers that the product is being sold in less than prime condition and that the consumer assumes all responsibility for any faults and flaws" (see also Hunter, 2016).

- The definition of merchant under Section 2-104 is a narrow one and the warranty of merchantability is applicable only to a person who, in a professional status, sells the particular kind of goods giving rise to

the warranty (*Siemen v. Alden,* 1975). *A person making an isolated sale of goods is not a merchant* (see Hillinger, 1983)*.*

- There is a split of decisions regarding whether or not a farmer is or is not a merchant with respect to Section 2-104 and thus Section 2-314 as a matter of law. This determination is left to a case-by-case basis.

Interestingly, Rapson (1965, p. 700) made an interesting connection between the warranty of merchantability and strict liability in tort, stating that "It appears, then, that the criterion for establishing that an article is 'defective' for purposes of strict liability in tort is synonymous with the fitness criterion of merchantability set forth in section 2-314 (2)(c)." Shanker (1979, p. 556) added: "Almost every commentator who has seriously studied the problem has concluded that there is no difference; that strict tort liability requires the seller to deliver the same quality of goods as that required under the merchantability warranty."

5. Implied Warranty of Fitness for a Particular Purpose (Section 2-315) (see Brain, 2020)

"Where the seller at the time of contracting has reason to know any particular purpose for which the goods are required and that the buyer is relying on the seller's skill or judgment to select or furnish suitable goods, there is unless excluded or modified under the next section an implied warranty that the goods shall be fit for such purposes."

Ellis (2018) stated: "In the context of business-to-business sales in the manufacturing supply chain, a manufacturer may ask, what is the particular purpose for which its goods must be fit? The answer is highly situational. In some cases, the answer may be relatively simple. Similar to the scuba diving example above, a buyer may identify generally the use to which it intends to put the goods. For example, a buyer may ask a seller to supply a widget for use in a particular application."

5.1. Some Commentary on the Warranty of Fitness:

There are two requirements for this warranty:

- The seller must have "reason to know" of the use for which the goods are purchased. Johnson (2021) notes: "Generally, this implied warranty means that the buyer has approached the seller with the need for a product that performs a certain function, and by providing a product in response to the need, the seller is implying that the product is fit for that specific use."

- The buyer must rely on the seller's expertise in supplying the proper product (*Lewis v. Mobil Oil,* 1971). This is a question of fact to be determined by looking at the circumstances of the transaction and the specific requests or words used by the parties.

In addition,

- The warranty of fitness applies to merchants and non-merchants alike. However, it only applies to a person who created the warranty and not to all suppliers within the marketing chain.

- The *specificity* with which the buyer ordered the goods is also a factor in determining whether the buyer relied on the seller's expertise (see *Tears v. Boston Sci. Corp.*, 2018, pp. 513-514). A buyer's claim may be weakened if the buyer has control over the detailed specifications for the goods. Likewise, if the buyer has examined the goods, he or she is less likely to have relied on the seller's judgment in furnishing the goods.

6. Persons to be Protected: The "New Privity" Under Section 2-318 (see Sullivan & Thrash, 2012)

Monserud (2000, pp. 128-129) states: "The extension of warranties to third parties under Article 2 is governed by section 2-318's Alternatives, A through C, which are progressively more expansive in coverage of persons and allowable claims. Whenever any legislature adopts an alternative from official section 2-318, it makes a partial codification of third party beneficiary law. Despite the simplicity of the text offered for each alternative, the case law under these alternatives is not uniform from state to state. This non-uniformity, as well as policy concerns, has generated a rich secondary literature bearing upon the meaning of section 2-318's alternatives."

The Code provides three alternatives relating to "persons to be protected":

Alternative A: A seller's warranty whether express or implied extends to any natural person who is in the family or household of his buyer or who is a guest in his home if it is reasonable to expect that such a person may use, consume or be affected by the goods and who is injured in person by breach of the warranty. A seller may not exclude or limit the operation of this section.

Alternative B: ...extends to any natural person who may be reasonably expected to use, consume or be affected by the goods and who is injured in person by breach of the warranty. A seller may not exclude or limit the operation of this section.

Alternative C: ... extends to any person who may reasonably be expected to use, consume or be affected by the goods and who is injured by the breach of the warranty. A seller may not exclude or limit the operation of this section with respect to injury to the person of an individual to whom the warranty extends.

Stallworth (1993, pp. 1230-1232) provides insightful commentary on issues relating to liability to third parties:

"Alternative A is the most conservative version of section 2-318 because it limits the class of potential plaintiffs in four ways. First, the statutory language limits the class of potential plaintiffs to "natural persons." That means that Alternative A is no help to partnerships and corporations because they are not considered "natural persons." Second, the statutory language limits the class of potential plaintiffs to the buyer's houseguests, household, and family members. Thus, Alternative A is generally no help to the buyer's employees. Third, Alternative A is no help to plaintiffs who have sustained only property damage or economic loss because the statutory language requires personal injury. Fourth, Alternative A does not grant standing to sue remote sellers because the statutory language limits the class of potential defendants to direct sellers; however, the Official Comment to section 2-318 states that Alter native A "is . . . not intended to enlarge or restrict the developing case law on whether the seller's warranties, given to his buyer who resells, extend to other persons in the distributive chain." That language has been interpreted to mean that Alternative A leaves problems of vertical privity to be resolved by the courts. Many courts have partially or wholly abolished the vertical privity requirement."

Relating to Alternate B, Stallworth (1993, pp. 1232-1233) notes:
"Alternative B provides that "any natural person who may reasonably be expected to use, consume or be affected by the goods and who is injured in person by breach of the warranty" may institute a breach-of warranty action against the seller. Alternative B is more generous than Alternative A because it expands the class of potential plaintiffs and also the class of potential defendants. For example, Alternative B potentially encompasses nonpurchasers who are not in the buyer's family or household, such as the buyer's employees and invitees. Indeed, it is conceivable that even bystanders might have standing to sue for breach of warranty under Alternative B. In addition, Alternative B implicitly abolishes the requirement of vertical privity because the seller's warranty is not limited to "his buyer." Thus, Alternative B expands the class

of potential defendants to include remote sellers. But Alternative B does not help nonprivity plaintiffs who have sustained only property damage or economic losses. The statutory language requires personal injury. Similarly, Alternative B is no help to partnerships and corporations because the statute is limited to "natural persons.""

As to Alternate C, Stallworth (1963, p. 1222) continues:

"Alternative C eliminates the lack-of-privity defense the most. It provides, in pertinent, part that: "A seller's warranty whether express or implied extends to any person who may reasonably be expected to use, consume or be affected by the goods and who is injured by breach of the warranty." Like Alternative A, Alternative C grants standing to the buyer's houseguests and to the buyer's family members and household. Alternative C is even more generous, however, because it expands the class of plaintiffs to potentially include other nonpurchasers like the buyer's employees and invitees, and bystanders."

"Like Alternative B, Alternative C eliminates the vertical privity requirement. However, Alternative C is more generous than Alternative B because it does not require personal injury. The statutory language simply refers to "injury." Thus, plaintiffs sustaining only property damage or economic loss may have standing to sue."

"Unlike Alternatives A and B, Alternative C is not limited to "natural persons." The statutory language refers to "any person," which is defined under the Code to include corporations, partnerships, and other types of organizations. Hence, Alternative C permits both corporations and partnerships to sue for breach of warranty" (see also Fallick, 2005).

6.1. Commentary on the Extension of Horizontal Privity (Sullivan & Thrash, 2012)

- The last sentence of each alternative forbids the exclusion of liability to the persons to whom the warranties are made under each section.

- Alternative A is the *Henningsen principle* (Goldberg, 2017) and is by far the most popular of the alternatives (*Henningsen v. Bloomfield Motors*, 1960), where the court stated:

"Accordingly, we hold that under modern marketing conditions, when a manufacturer puts a new automobile in the stream of trade and promotes its purchase to the public, an implied warranty that it is reasonably suitable for use as such accompanies it into the hands of the ultimate purchaser… We are convinced that the cause of justice in this area of law can be served only by recognizing that she (Mrs. Henningsen) is such a person who, in the reasonable contemplation of the parties to the warranty, might be expected to become a user of the automobile. Accordingly, her lack of privity does not stand in the way of prosecution of the injury suit against the defendant Chrysler."

- Alternatives B and C have been applied to bystanders, although extending protections to bystanders is most often accomplished in strict liability in tort cases (Hunter, Shannon, & Amoroso, 2016).

- Alternative C has been held to cover monetary damages sustained by a corporation.

- It should also be recognized that some states are still quite strict relating to some aspects of vertical privity regarding warranties. An express warranty, for example, is based upon the express words or statements made by a particular seller. The same is true of the warranty of fitness. Some states, however, have abolished the requirement of vertical privity altogether in actions for breach of warranties (*Salvador v. Atlantic Steel Boiler Co.*, 1978) and may hold all parties in the vertical marketing chain liable for a breach of warranty offered by a seller.

Fallick (2005, p. 742) provides this interesting summary:

"Although the purpose of section 2-318 was "to make uniform the law among the various jurisdictions," the states have only achieved uniformity in deciding issues of vertical privity by allowing purchasers to sue any party involved in the chain of selling a product. Consequently, there remains a divergence among Alternative A jurisdictions resolving issues of horizontal privity. Jurisdictions are split in deciding whether third-party beneficiary standing should extend beyond the buyer's family, household, or houseguests. This inconsistency is substantially attributed to the ambiguous language of Official Code Comment 3 to section 2-318. The commentary states that Alternative A gives beneficiary status to "the family, household and guests of the purchaser," but directly follows this phrase by stating the section is "neutral" beyond the category of third-party beneficiaries contemplated by the drafters and does not intend "to enlarge or restrict the developing case law" in regards to extending warranty protection to "other persons in the distributive chain." However, the Code's failure to provide a definition of the term "distributive chain" has left the term open for judicial interpretation."

7. Limitations on Liability: Disclaimers, Damage Limitations, Time Limitations and Notice

Ausness (1998, p. 202) notes that: "A disclaimer is a provision in a sales contract that prevents a warranty from arising; a warranty limitation, on the other hand, restricts the remedies available to the injured party if a breach occurs. Both of these devices are commonly used by sellers to shift product-related risks from themselves to the purchasers of their products."

Section 2-316: *"Exclusion or Modification of Warranties*

1. *Words or conduct relevant to the creation of an express warranty or words or conduct tending to negate or limit a warranty shall be construed wherever reasonable as consistent with each other; but subject to the provisions of this Article on parol or extrinsic evidence, negation or limitation is inoperative to the extent that such construction is unreasonable.*

2. *Subject to subsection (3), to exclude or modify the implied warranty of merchantability or any part of it, the language must mention merchantability and in the case of a writing must be conspicuous, and to exclude or modify any implied warranty of fitness, the exclusion must be by a writing and conspicuous. Language to exclude all implied warranties of fitness is sufficient if it states, for example, that "There are no warranties which extend beyond the description of the face hereof."*

3. *Notwithstanding subjection (2),*

    a. *Unless the circumstances indicate otherwise, all implied warranties are excluded by expressions like "as is," "with all faults," or other language which in common understanding calls the buyer's attention to the exclusion of warranties and makes plain that there is no implied warranty; and*
    b. *When the buyer before entering into the contract has examined the goods or the sample or model as fully as he desired or has refused to examine the goods, there is no implied warranty with regard to defects which an examination ought in the circumstances to have revealed to him; and*
    c. *An implied warranty can also be excluded or modified by course of dealings or course of performance or usage of trade.*

4. *Remedies for breach of warranty can be limited in accordance with the provisions of this Article on liquidation or limitation [repair, replacement, return of the article] of damages and on contractual modification of remedy."*

7.1. Commentary on Limitations of Warranties:

- The term "*conspicuous*" is defined in Section 1-201(10) (Kistler, 1992):

"A term or clause is conspicuous when it is so written that a reasonable person against whom it is to operate ought to have noticed it. Language in the body of a form is "conspicuous" if it is in larger or other contrasting type or color. But in a telegram any stated term is "conspicuous." Whether a term or clause is "conspicuous" or not is for decision by the court."

- There is a split of authority as to whether "as is" disclaimers must likewise be conspicuous; for example, should the words "as is" be found in "all caps" (Arbel & Toler, 2020).

- A "fire sale" or an "unclaimed freight" sale might serve as an example where a warranty might be excluded because of *trade usage*. Commenting on trade usage in the context of the Uniform Commercial Code, Professor Bernstein (2018, p. 119) states: "These laws are built on three core assumptions. First, they assume that unwritten, trade usages exist. Second, they assume that in the event of a dispute the existence and content of these usages can be proven to a court with reasonable accuracy at a cost the parties consider reasonable from an ex-ante perspective. And, third, they assume that merchants want courts to look to usages in interpreting contractual language and filling contractual gaps."

- A *post-sale disclaimer* is difficult to uphold because it is a heavy burden to prove that a buyer would actually agree to be bound by a post-sale modification! Why would a buyer agree to any post-sale modification that would limit his/her chances of recovery? Phillips (1994, p. 160) states that "if the writing contains express warranties… and also contains a blanket disclaimer of the express warranties, the disclaimer is invalid."

- It is very difficult to orally disclaim an express warranty once it has been offered. Such an "oral disclaimer" would almost always be subject to the parol evidence rule (see *Northern States Power Co. v. ITT Meyer Industries, Div. of ITT Grinnell Corp.*, 1985) or would not be informed generally as a matter of public policy.

8. Contractual Modification or Limitation of Remedy (Section 2-719)

"1. Subject to the provisions of subsection 2 and 3 of this section and of the proceeding section on liquidation and limitation of damages,

a. The agreement may provide for remedies in addition to or in substitution for those provided in this Article and may limit or alter the measure of damages recoverable under this article, as by limiting the buyer's remedies to return of the goods and repayment of the price or to repair and replacement of nonconforming goods or parts; and

b. Resort to a remedy as provided is optional unless the remedy is expressly agreed to be exclusive, in which case it is the sole remedy.

2. Where circumstances cause an exclusive or limited remedy to fail of its essential purpose, remedy may be had as provided in this act.

3. Consequential damages [for lost profits or personal injury] may be limited or excluded unless the limitation or exclusion is unconscionable. Limitation of consequential damages for injury to the person in the case of consumer goods [goods purchased for "personal, family, or household use"] is

prima facie unconscionable but limitation of damages where the loss is commercial [for producer goods or for injury to property] is not."

8.1. Commentary on Contractual Limitations

- In a case where a consumer good causes personal injury, a limitation to "repair only" would "fail the essential purpose" of the Act and would not be enforced (*Soo Line R.R. Co. v. Fruehauf Corp.,* 1977).

- Warranties can be limited in terms of time provided that the period is deemed reasonable. Think about the range of "time limitations" in automobile warranties.

- Subsection 2-607 (23) (a) provides that the buyer must "within a reasonable time after he discovers or should have discovered any breach notify the seller of breach or be barred from any remedy." This is usually no more than 3 months (see *Castro v. Stanley Works*, 1989). In *Castro* (1989, p. 164), the court noted: "[i]t is sufficient that the 20-month delay in notification prevented Stanley Works from investigating fully the circumstances of the accident and ascertaining facts which later could not be determined. . . ." Comment 4 provides: The time of notification is to be determined by applying commercial standards to a merchant buyer. "A reasonable time" for notification from a retail consumer is to be judged by different standards so that in his case it will be extended, for the rule of requiring notification is designed to defeat commercial bad faith, not to deprive a good faith consumer of his remedy."

- The "notice requirement" is not the same as the Statute of Limitations requirement (seer Garvin, 2003). Under Section 2-725, the Statute of Limitations for the sale of goods may never be reduced to a period less than one year and may extend to a period of four years. In general, the Statute of Limitations for filing a suit for a breach of warranty begins from the date of the breach of warranty, regardless of the aggrieved party's lack of knowledge of the breach. The contractual warranty period begins when the tender of delivery is made.

- Notwithstanding the above, a few courts have marked the statute of limitations *from the date of discovery of an injury or from the date when the injury should have been discovered* in a breach of warranty case involving personal injury as a matter of "public policy" (see Grant, 1995; Fabert, 1997). Individual state law should be consulted as to this issue. Williams (1983, p. 69) writes: "… the impact of the statute of limitations on breach-of-warranty claims should be determined by an analysis of the competing interests of the buyer and seller in each case as well as the public policies supporting those interests."

- It should also be noted that several states have adopted "statutes of repose" of ten or twenty years as an absolute time period after which the seller/manufacturer may not be held liable, but their application is highly speculative in light of the discussion above (see Bain, 2014). As Dworkin (1982, p. 36) wrote:

  "The recognition and protection of a repose interest is not new. It has long been conceded that some time limitation on the ability to bring suit is necessary if practicality as well as justice are to be served. Defendants at some point should be able to institute financial plans with certainty, free from the threat of stale claims; plaintiffs, if truly aggrieved, should pursue remedies within a reasonable period of time; and defendants and courts should not have to deal with cases in which the passage of time seriously hampers the search for truth. For the traditional statute of limitations, the legislature balances the interests of the parties in light of these considerations, and determines that at some point the right to be free from stale claims must prevail over the right to prosecute them. This determination is usually made to cover a wide class of actions, such as torts, or to encompass similarly situated parties."

As a summary of the practical implications of filing a lawsuit on the basis of a breach of warranty by employees or other parties in cases concerning *producer goods*, Hunter, Shannon, and Amoroso (2018, p. 145) note: "In practical terms, a plaintiff must first determine if a warranty provision is applicable (especially relevant in a horizontal extension of warranty provisions to employees or customers of the buyer of producer goods) and then determine if a disclaimer is valid. If a warranty provision extends to an employee or to another party, it would be difficult to prove that a disclaimer should apply to that party without express agreement of that party" (see also Clifford, 1997; Fallick, 2005).

9. An Additional Protection: The Magnuson-Moss Warranty Act (1975)

On January 4, 1975, President Gerald Ford signed into law the Magnuson-Moss Warranty Act, which became effective July 4, 1975. The Act is designed to "improve the adequacy of information available to consumers, prevent deception, and improve competition in the marketing of consumer products. . . ." Magnuson-Moss applies to consumer products, which are defined as "any tangible personal property which is distributed in commerce and which is normally used for personal, family, or household purposes (including any such property intended to be attached to or installed in any real property without regard to whether it is so attached or installed)." Professor Marks (2020, p. 537) writes:

> "The Magnuson-Moss Warranty Act was enacted to address concerns that sellers' warranties were becoming too confusing for the average consumer. In response to fears that what "the bold print giveth and the fine print taketh away," the Act addresses these concerns in two ways: by setting out minimum informational standards associated with warranties; and by providing substantive limitations on certain disclaimers when a warranty is given. Importantly, the Act permits consumers to bring suit in state or federal court and provides that a prevailing plaintiff can recover attorneys' fees. As with many federal acts, the Magnuson-Moss Warranty Act provides broad rules but leaves specific guidance to the Federal Trade Commission, which can be found in the C.F.R (Code of Federal Regulations)."

9.1. Definitional Considerations

Several important definitions can be found in the Act:

- "A "consumer" is a buyer of consumer goods for personal use. A buyer of consumer products for resale is not a consumer.
- A "supplier" is any person engaged in the business of making a consumer product directly or indirectly available to consumers.
- A "warrantor" is any supplier or other person who gives or offers a written warranty or who has some obligation under an implied warranty.
- A "consumer product" is generally any tangible personal property for sale and that is normally used for *personal, family, or household* purposes. It is important to note that the determination whether a good is a consumer product requires a factual finding, on a case-by-case basis (*Najran Co. for General Contracting and Trading v. Fleetwood Enterprises, Inc.*, 1986).
- A "written warranty," also called an express warranty, is 'any written promise made in connection with the sale of a consumer product by a supplier to a consumer that relates to the material and/or workmanship and that affirms that the product is defect-free or will meet a certain standard of performance over a specified time."
- An "implied warranty" is defined in state law. The Act provides limitations on disclaimers and provides a remedy for their violation.
- A "full warranty" is one that meets the federal minimum standards for a warranty. Such warranties must be "conspicuously designated" as full warranties. If each of the following five statements is true about a warranty's terms and conditions, it is a "full" warranty:
    - There is no limit on the duration of implied warranties.

- ▪ Warranty service is provided to anyone who owns the product during the warranty period; that is, the coverage is not limited to first purchasers.[5]
    - ▪ Warranty service is provided free of charge, including such costs as returning the product or removing and reinstalling the product when necessary.
    - ▪ There is provided, at the consumer's choice, either a replacement or a full refund if, after a reasonable number of tries, the warrantor is unable to repair the product.
    - ▪ It is not required of consumers to perform any duty as a precondition for receiving service, except notifying that service is needed, unless it can be demonstrated that the duty is reasonable.
- In contrast, a "limited warranty" is one that does not meet the federal minimums. Such warranties must be "conspicuously designated" as limited warranties.
- A "multiple warranty" is part full and part limited.
- A "service contract" is different from a warranty because service contracts do not affirm the quality or workmanship of a consumer product. A service contract is a written instrument in which a supplier agrees to perform, over a fixed period or for a specified duration, services relating to the maintenance or repair, or both, of a consumer product. Agreements that meet the statutory definition of service contracts, but are sold and regulated under state law as contracts of insurance, do not come under the Act's provisions.
- Disclaimer or Limitation of Implied Warranties when a service contract is sold:

    Sellers of consumer products who make service contracts on their products are prohibited under the act from disclaiming or limiting implied warranties (see Clifford, 1993). Sellers who extend written warranties on consumer products cannot disclaim implied warranties, regardless of whether they make service contracts on their products. However, sellers of consumer products that merely sell service contracts as agents of service contract companies and do not themselves extend written warranties can disclaim implied warranties on the products they sell."

Under Section 103 of the Magnuson-Moss. if a seller sells a consumer good that carries a price of more than $15 under a written warranty, the warranty must be stated in *readily understandable language* as determined by standards set forth by the Federal Trade Commission. However, there is no requirement that a warranty be offered or that any particular product be warranted for any specific length of time.

Magnuson-Moss only requires that when there *is* a written warranty, the warrantor must *disclose* the details of the warranty obligation prior to the sale of the product. This will permit the consumer to compare the various warranty protections offered by a variety of sellers, enabling the buyer to seek the desired level of protection at a specific price point. To further protect the consumer from deception, the Act requires that any written warranty must be labeled as either a "full" or a "limited" warranty.

Only warranties that meet the standards of the Act may be labeled as "full." One of the most important provisions of the Act prohibits a seller who offers a warranty from disclaiming or modifying any implied warranty whenever any written warranty is given or service contract entered into (Clifford, 1993). An implied warranty may, however, be limited in duration if the limitation is reasonable, not unconscionable, and set forth in "clear and unmistakable language" prominently displayed on the face of the warranty.

A consumer who is damaged by the breach of a warranty, or noncompliance with any of the provisions of the Act, may bring suit in either state or federal court. Access to a federal court, however, may be severely limited by the Act's provision that no claim may be brought in federal court if: (a) The amount in controversy of any individual claim is less than $25,000; (b) the amount in controversy is less than the sum or value of $50,000 computed on the basis of all claims in the suit; or (c) a class action is brought, and the number of named plaintiffs is less than 100.

In light of these statutory requirements, it is more likely that most suits under Magnuson-Moss will be brought in a state court. If the consumer prevails, he or she will be awarded costs and attorneys' fees (Schaefer, 1986). Nothing

in the Act invalidates any right or remedy available under state law, and suits may proceed relating to claims based on the warranty protections of both the Uniform Commercial Code and the Magnuson-Moss Act.

The Magnuson-Moss Act has been the subject of a great deal of criticism (Walters, 2022). For example, Professors Stevenson and Munter (2015) write:

> "After comparing both the current state of consumer warranties and the levels of administrative and judicial enforcement, it is clear that the Magnuson-Moss Warranty Act is not fully satisfying its intended aims. After nearly forty years, it is appropriate to make some minor modifications in statute and rule to take into account the changed manufacturing, retail, and technological landscape. Through a combination of strengthened enforcement, clearer warranty disclosures, and education, this landmark legislation can better meet the needs of the twenty-first century consumer."

9.2. Dispute Settlement Under Magnuson-Moss

4WheelDriveGuide.com (2023) provides the following information on dispute settlement under the Magnuson-Moss Warranty Act:

> "The Act allows warranties to include a provision that requires customers to try to resolve warranty disputes by means of the informal dispute resolution mechanism before going to court. If you include such a requirement in your warranty, your dispute resolution mechanism must meet the requirements stated in the FTC's Rule on Informal Dispute Settlement Procedures (the Dispute Resolution Rule). Briefly, the Rule requires that a mechanism must:
>
> • Be adequately funded and staffed to resolve all disputes quickly;
> • Be available free of charge to consumers;
> • Be able to settle disputes independently, without influence from the parties involved;
> • Follow written procedures;
> • Inform both parties when it receives notice of a dispute;
> • Gather, investigate, and organize all information necessary to decide each dispute fairly and quickly;
> • Provide each party an opportunity to present its side, to submit supporting materials, and to rebut points made by the other party; (the mechanism may allow oral presentations, but only if both parties agree);
> • Inform both parties of the decision and the reasons supporting it within 40 days of receiving notice of a dispute;
> • Issue decisions that are not binding; either party must be free to take the dispute to court if dissatisfied with the decision (however, companies may, and often do, agree to be bound by the decision);
> • Keep complete records on all disputes; and
> • Be audited annually for compliance with the Rule. It is clear from these standards that informal dispute resolution mechanisms under the Dispute Resolution Rule are not "informal" in the sense of being unstructured. Rather, they are informal because they do not involve the technical rules of evidence, procedure, and precedents that a court of law must use."

10. Buyers' Remedies for Breach of Warranty Under the UCC

Professor Ausness (198, p. 190) lays out the various types of damages that may be recovered under the Code for breach of warranty. "The basic measure of damages is the difference between the value of the goods as accepted and their value as warranted. However, the Code also permits a buyer to recover incidental and consequential damages. Incidental damages include such things as the cost of transporting or storing nonconforming or defective goods. Consequential damages include physical injuries and property damage caused by defective products."

- U.C.C. 2-714(2): *"The measure of damages for breach of warranty is the difference at the time and place of acceptance between the value of the goods accepted and the value they would have*

had if they had been as warranted, unless special circumstances show proximate damages of a different amount."

- U.C.C. 2-715(1). *"Incidental damages resulting from the seller's breach include expenses reasonably incurred in inspection, receipt, transportation and care and custody of goods rightfully rejected, any commercially reasonable charges, expenses or commissions in connection with effecting cover and any other reasonable expense incident to the delay or other breach."*
- U.C.C. 2-715(2). *"Consequential damages resulting from the seller's breach include (a) any loss resulting from general or particular requirements and needs of which the seller at the time of contracting had reason to know and which could not reasonably be prevented by cover or otherwise; and (b) injury to person or property proximately resulting from any breach of warranty."*

10.1 Are Punitive Damages Appropriate in Warranty Actions?

Wong (2022) notes that: "Punitive damages, also known as exemplary damages, are damages that are awarded in personal injury lawsuits in addition to compensatory damages. They can be awarded by courts and juries… punitive damages are awarded to punish egregious or serious misconduct on the part of the defendant. For example, punitive damages can be awarded in certain cases when an individual commits actions which are particularly egregious." Such conduct may include:

- Wanton conduct;
- Intentionally negligent conduct;
- Fraudulent conduct; and
- Other conduct.

McMichael and Viscusi (2019, p. 176) state:

> "Punitive damages occupy a unique place in the United States legal system. Unlike compensatory damages, punitive damages do not exist to compensate injured parties. While they are not equivalent to full criminal sanctions, punitive damages, as their name suggests, exist to punish reprehensible conduct. They also have a general deterrence role by serving to deter others from engaging in similar conduct in the future. They accomplish these twin goals by forcing defendants to internalize costs associated with their actions above and beyond the amount required to compensate victims. The Supreme Court has explicitly limited punitive damages to these goals."

Encarnacion (2022, p. 1030) explains "that punitive damages are appropriate when a wrongdoer has acted 'maliciously, wantonly, or with a recklessness that betokens an improper motive or vindictiveness' ... or has engaged in 'outrageous or oppressive intentional misconduct' or with 'reckless or wanton disregard of safety or right'" (see also Hunter, Shannon, & Amoroso, 2017).

An award of punitive damages is meant to serve a number of divergent purposes:

- Punishment
- Specific or individual deterrence
- General deterrence.

As a general rule, however, punitive damages are not awarded in warranty cases (see Owen, 1977, p. 1976), but may awarded in cases alleging liability under a tort theory alleging intentional conduct, including strict liability in tort (see *Boyd v. Homes of Legend, Inc.*, 1999); *Talavera v. Metabolife Int'l,* 2004; Hunter, Shannon, & Amoroso, 2017; *Carroll v. BMW of N. Am.*, LLC, 2019).

11. Observations

Endemic problems with warranties, centering around notice requirements, the availability of warranty disclaimers and limitations, as well as the absence of the remedy of punitive damages to address the most egregious types of conduct, have called into question the continued efficacy of warranties as a major source of consumer protection. Many critics point to the development of   strict liability in tort as the preferred method to assure the highest level of protections when products prove to be defective. Tan (2011) notes: "The legal doctrine [of strict liability in tort] had its genesis in *Greenman v. Yuba Power Products Inc.* (1963). Mr. Greenman was injured when he used a power tool that was given to him as a gift. He sued the manufacturer, although there was no direct contract of warranty between him and the manufacturer as he did not make the purchase himself. The California Supreme Court went beyond the law of contracts to find the manufacturer liable, and in the process introduced the notion of strict liability, which goes beyond simple negligence, centering instead on whether a product is defective." It is important to note that Justice Trainor had also rejected the warranty theory as a basis of liability.

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Guidelines to Improve Effectiveness of Educational Institution Administration by Using Transformational Leadership of Administrators, Thailand

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Abstract

Today's global society is full of advancement from the development of high-level technology. The study results shall be used as a guideline for developing educational institution administration to become stable and sustainable learning organizations in the future. This research aimed 1) to study levels of transformational leadership among administrators of private schools, 2) to study levels of effectiveness of educational institution administration among administrators of private schools 3) to study transformational leadership that affects effectiveness of educational institution administration of private schools and 4) to study a guideline to improve effectiveness of educational institution administration by using transformational leadership among administrators of private schools. The research was conducted on the basis of survey research design. The sample comprised 266 teachers. of private schools under Samut Sakhon Provincial Education Office. Key informants were 5 school administrators. The research results indicated as follows: 1) Overall and each aspect of transformational leadership among administrators of private schools under Samut Sakhon Provincial Education Office were at a high level, 2) Overall and each aspect of effectiveness of educational institution administration were at a high level, 3) Transformational leadership among administrators affected effectiveness of educational institution administration among administrators of private schools with the statistical significance level of 0.05, the multiple correlation coefficient was 87.80%, 4) Guidelines to improve effectiveness of educational institution administration by using transformational leadership can be summarized as follows: 4.1) Elements of transformational leadership that could be used to improve the effectiveness were intellectual stimulation and idealized influence, 4.2) Effectiveness of educational institution administration required strategic planning with PDCA, proactive policies, and advanced technology.

Keywords: Transformational Leadership, Effectiveness of Educational Institution Administration

1. Introduction

1.1 Introduce the Problem

Today's global society is full of advancement from the development of high-level technology. It is a great revolution of humankind, entering into globalization. There are changes in economic, social, and political structures, encouraging countries across the world need to depend on each other. The big world seems to be smaller. Distant areas can get in touch in a split second. Everyone enters into a united society. Technologies are advanced. Globalization or borderless world grows much faster, becomes more intense, continuous, complicated and related to each other, caused by technological advancement in each field, such as science, engineering, computer, communication and telecommunication. Innovation and technologies including social advancement have changed tremendously (Nattapan Kaejornnan. 2008: 12-13).

Educational management in accordance with National Education Act B.E. 2542 (1999) and amended by the National Education Act (No.2) B.E. 2545 (2002) and the National Education Act (No.3) B.E. 2553 (2010), Section 43, was prescribed that an administration and provision of education by private sector shall have freedom with a supervision, monitoring, and quality and educational standard evaluation from the State, and shall perform in accordance with the criteria on quality and educational standard evaluation similar to that of a public establishment of education (Office of the Basic Education Commission, 2014).

Samut Sakhon Provincial Education Office was established from the order of the National Council for Peace and Order (NCPO) number 19/2560 on reform steering in regional education and administration of the Ministry of Education, dated on 3 April 2017, item 11 – a provincial education office under Office of the Permanent Secretary for Education should be established to carry out the mission of Ministry of Education in relation to educational administration and management as prescribed by law, performing public services in accordance with duties, policies, and strategies of government agencies as assigned while duties and authorities in provincial areas are given (Samut Sakhon Provincial Education Office, online, 2022). It was said that problems and obstacles in administration and management came from a lack of public relations, a lack of participation, and a lack of integration of each group in giving cooperation on activity management.

School effectiveness is generated from the state of society, atmosphere, and environment surrounding students that shall support learning properly, including readiness of resources, documents, instructional media, materials, equipment, suitable technologies with good quality and efficiency, adequate budgets and human resources to ensure educational management shall be efficient and able to develop students to become learning persons who have better quality of life, see the value and importance of preserving natural resources and environment, live in changing society happily, contributing to stable and sustainable country development. The components of school effectiveness are formal organization in which external relationship and organizational internal process must be managed to be consistent with conditions of social education process. School system refers to learning achievement, efficient allocation of resources, adaptability to internal and external environment, and ability to create teachers' job satisfaction (Pimpan Suriyo, 2009: 27). This is consistent with the concept of Hoy and Ferguson (Hoy and Ferguson, 1985) stating that the components of the effectiveness of educational institutions are eagerness to learn, passion for reading, students' motivation to seek knowledge, teachers' job satisfaction, teachers' ability in using media, innovation, and technologies, ability to manage resources efficiently, and adaptability to internal and external environment. Robbins (Robbins. 2001:42) stated that educational institution administrators with transformational leadership were more likely to manage education in their educational institutions to achieve efficiency and effectiveness according to the set goals. One of important factors for success or failure is leaders of those organizations or educational institutions. Educational institutions play the most vital role in putting a policy into practice to achieve the determined objectives or the set goals, being able to manage education to people thoroughly and equally. The operations to enable educational institutions to have success and maximum benefits depend on various factors, such as good management, effective management in educational institutions, and using resources acquired wisely (Saman Asawapoom. 2006: 23). With regard to educational institution administration, leaders play a huge role in developing the organization to achieve effectiveness and efficiency with positive changes. Therefore, administrators need to have systematic change management for school

administration. Transformational leader is a process that influences how to change attitude at work to ensure education shall meet quality. Transformational leadership is popular nowadays as it satisfies and has an influence on followers. Therefore, it is necessary that administrators and teachers need paradigm shift, vision at work according to the theory of Bass and Avolio (Bass and Avolio, 1994) mentioning transformational leadership that it can be seen from leaders who stimulate and inspire all workers and followers to be aware of mission and vision. Based on the above reasons, the researcher was interested in studying a guideline to improve effectiveness of educational institution administration by using transformational leadership of administrators under Samut Sakhon Provincial Education Office, based on transformational leadership theory of Bass and Avolio (Bass and Avolio, 1994) and the theory of Hoy and Ferguson (Hoy and Ferguson, 1985) that affect effectiveness of educational management. The study results shall be used as a guideline for developing educational institution administration to become stable and sustainable learning organizations in the future. Why is this problem important?

1.2 State Hypotheses and Their Correspondence to Research Design

1. Transformational leadership of administrators of private schools under Samut Sakhon Provincial Education Office is at a high level.
2. Effectiveness of educational institution administration of private schools under Samut Sakhon Provincial Education Office is at a high level.
3. Transformational leadership of administrators has an effect on effectiveness of educational institution administration of administrators of private schools under Samut Sakhon Provincial Education Office with statistical significance.

2. Method

2.1 Research conceptual framework

Independent variables **Transformational leadership**	Dependent variables **Effectiveness of educational institution administration**
1) Intellectual stimulation 2) Inspirational motivation 3) Individual consideration 4) Idealized influence	1) Eagerness to learn, passion for reading, students' motivation to seek knowledge 2) Teachers' job satisfaction 3) Teachers' ability in using media, innovation, and technologies 4) Ability to manage resources efficiently 5) Adaptability to internal and external environment

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Figure 1: Conceptual framework

2.2 Research methodology

The research on a guideline to improve effectiveness of educational institution administration by using transformational leadership of administrators of private schools under Samut Sakhon Provincial Education Office

was conducted on survey research design that combines quantitative research and qualitative research. The research was conducted according to the following:

2.3 Population and sample

Population in the research included 858 teachers from 23 private schools under Samut Sakhon Provincial Education Office of the academic year 2022 (Samut Sakhon Provincial Education Office, 2022).
The sample comprised 266 teachers from 23 schools under Samut Sakhon Provincial Education Office of the academic year 2022 (Samut Sakhon Provincial Education Office, 2022). Krejcie and Morgan's table (Krejcie and Morgan, 1970: 607-610) was used to determine the sample size and the sample was selected by stratified random sampling based on the size of schools, followed by simple random sampling.

2.4 Key informants

Key informants about a guideline to improve effectiveness of educational institution administration by using transformational leadership of administrators of private schools under Samut Sakhon Provincial Education Office, selected by purposive sampling method, consisted of 5 administrators of private schools under Samut Sakhon Provincial Education Office, who received management awards or transformational leadership awards.

2.5 Research instruments

2.5.1. Quantitative research

The instrument was a questionnaire about 1) general information of questionnaire respondents. It is a checklist questionnaire consisting of genders, ages, education levels, levels of classrooms, and teaching experience, 2) opinion about transformational leadership of administrators, 3) opinion about effectiveness of educational institution administration of private schools under Samut Sakhon Provincial Education Office, in the form of 5-point rating scale (Likert. 1976:247) and open ended questions about problem status and suggestion about transformational leadership and effectiveness of educational institution administration of private schools under Samut Sakhon Provincial Education Office.

2.5.2. Qualitative research

The instrument used for data collection was a structured interview. The interview framework was determined from a point obtained from the questionnaire that teachers viewed that the development should be given to intellectual stimulation, inspirational motivation, individualized consideration, and idealized influence so as to find out a guideline to improve effectiveness of educational institution administration of private schools under Samut Sakhon Provincial Education Office.

2.6 Data analysis

Part 1 – Frequency distribution of marital status of the respondents were performed and percentage was calculated, and presented in the form of tables and text.
Part 2 – Levels of transformational leadership of administrators were analyzed mean ( ) and standard deviation (S.D.). The analysis results obtained were interpreted by item, aspect, and overall meaning.
Part 3 – Levels of effectiveness of educational institution administration were analyzed mean ( ) and standard deviation (S.D.). The analysis results obtained were interpreted by item, aspect, and overall meaning.
Part 4 – Transformational leadership affecting effectiveness of educational institution administration of private schools under Samut Sakhon Education Office was analyzed using multiple regression analysis.
Part 5 – Problems and suggestions about transformational leadership of educational institution administrators and effectiveness of educational institution administration were analyzed to measure frequency.

Part 6 – Guidelines to improve effectiveness of educational institution administration by using transformational leadership of administrators of private schools under Samut Sakhon Provincial Education Office, from an interview with administrators, were analyzed using content analysis.

3. Results

According to the study on a guideline to improve effectiveness of educational institution administration by using transformational leadership of administrators of private schools under Samut Sakhon Provincial Education Office, the analysis results can be concluded as follow:

1. Most of the respondents are women, aged 26-35 years, graduated with a bachelor's degree, teach in Prathomsuksa classroom, and had 6-10 years teaching experience.
2. Overall transformational leadership level of administrators of private schools under Samut Sakhon Provincial Education Office was at a high level. Consideration of each aspect found all aspects were at a high level. The aspect with the highest mean was intellectual stimulation (= 4.08 and S.D.= 0.56) and the aspect with the lowest mean was individualized consideration (= 4.03 and S.D.= 0.66).

Table 1: Levels of transformational leadership of administrators.
No.   Administrators' transformational leadership Operational level (n=266)

Condition	$M(SD)$	LL	UL
Intellectual stimulation	4.10(0.56)	High	1
Inspirational motivation	4.09(0.63)	High	3
Individualized consideration	4.03(0.66)	High	4
Idealized influence	4.10(0.63)	High	2

3. Overall level of effectiveness of educational institution administration of private schools under Samut Sakhon Provincial Education Office was at a high level. Consideration of each aspect found all aspects were at a high level. The aspect with the highest mean was adaptability to internal and external environment (= 4.20 and S.D.= 0.62). The aspect with the lowest mean was eagerness to learn, passion for reading, and students' motivation to seek knowledge (= 3.90 and S.D.= 0.58).

Table2: Levels of effectiveness of educational institution administration.
No.   Effectiveness of educational institution administration   Operational level (n=266)

Condition	$M(SD)$	LL	UL
Eagerness to learn, passion for reading, students' motivation to seek knowledge	3.90(0.58)	High	5
Teachers' job satisfaction	4.09(0.63)	High	3
Teachers' ability in using media, innovation, and technologies	4.13(0.53)	High	2
Ability to manage resources efficiently	4.09(0.63)	High	4
Adaptability to internal and external environment	4.20(0.62)	High	1

4. Two aspects of transformational leadership affecting effectiveness of educational institution administration of private schools under Samut Sakhon Provincial Education Office were idealized influence and intellectual stimulation, multiple correlation coefficient was 0.878, being able to mutually predict effectiveness of educational institutional administration of private schools under Samut Sakhon Provincial Education Office by 77.10% with the statistical significance level of 0.05.

Table 3: Multiple regression analysis results of transformational leadership affecting effectiveness of educational institution administration of private schools under Samut Sakhon Provincial Education Office.

Variables selected into the equation	β	SE.B	Beta	t	Sig.
Constant	.905	.113		7.973[*]	.000
Idealized influence (X_4)	.555	.045	.668	12.449[*]	.000
Intellectual stimulation (X_1)	.221	.050	.239	4.453[*]	.000

* statistical significance level of 0.05.

5. Analysis results of the open ended questionnaire about problems and suggestion about guidelines to improve effectiveness of educational institution administration by using transformational leadership of administrators of private schools under Samut Sakhon Provincial Education Office can be concluded as follow: With regard to transformational leadership, an academic meeting and training should be held, teachers' operations should be supported and admired, tasks should be assigned in accordance with teachers' abilities, and being a role model administrator. In relation to effectiveness of educational institution administration, students should be promoted to have reading behavior, learn outside classroom, teachers should have ability in using a variety of media and technologies, administrators should allocate a budget in a systematic manner and adapt themselves to new situations regularly.

6. As for guidelines to improve effectiveness of educational institution administration by using transformational leadership of administrators, 2 aspects that are able to improve the effectiveness are intellectual stimulation and idealized influence. Effectiveness of educational institution administration requires strategic planning with PDCA, proactive policies, and advanced technology.

4. Discussion

The research results on guidelines to improve effectiveness of educational institution administration by using transformational leadership of administrators of private schools under Samut Sakhon Provincial Education Office can be discussed as follow:

1. Transformation leadership of administrators of private schools under Samut Sakhon Provincial Education Office, overall and each aspect, is at a high level, especially intellectual stimulation since most administrators view the importance of global social changes. School personnel should be promoted and supported to have readiness at work. This is consistent with a study conducted by Nilawan Chantarangsi (2022:102) on the relationship between transformational leadership of educational institution administrators and online learning management by teachers in the New Normal, under the Secondary Educational Service Area Office Chanthaburi-Trat, as the study results found overall it was at a high level and consideration of each aspect found all aspects were at a high level. It is consistent with a study conducted by Orawan Puttaradomnoensuk (2021:126) and found that overall and each aspect of transformational leadership of educational institution administrators under Samut Songkhram Primary Educational Service Area Office were at a high level. A study conducted by Angkul Taowan (2019:80) on school administrators' transformational leadership that affects learning organizations under the Secondary Education Service Area Office 17 found that overall and each aspect of transformational leadership were at a high level. Which, difference to authentic leadership that the need for authentic leaders has increased in recent years. Among the most important reasons for this is that the leadership approaches are focused on increasing efficiency and speed in industrial organizations based on mass production in large factories. (Cem Akin. 2022: 344).

2. Effectiveness of educational institution administration of private schools under Samut Sakhon Provincial Education Office, overall and each aspect, is at a high level. The aspect with the highest mean is adaptability to internal and external environment. Administrators and teachers provide preparedness to cope with any impact and changes that may arise by considering the possibility of situations. A study conducted by Muhammad Faizal A. Ghani, Saedah Siraj, Norfariza Mohd Radzi, Faisol Elham. (2011 : 1711) on school effectiveness and improvement practices in excellent schools in Malaysia and Brunei found that excellent schools in Malaysia and Brunei have practiced the effective school practices based on school effectiveness and improvement approach at very often and often level respectively. This means that excellent schools are able to adopt the approach of effective school practices because of the existence of cooperation in the process variables that form the structure and culture of the

school. A study conducted by Kanokthip Dokladda (2017:66) on the relationship between educational institution administration and effectiveness of educational institution of Ratwinit Bangkaeo School under the Secondary Education Service Area Office 6 found the overall relationship is at a high level. On the other hand, resilience as a process seems to embed to an event. Thus, efforts to build resilience must align with the existing context and situation while paying attention to various resources at the individual, organizational, or community level. Moreover, efforts to build resilience need to consider the diversity of perspectives regarding how individuals, organizations, or communities understand and respond to situations and events. At the individual level, inviting individuals to seek personal meaning for what they do has a vital role in building resilience. (Sahala Harahap, Diajeng Herika Hermanu, Tanti Sugiharti, Ruslaini. 2022: 162)

3. Transformational leadership affecting effectiveness of educational institution administration of private schools under Samut Sakhon Provincial Education Office – 3 aspects of transformational leadership affecting the effectiveness of educational institution administration of private schools under Samut Sakhon Provincial Education Office are intellectual stimulation, individualized consideration, and idealized influence with the statistical significance level of 0.05. A study conducted by Lakkana Sakkemhan, Pornthep Satiennoppakao, and Walnika Chalakbang (2020:Abstract) on transformational leadership of directors affecting work effectiveness of teachers in educational institutions under the Office of Nakhon Phanom Vocational Education Commission found that 2 aspects of transformational leadership affecting work effectiveness of teachers with the statistical significance level of 0.05 were intellectual stimulation and individualized consideration. School administrators with strong self-efficacy beliefs will contribute to creating strong schools with their sustainability leadership skills. Finding a statistically significant relationship between school administrators' self-efficacy beliefs and sustainable leadership characteristics. (Tuba Yavas. 2022: 316)

4. Guidelines to improve effectiveness of educational institution administration by using transformational leadership of administrators of private schools under Samut Sakhon Provincial Education Office – 2 aspects of transformational leadership are intellectual stimulation and idealized influence. Transformational leadership of administrators shall improve effectiveness of educational institution administration, according to the interview with school administrators, by means of 1) Strategic planning with PDCA. Edward Deming (as cited in Witoon Simachokdee, 1998 : 84) stated that preparation and planning is to get better understanding of objectives and determine a control topic, goals to achieve, and methods to achieve the set goals, 2) Proactive policies – a study conducted by Achara Niyamapa (2021:181) on a model of new normal school administration to desirable educational quality in changing context concluded that the model of new normal school administration consists of proactive policies, flexible organizational structure, new operating system, reversal curriculum development, contextual learning management, and interdisciplinary assessment, 3) Advanced technologies, consistent with Suwit Hirunyakan (1997:269) giving the meaning of technology as science related to art in applying scientific knowledge for practical purposes, especially in industry.

5. Suggestions: General suggestions

1. Transformational leadership of administrators of private schools under Samut Sakhon Provincial Education Office, overall and each aspect, is at a high level. Consideration of each aspect found individualized consideration is lower than other aspects Therefore, school administrators should consider teachers increasingly by giving advice, consultation, attention, suggestion, and supporting teachers to express their capabilities to achieve career advancement. The most important thing is to assign tasks that meet the areas they are good at.

2. Effectiveness of educational institution administration of private schools under Samut Sakhon Provincial Education Office, overall and each aspect, is at a high level. However, eagerness to learn, passion for reading, and students' motivation to seek knowledge are lower than other aspects. Therefore, students should be instilled a love of reading, love to read project should be held regularly, reading corners should be provided in school areas to encourage students to seek knowledge from books and printed matters in addition to other media.

3. Transformational leadership affects effectiveness of educational institution administration of private schools under Samut Sakhon Provincial Education Office. It can be seen that there are 3 independent variables for prediction, namely, intellectual stimulation, individualized consideration, and idealized influence while inspirational motivation does not affect the effectiveness of educational institution administration. Thus, school administrators should improve and motivate teaches by means of awards, compliments, salary increase when teachers bring good reputation to school.

4. Guidelines to improve effectiveness of educational institution administration by using transformational leadership of administrators of private schools under Samut Sakhon Provincial Education Office – there is no different opinion from teachers' opinions. Intellectual stimulation and idealized influence can be developed to improve effectiveness of educational institution administration which can solve a gap between teachers and administrators. As for effectiveness of educational institution administration in relation to PDCA strategy, proactive policies, and technologies, administrators should work cooperatively with private agencies and other agencies for sharing information to develop their organizations accordingly.

6. Suggestions for future research

1. Different types of transformational leadership affecting effectiveness of educational institution administration should be studied.
2. Other transformational leadership theories should be studied to synthesize variables that shall affect effectiveness of educational institution administration.
3. Transformational leadership affecting effectiveness of educational institution administration should be studied in other provinces or other agencies to make a comparison and beneficial research results shall be used for education development accordingly.
4. A study should be conducted on a guideline to improve effectiveness of educational institution administration by using transformational leadership of administrators under other affiliations since this study was conducted among private schools under Samut Sakhon Provincial Education Office only and an interview should be conducted with more than 5 administrators in order to obtain various information.

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Enhancing High School Students' Understanding of Plant Diversity through an Innovative and Engaging Educational Card Game

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Abstract

One of the fundamental components of science education in Thailand and other regions is the study of plant diversity. Nevertheless, students' lack of interest in this topic may be due to its overwhelming content and the perceived disconnection to their daily lives. To address this issue, an educational card game that incorporates concepts of plant taxonomy, distinctive characteristics, phylum, and several examples of local plants was developed to provide a more engaging, relevant, and conceptually appropriate approach to learning. An investigation of students' conceptual understanding before and after playing the card game, as well as their motivation towards the intrinsic value of the learning, was undertaken to assess the efficacy of the developed card game. The results of the study revealed that students' participation in the activity led to an increase in conceptual knowledge and a heightened degree of internalisation in motivation. As such, it is recommended that teachers incorporate the use of this educational card game in their curriculum to enhance students' understanding and appreciation of the topic of plant diversity.

Keywords: Card Game, Plant Diversity, Self-Determination Theory, Game-Based Learning

1. Introduction

Plant biology is an integral part of the high school biology curriculum. The subject covers various topics such as taxonomy, identification, distinctive characteristics, phylum, and examples. The inclusion of this topic in the science curriculum can pique students' interest in plants and enhance their appreciation for biodiversity. However, students' knowledge of plant biology and taxonomy is often limited, and they may find it challenging to correctly identify different plant species due to its excessive content and perceived irrelevance to daily life (Prokop et al.,

2007; Randler, 2008). Moreover, the use of technical terminology further compounds the issue, and teaching from a teacher-centered perspective can lead to disinterest and boredom among students.

Bebbington (2005) conducted a study on A-level biology students' ability to recognise and identify wildflowers. The results revealed that the majority of students could only name three or fewer plant species, and over 41% could not identify a single plant. Similarly, postgraduate students showed a lack of interest in acquiring identification skills, viewing it as the responsibility of experts. These findings are consistent with Lückmann and Menzel's (2014) study, which showed that adolescents possessed limited plant knowledge due to a lack of interest in plants. Additionally, Fanoviová and Prokop (2010) found that the majority of students lacked a favorable view of plants, despite understanding their importance in the environment.

To address this issue, a study developed an educational card game that incorporated plant taxonomy, distinctive characteristics, phylum, and local plant examples to make the subject more engaging and relevant to students. The activity led to an increase in students' conceptual knowledge and motivation, indicating its effectiveness in enhancing the learning experience (Lindemann-Matthies, 2002). Therefore, it is recommended that educators adopt innovative methods such as educational card games to make the teaching and learning of plant biology more engaging and effective.

To address the issue of learning difficulties in biology, including plant biology, science educators and teachers have experimented with various instructional strategies, such as fieldwork, laboratories, and dichotomous key identification (Lindemann-Matthies, 2002; Basey et al., 2014; Randler, 2008). For instance, Lindemann-Matthies (2002) developed an educational program called Nature on the Way to School that exposed Swiss students aged 8-16 to new species in their daily lives. However, the program's effectiveness was limited due to its duration, which took 7 weeks to complete, and the decrease in positive attitudes towards plant biology in older students. Additionally, fieldwork may only expose students to a few species and miss important technical terms required for classification (Kirchoff et al., 2014). Alternatively, Basey and colleagues (2014) investigated the efficacy of two hands-on laboratories that lasted 15 weeks in teaching plant biodiversity to undergraduates. Although both experiments improved students' cognitive and affective outcomes, it required a long duration, making them impractical for high school implementation.

Lastly, Randler (2008) compared the efficacy of dichotomous and illustration keys for animal identification instruction. The illustration key displayed an image of the respective task and symbol, while the dichotomous key began with a choice between two options. Students using picture-based illustration keys outperformed those using dichotomous keys on post-tests, indicating that text-based dichotomous keys without images produced inferior cognitive outcomes and memorisation of organisms among students. This result aligns with Stagg and Donkin's (2013) finding that dichotomous keys are less effective in promoting species identification among participants. By using effective instructional strategies, such as laboratories and illustration keys, educators and teachers can enhance students' cognitive and affective outcomes in biology, particularly in plant biology.

Card games have been found to be an effective and engaging tool in teaching various topics in science. Utilising card games in classroom instruction is practical and can greatly benefit active learners. According to Threekunprapa and Yasri (2020), card games have been employed in school education to enhance students' memorisation, comprehension, and motivation to learn. Specifically, card games can provide students with basic knowledge and technical terms, which encourage them to progress from simple to complex knowledge. Additionally, card games with engaging rules help students recall previously learned information, making the learning of biology more meaningful and attractive, especially for students overwhelmed with content. For instance, Piyawattanaviroj et al. (2019) utilised card games to teach the periodic table, while Threekunprapa and Yasri (2021) used them for computational thinking and coding. Su, Cheng, and Lin (2014) and Gutierrez (2014) utilised card games to teach human immunology and co-evolution, respectively. To demonstrate the effectiveness of card games in the teaching of biological classification, Punyasettro and Yasri (2021) designed the VERT card game to help students understand the phylogenetic classification of chordates. The card game aimed to educate students on the features of chordate classes and facilitate the construction and interpretation of evolutionary relationships using the phylogenetic tree. The efficacy of the card game was assessed by giving 109 middle school

students a pre- and post-test, revealing significant improvements in their understanding and self-efficacy for learning evolutionary biology. Moreover, students viewed the card game positively and expressed interest in using it for lesson reviews and in other topics in biology. Thus, card games are a practical and effective teaching tool that can enhance students' understanding and motivation to learn about biological classification.

In the realm of education, card games have been shown to be an effective tool for promoting student engagement and enhancing learning outcomes (Brosi & Huish, 2014). However, in the literature, there is a lack of educational card games on plant diversity that cover plant taxonomy and evolutionary characteristics. To address this gap, the present study developed an educational card game that utilises the rummy rule to promote students' understanding of plant diversity at the high school level. Specifically, the card game was designed to aid students in reviewing materials after learning about plant diversity, with a focus on promoting their remembering and understanding of the topic. While knowledge application is important in any teaching context, this study aimed to use the card game to enhance students' engagement and facilitate the development of a solid foundation for future knowledge applications. Moreover, in addition to the cognitive dimension, this study also sought to investigate the effect of the developed card game on students' attitudes towards plant taxonomy, using the self-determination framework proposed by Ryan and Deci (2000). By incorporating this framework, the study aimed to promote students' autonomous motivation and engagement in the learning process. Overall, the developed card game has the potential to be a valuable resource for high school teachers looking to enhance their students' understanding of plant diversity and taxonomy, while simultaneously promoting positive attitudes towards learning.
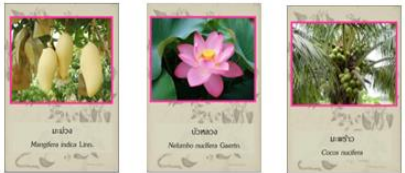
2. Method

2.1 The card game

The card game was developed using the rummy rule to assist students in reviewing their knowledge after studying. It has three main themes: 1) plant taxonomy and examples 2) the main characteristics of each phylum (the vascular and reproductive systems), and 3) distinguishing features. The card game is comprised of 66 cards, divided into three types: characteristics cards, example cards, and challenge cards. Examples of these cards are shown in Appendix A. The characteristics cards represent the reproductive parts of plants in four major groups and their generational alternation, using pictures and short descriptions. In each phylum, the example cards include images and plant names. Finally, there are skip, backward, and discard cards in the challenge deck.

The card game consists of two sections. The first section involves the melding of plants into the correct phylum, through which students can learn about the examples of plants in each phylum. The second section focuses on the combination of plant examples from the first section with characteristic cards. Here, students can learn about the main characteristics of plants in each phylum from the plant example cards and characteristic cards. The mission for players is to discard cards from their hands by using three possible options (as detailed in Table 1). The winner is the one who empties all cards first. For further details about the rules of the card game, please refer to Appendix B.

Table 1: Possible approaches to discard cards

1. Plants and their phylum Players are required to match a minimum of three cards of plants belonging to the same phylum from their hands and then place them face-up in front of them. For instance, mango, lotus, and coconut cards could be used as examples of melding, as they are members of the same phylum. It is important to note that players can confirm their response by checking the corresponding colour, such as pink. The picture on the right column illustrates the melding of three cards from the same phylum (anthophyte or angiosperm plants).	

2. Plants and their distinct characteristics In addition to grouping cards by phylum, players can also meld cards based on their distinctive characteristics by combining two plant example cards with at least one characteristic card from their hand and placing them face-up on the table. For example, the picture on the right column shows melding three cards that have cones as their reproductive part. The first two cards represent gymnosperm plants that have cones (the third card) as their reproductive part.	
3. Plants and their evolutionary trend Alternatively, players can meld three cards according to their evolutionary trend. They can match at least three of their characteristic cards with cards that follow the evolution trend of distinct characteristics. For example, the combination on the right column follows the trend of evolution. The first card shows the spore of a seedless vascular plant. The second card depicts a cone of naked seeds, and the third depicts a flowering plant.	

2.2 Data collection and analysis

To evaluate the efficacy of the card game, a research design was implemented to compare the learning outcomes and motivation of students before and after participating in the newly developed card game activity on plant diversity. The study utilised pre-lecture (T1), post-lecture (T2), and post-activity (T3) tests to determine changes in students' conceptual understanding of plant diversity. Furthermore, the study measured students' motivation towards learning plant diversity using the self-determination motivation questionnaire (SDT) both before and after the learning activity.

The conceptual test comprised 19 items, worth a total of 35 points, and was divided into four sections. The first section consisted of eight multiple-choice items that aimed to assess students' knowledge of nonvascular plant characteristics. The second section included five true-false items that aimed to assess students' knowledge of vascular plant characteristics. The third section comprised five matching items to test students' knowledge of plant examples at the phylum level. The final section included five multiple-choice items designed to assess students' knowledge of plant characteristics and examples from each phylum.

The student motivation questionnaire was developed based on the self-determination motivation theory (Ryan & Deci, 2000). This questionnaire was administered to investigate students' self-motivation before and after participating in the activity. The questionnaire consisted of 18 items on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). It was designed based on 6 types of self-motivation theory: amotivation, external regulation, introjected regulation, identified regulation, integrated regulation, and intrinsic regulation, each consisting of 3 items which were sorted alternately. The results obtained from the SDT questionnaire were calculated to determine the internalisation level by subtracting the summation of scores from intrinsic, integrated and identified levels (internalised levels), from the summation of scores from amotivation, external, introjected levels (externalised levels).

The research was conducted at two high schools in Bangkok, Thailand, situated in different districts of the city. A total of 102 male and female high school students who were enrolled in the science-mathematics program participated in the study. Participants were recruited using convenience sampling with ethical aspects such as voluntary participation, anonymity, and confidentiality carefully considered. The participants had prior experience with the biology material on plant taxonomy when they were in lower secondary school. However, they had not covered this subject in the level of education that is the focus of this research, which is high school.

3. Results

3.1 Student development of conceptual understanding

The data collected from the conceptual test was analysed using SPSS to investigate changes in students' learning outcomes across the three periods. The results of the analysis are presented in Table 2, which displays the mean scores and standard deviations of the students for the T1, T2, and T3 tests. The mean score for T1 was 11.70 (SD = 3.00), for T2 was 16.00 (SD = 4.45), and for T3 was 20.14 (SD = 4.94).

The Wilcoxon signed rank test was used to evaluate the statistical significance of the differences in the mean scores between the three periods. The test revealed statistically significant differences between the T1 mean and T2 mean, T2 mean and T3 mean, and T3 mean and T1 mean at a significance level of 95%. These results suggest that the participants' performance improved significantly from T1 to T2, and from T2 to T3. Furthermore, the highest mean score was observed for T3, indicating that the students' conceptual development on plant diversity was significantly enhanced after engaging in the card game activity.

Overall, the findings of the analysis demonstrate the effectiveness of the card game activity in promoting students' conceptual development on plant diversity, as evidenced by the significant improvement in their test scores across the three periods.

Table 2: The Wilcoxon signed rank test of student scores

	N	Mean	SD	Minimum	Maximum
T1	102	11.70	3.00	0.00	19.00
T2	102	16.00	4.45	8.00	26.00
T3	102	20.14	4.94	10.00	33.00

	T2 – T1	T3- T2	T3-T1
Z	-7.164[b]	-8.602[b]	-7.865[b]
Asymp. Sig. (2-tailed)	.000	.000	.000

a. Wilcoxon Signed Ranks Test
b. Based on negative ranks.

3.2 *Student improvement of motivation to learn*

After conducting the analysis on the student motivation questionnaire, the results revealed a notable increase in the level of internalisation expressed by the students from the pre-test to the post-test, as depicted in Table 3. Specifically, the average internalisation level of the students before the activity was 2.76, whereas their average internalisation level after participating in the card game increased to 4.15. The statistical difference between these two scores was determined using the Wilcoxon signed rank test, which indicated a significant improvement in the level of internalisation experienced by the students.

The findings suggest that, prior to engaging in the card game activity, the students' motivation to learn about plant taxonomy was primarily driven by external factors. However, after playing the game, they demonstrated a greater sense of intrinsic motivation, indicating that their enjoyment and interest in learning had increased. This positive shift in the students' motivation towards the topic has important implications for their future academic performance and engagement in biology, as well as their overall attitudes towards learning in general.

Table 3: The Wilcoxon signed rank test of self-determination

	N	Mean	SD	Minimum	Maximum
Pre	102	2.76	6.58	-8	33
Post	102	4.15	7.51	-13	34

	Pre-Post
Z	-2.622[b]
Asymp. Sig. (2-tailed)	.009

a. Wilcoxon Signed Ranks Test
b. Based on negative ranks.

4. Discussion

The initial performance of students on the pre-lecture examination (T1) suggests that they had limited knowledge of plant diversity (Lückmann & Menzel, 2014). This is a common issue that affects a broad age range of school students and may also be prevalent among the general population. Even among biology students who are expected to master this type of material, underdeveloped ability to identify plant taxonomic groups has been reported (Bebbington, 2005). Despite this, there was an overall statistical increase in students' comprehension of the assessed topic. As expected, students performed better on tests after listening to the lecture (T2), as lectures can effectively impart broad and deep knowledge in a short amount of time. However, the post-activity test yielded the highest mean score (T3), indicating that playing the card game can reinforce students' understanding to an even greater degree. This finding highlights the effectiveness of the card game in teaching plant diversity. Although it is possible that students may not directly use the card game as an instructional tool to generate their understanding from scratch, it serves as an effective revision tool that students can use after completing their formal studies. By making sense of the rules and attempting to win the competition, implementing the card game in this manner assists students in reviewing their lessons and broadening their comprehension.

This positive result can be attributed to the card game's ability to provide students with background knowledge and conceptual understanding of plant taxonomy and its primary characteristics related to evolution. By focusing on the function of the card game, it offers students a unique opportunity to learn and review the subject matter. By arranging three cards into groups, students can learn about the primary characteristics of plants, including the alternation of generations, the reproductive parts of plants, and the vascular system. When students correctly match the example of a plant to its characteristics, they gain knowledge of the various characteristics of each plant. The results of this study validate this assumption, as test scores indicate that playing the card game helps students improve and review their knowledge in this area. In addition, one of the card game's rules is matching plants to their phylum. Students must know which phylum each plant belongs to and match at least three cards together. By doing so, students can gain knowledge of plant examples from various phyla. Although this study involves matching three cards based on their corresponding colours, it is possible to argue that students can gain familiarity with the game beyond just relying on colour matching through repeated gameplay. Moreover, comparing students' scores before and after the card game reveals that students' scores improved in this section after playing the card game. In sum, this study demonstrates that the card game effectively promotes students' understanding and engagement in learning plant diversity. By providing a fun and interactive way to review the material, the card game can supplement traditional teaching methods and enhance students' comprehension of the subject matter.

Based on the findings of this study, it appears that educational card games can be an effective way to improve students' conceptual understanding of a topic. This result is consistent with other studies that have employed educational card games to address learning difficulties in various contexts (Gibson et al., 2015; Gutierrez, 2014;

Punyasettro & Yasri, 2021; Stagg & Donkin, 2013; Su et al., 2014). However, some doubts have been raised regarding whether the improvement in students' test scores is due solely to the card games themselves or to the influence of the teacher's instruction during the lecture. This study sought to address these doubts by highlighting the positive impact of both the lecture and the card game activity on students' conceptual understanding. It is important for teachers to recognise the limitations of their role in this learning package. While it may be tempting to provide clear explanations to students, in this case, the explanation is given only to a certain degree, enough for students to proceed with the game. Some parts require students to learn from the game itself. Therefore, the teacher's explanation in this study focused only on technical terms and key features relevant to the game, such as the name of each phylum, the main characteristics, the alternation of generations, and some examples. Students must construct their understanding by applying these key concepts to examples presented on the cards and practicing with multiple repetitions to become more familiar with and remember the material. This study, therefore, highlights the potential of educational card games as an effective teaching tool to enhance conceptual understanding. Moreover, it underscores the importance of the teacher's role in guiding students through this process, striking a balance between providing necessary explanations and allowing students to construct their understanding through active participation.

Turning to the discussion about student motivation to learn, after playing the card game, the majority of students appeared to be more internalised to intrinsic motivation, indicating that they enjoyed learning more. This indicates that the activity could assist students in transitioning from externally-driven factors of learning, externalisation, which have dominated their learning since the beginning, to intrinsic motivation. This is a positive indicator of learning in any context. To shift from extrinsically controlled motivation, SDT suggests that the extrinsic level of motivation can be changed to a higher level of internalisation through a well-designed educational innovation and teachers' facilitation of student learning (Christopher & Ryan, 2009). In this study, the teacher's role consisted of introducing the essential content and the learning activity, as well as acting as a facilitator to provide students with feedback to reduce student anxiety regarding the academic content of the game. Students playing the card game felt more challenged and less pressured as a result. In addition, the design of the card game and the activity contribute to this favourable outcome. This is due to the fact that the competition's rules are designed to provide students with a challenging environment in which to compete.

Focusing on possible suggestions for further studies, first and foremost, the content of this card game contains information about plant diversity focusing on the characteristics of plants within each phylum. Therefore, this content necessitates that students know plant terminology and their characteristics. Based on this, it is recommended that the lecture section and teacher explanation are important for the implementation of the card game activity. This is because teaching in an active learning classroom does not mean that teachers should do nothing. Several studies start the activities with instructors who explain the introduction of content before students start playing the game. In addition, to make this type of educational innovation applicable to learning contexts, it is essential to provide students with local plants that they are familiar with, so that they can see the value and apply it in their lives. Furthermore, this concept can be applied to other biology topics that require students to comprehend the relationship between technical terms. Last but not least, rummy games have been made appear online in various platforms for recreational purposes. This physical game can be converted into an online activity that educates and entertains student players in a more engaging manner and can be used in a blended learning environment as suggested by the existing literature (Maleesut et al., 2019; Seangdeang & Yasri, 2019).

To finish up the discussion, we would like to point out conceptual and methodological challenges in this study. First, conceptual limitations of this card game revolve around its content which is excessive for students to learn in their limited time. This is because plant examples in some phyla contain multiple species. Therefore, to play in the allotted time, the card game could not provide students with all examples of plants, but could only serve students with familiar species or local plants. Second, time constraints represent a methodological limitation in this study. Due to the excessively brief high school period, students only had fifty minutes to play the card game as a result of the study's design. Thus, students could only play it for two or three rounds at most. This would have been more efficient if they had more time to play and discuss with their classmates. In addition, although the student participants could play the game with no major difficulties, the rule is quite complicated, perhaps for other

groups of learners who are not familiar with the rummy rule. Students probably need more time to get into the rule and play efficiently.

5. Conclusion

Plant diversity is an important topic for high school students because it is a fundamental concept that can be applied to other disciplines, including botany, ecology, and the environment. However, the majority of students viewed this subject as difficult and were less interested in plant diversity. This is because of the volume of material and students' perception that it has no relevance to their daily lives. This study, therefore, developed a card game to assist students in learning and reviewing this subject matter. According to the effectiveness of card games, the participating students had poor prior knowledge about plant diversity, but after studying in the lecture section, their knowledge improved statistically, and the card game could even help them retain this knowledge and improve their understanding even further. This indicates that to implement the card game, the teacher must still introduce the topic to the students and serve as a facilitator when the students play card games. The developed card game should be used after students have knowledge about technical terms and what technical terms refer to. This will enable students to play the card game with greater fluency and benefit. Also, this study revealed that students' motivation to learn about plant diversity was becoming significantly more internalised, demonstrating a significant change in intrinsic motivation. The change in students' motivation resulted from the teacher's instruction and the card game they played. This implies that the design of a card game-based learning activity should combine teaching and playing to be effective.

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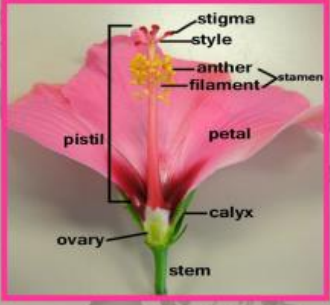
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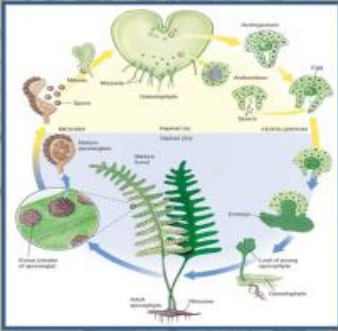
Appendix A: The cards

Characteristics cards

Plant example cards

Appendix B: The rule of the card game

Each round can have between two and seven players. The roles of the players are as follows:
1. After all players have been dealt a hand of playing cards, the player to the dealer's left will begin pulling cards. A player must add one card from the top of the stock pile or the top of the discard pile to their hand in order to draw a card. The discard pile is revealed, letting players to see who they will get in beforehand. If a player chooses to draw from the stock, they will not see the card until after they have committed to accepting it. The card is added to the player's hand without being shown to the other players.
2. If a player has a valid group or sequence in their hand, he or she may meld the cards by placing one of these combinations face up in front of him/her. A player cannot create multiple combinations in a single turn. Melding is optional; players are not required to do so. To lay down cards is optional as well. If desired, a player may add cards to groups or sequences they or others have previously melded. A player may discard any number of cards during his or her turn.
3. A player must discard one card from their hand at the end of their turn and place it on top of the discard pile. If a player begins their turn by taking the top card from the discard pile, they may not complete their turn by discarding the same card, leaving the discard pile untouched. A player may retrieve a card from the discard pile and then discard it on a subsequent round. If a player draws a card from the stock, he or she may choose to discard it within the same round. If there are no more cards in the stock pile and the next player chooses not to accept the discard, the discard pile is flipped without shuffling to produce a new stock, and play continues.
4. At least three cards must meet the criterion for a player to be able to add a card from his hand to an existing set on the table. In the game, challenge cards play specific roles. For the skip card, the player may play it to skip that turn without drawing additional cards. In the case of backward cards, the player to the right of the player who discards the backward card must play the following turn, and the game then returns to the left. The player may discard and play a card along with other cards that correspond to the given description of plant vascular.
5. A player wins a hand by melding, laying off, or discarding all of his or her cards. Using one of these strategies to eliminate a player's final card is known as going out.

Concept Questions and Alternatives: Easing Check Understanding

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Abstract

It is axiomatic to think of teaching, especially in a foreign language classroom context, without having moments to verify the extent to which the teaching is being successful or not. Teacher's input is no guarantee that intake and output are taking place. Therefore, there is a constant need to check for understanding which is done usually by the means of questioning. However, the efficiency and the type of questions to be asked are crucial to assure the effectiveness of the check for understanding. Teachers, and language teachers in particular, should have a repertoire of means to check for understanding, there should be a variation not only in the types of questions to ask, but also in the use some alternatives which may bring variety and joy. Concept Questions (CQs) have been proven to be an effective means to check for understanding, they are easy, quick and simple which can make checks for understanding more efficient for teachers and students, but they should be well planned and asked depending very much on the stage of the lesson and what is being checked. The purpose of this article is to discuss how CQs are to be prepared, illustrate the way they can be successfully used in a language lesson, having a of Presentation Practice and Production (PPP) lesson as an example, and present new alternatives for check for understanding in a language classroom.

Keywords: Check Understating, Concept Questions, Alternatives

1. Introduction

Asking the right questions at the right time with the right words in a conversation is like good chefs who know the right time, the right amount, and the right temperature to cook his food. Questioning is the root of planning. It is the root of searching for the unknown and the root of development. In English language teaching, the right question formation "is a basic part of teaching and learning English" (Zimmerman, 2015, p. 32).

What is more, a very high percentage of teaching and learning in the classroom involves questions and answers (Talebinezahd, 2003, p. 46). In teaching, questioning is not only done when testing or practicing, it is also done when checking for student understanding. Questions such as "Is it clear?" "Any problem?" "Any doubt?" are valuable but not reliable when teachers want to check for understanding. Thus, teachers have to look for alternative ways to check for student understanding.

The use of Concept Questions is an easy, quick and simple procedure which can make checks for understanding more efficient for teachers and students. The purpose of this article is to show how CQs can be asked and successfully used in EFL lessons particularly when used in the Presentation Practice and Production (PPP) approach.

2. Questions in a language classroom

Most teaching practice involves questions. Teachers use questions to teach, test and chat. Display and referential questions are one category of questions used in the classroom. Nunan (1989) maintains that the difference between display and referential questions is that the former refers to questions that questioners asks and know the answers to, and the latter has to do with questions that questioners ask because they do not know the answers.

In his explanation of display questions, Talebinezahd (2003, p. 46) writes, "Some teachers give their students the information and then try to ask them questions. For example, "This is a pen. What is this?" Such questions, at best, test something of the students' memory, not their comprehension". As for referential questions, Talebinezahd (2003, p. 46) warns that they should be "meaning based, and not focus solely on form."

Another category of classroom questions involves polar closed questions, closed questions, and open questions (Scrivener, 2012 as cited in Rachmawaty and Ariani, 2018, p. 41). Polar closed questions are those that require one of two possible one-word answers. Alternative questions fit into this type of question, examples are "Is Japan in Asia or America?", "Do you live in a house or a flat?". Closed Questions are questions about facts. Usually there is only one possible correct answer. For example, "Are you a student?", "Is Windhoek the capital city of Namibia?" Open questions are questions with no single possible correct answer. Different convincing answers are acceptable, examples are "What is the best way to learn a foreign language?", "When should people retire?".

A third question category is test questions. Test question are questions asked to test students' knowledge. For example, teachers may ask students "What is the plural of foot?" In this case teachers are testing students' mastery of the irregular plural.

CQs, another category of questions, can be defined, as Gower et al. (2005) put it, as procedures to check whether pupils understand the information taught by asking display questions and referential questions. Concepts questions are used to highlight the gist of the meaning of the target language taught during a lesson and verbally check students' understanding of new vocabulary, grammar points, communicative functions and instructions presented in class (Kargar and Divsar, 2019). The focus of this article is on CQs which can be defined as questions for check students' understanding of what is taught and instructions given for classroom management. They require very short answers, usually one or two words and teachers generally know the correct answers that they expect their students to give.

3. The Importance of Concept Questions

CQs are important because they allow students to convey meaning and understanding of grammar in an efficient, student-centered manner (David, 2007; Florkowska, 2018; Workman, 2008). CQs are effective because students´ responses to these questions may tell teachers if students understand or not, they are student-centered because students are likely to give their own real answers.

The use of CQs can help teachers see if students fully comprehend instructions and their use allows teachers to clarify the areas which students did not grasp (Zurakowski, nd). CQs may help teachers have an idea if students understand the new language or the instructions given, but they may not, sometimes, give teachers a "full" view of students' understanding. In fact, no technique, question or procedure will give teachers such an understanding. Whenever necessary, teachers have to combine different techniques to check for understanding despite the fact that CQs are effective. CQs allow teachers to notice the areas that students still find confusing (Zurakowski, nd). In other words, CQs help teachers carry out remedial work after teaching, and/or after presenting a new language concept because it is often the case that the lesson will not proceed if students lack understanding.

CQs help teachers determine if students understand what was taught without directly asking, "Do you understand?" What is more, CQ may be a starting point for a natural conversation. Students may expand on their answers and ideas. CQs may allow teachers to evaluate what students know. They may help students articulate their English knowledge and teachers may clarify and add to such knowledge (see https://bridge.edu/tefl/blog/ccq-using-concept-checking-questions-esl-classroom/).

In short, CQs may help teachers check student understanding. CQs may open a conversation between students and students, and teachers can create natural conversations with students starting with their answers. Student answers will permit students to express and incorporate ideas about what is taught and this, in turn, may make for more student-centered teaching.

4. Guidelines on How to Make Concept Questions

It is important to understand the way a procedure can be used before using it. Although creativity and spontaneity are part of teaching, knowing the backbone of a technique is critically important for teachers. Before jumping into the guidelines on how to make CQs, it is important for teachers to bear in mind the following general principles of classroom questioning as summarized by Talebinezahd (2003):

1. Always have a purpose for your questions, other than testing the students' knowledge of form.
2. Ask for information you do not share with your learners, but make sure they have it, because you do not want to be confined to clichés.
3. Try to contextualize your questions and make them as learning-based as possible.
4. Do not let questions and answers become only one-way activities: questions from teachers and answers from students (p. 47).

The principles above should be taken into account when planning and asking CQs. One principle is to not ask questions that require student knowledge about For example when asking CQs to check for understanding the word "plane" teachers should not ask "Does it have two engines?" In this case the teacher is testing students' knowledge about planes rather than check for understanding. Contextualization is another principle to be considered when planning or asking CQs. For example, when checking to understand the word *Spring* in a context like Angola where there is no such season, a teacher may ask, "Does it snow in spring?" First students are unlikely to know what snow is. Second, they undoubtedly never lived in a place where there is snow. Unless the teacher explains what snow is, teachers should ask communicative questions and avoid questions which are memory questions. Below are some guidelines to consider when planning and asking CQs.

- Jot down different concepts related to the item being checked. For example, if teaching the word *strawberry* teachers can write the following statements. It is usually red. It is sweet. It is small. From these statements it is easy for teachers to plan the CQs .
  For the first statement, "it is usually red", a concept question may be *Is it usually red*?. For the second statement, a concept question may be *Is it sweet*? For the third statement, a concept question may be *Is it small*? Teachers can consider this guideline mainly when planning CQs to check for students' understanding of new vocabulary.
- Use simple language. Language used in CQs should be within students' comprehension. The fewer words the better. Teachers should not embellish their language or be too wordy. If the question sounds too complex students can become confused and bored. For example, when teaching *the present continuous* and using the sentence *I'm driving to my work*, the following question may be very complicated, *Am I inside a four wheel vehicle with an engine on a street moving towards the place where I am paid for what I do?* Teachers should avoid very wordy and complicated questions. Instead teachers could simply ask *Am I going to my job? Am I on a bus? Is the car mine?* These are simple and short questions.
- Do not use the same language taught in the concept question. It is not a good idea to incorporate the language we are checking in the concept question because students may answer correctly even if they do

not understand what was taught. For example, when teaching comparisons and the grammatical structure *short adjective+er than* and the sentence is *Lubango (an Angolan city) is colder than Ondjiva (an Angolan city)* an ineffective concept question would be *Is Lubango colder than Ondjiva?* It is obvious that students will answer yes even if they did not understand what colder than is. A better question would be *Is the temperature higher in Ondjiva? Where do we need more air conditioning, Lubango or Ondjiva?* Teachers do not have to incorporate colder than in these questions.

- Ask questions that require short, simple answers. It is important when asking CQs to pose questions that require short answers. Asking open-ended questions may lead to various possible answers that may end up bewildering the teachers and others students in the class. More preferable is to ask *Yes or No Questions* and *Alternative Questions* such questions that require short answers, although some *Wh Questions* may also elicit a single answer. For example when teaching past events using verbs in the simple past in the *sentence Júlia went to Benguela yesterday*, a simple concept question could be *Is Júlia here?* or *Did she go there today? Did she go to Huambo?* Note that all questions require a single answer. The possibilities for other answers are very remote.

- Ask questions to check for understanding of the language taught, not of the situation. In other words, when checking for understanding the focus should be on the language alone, and the teacher should avoid asking questions that require answers beyond the language focus being taught. For example, the topic is *Other People's Routines* and the teacher taught *Katumbo does not have breakfast and goes to school at 7 0'clock in the morning.* The teacher should not ask questions like *Is Katumbo healthy? Why do think she does not have breakfast? Are her parents poor? Should the school provide breakfast for pupils like Katumbo?* These questions do not check for understanding of the language taught. Instead the teacher can simply ask *Does Katumbo eat in the morning? Does she have a meal before going to school?*

- Be receptive to students' unanticipated answers. Students' may give a yes to a question that teachers had expected them to answer *no*. Sometimes students may explain their answer. In these cases, teachers should listen to the students. Students can support their answer and teachers should be flexible and not consider themselves as knowers of everything. For example, if teachers teach the word *skirt* and want to check for understanding, they may ask *Do men wear skirts?* In some rural areas of southern Angola, some men wear cloth that resembles a skirt. If students answer yes, in this case as long as they can explain their answers, this answer may be considered correct. For beginning students if they do not have enough English they may explain their answer in the L1 if others in the classroom share the same L1.

- Involve students in questioning. Give the floor to the class to ask CQs about the language being taught. They may want to focus primarily on vocabulary. For example, when teaching the word *breakfast*, teachers may ask *Can we have bread for breakfast?* Students may continue by asking *Can you have Kizangua (a local non alcoholic maize drink) for breakfast?* This should only be done if teachers have enough time and if they can involve one or two students. Otherwise, it may sound like a drill.

When planning or asking concept questions teachers should bear in mind that CQs should use simple language. The language being checked should not be a part of the question. The questions should focus on what is taught, not social situations. When planning, it is good to jot down different concepts related to the item being checked because these notes may help teachers to construct the questions.

5. Concept Questions in a Lesson

To illustrate how we can use CQs in English lessons we can adopt the Presentation Practice Production (PPP) approach. PPP is a commonly used approach to train teachers of English and to teach English in many parts of the world. As the name suggests, a PPP lesson usually has three stages: Presentation, Practice and Production. At the presentation stage, the new language is presented, i.e, new words, new structures or any new linguistic item. Teachers usually teach the meaning, the pronunciation and the written form of the new language, i.e, what the new language means, how it sounds and what it looks like. This is a very teacher-controlled.

At the practice stage, also called controlled practice, the new language is practiced in a very mechanical way, usually based on verbal or picture prompts. Usually students do not express their opinions, feelings, and ideas.

The focus is to manipulate the new language. Teachers usually correct most of the mistakes students commit. At this stage the degree of teacher control decreases.

At the production stage, also called freer practice, students practice the language in creative and communicative activities, incorporating ideas, feelings and opinions of what is being practiced. Students are allowed to incorporate other language which might not have been taught. Teachers may delay error correction. There are several alternatives to PPP but this is a very commonly used approach. It is also called the *popular methodology*. Although CQs can be used a PPP lesson format, CQs can be adapted to almost all formats of an English lesson.

6. Presentation

Let us consider a school located in a rural area. The students are beginners. The topic presented is, for example, Jobs and the new vocabulary includes the words nurse, farmer, and police officer (for the sake of this article only these jobs were selected, but other common jobs around the world may include teachers, taxi driver, and mechanics).

Step 1: Teacher introduces the new topic:

Teacher: *Today we are going to talk about Jobs.*

Step 2: Teacher clarifies the term, jobs, by showing different pictures of jobs.

Teacher checks for understanding:
Teacher: *Are jobs for adults or for children?*
Students: *For adults*
Teacher: *Do adults receive a salary?*
Students: *Yes*
Teacher: *Do you want to have a job in the future?*
Students: *Yes*
In this example, the teacher asks questions that do not require long answers. Students simply offer one answer for the first question and yes or no for the rest.

Step 3: Teacher focuses on the meaning of the new words using pictures. After focusing on the meaning of the new words the teacher checks for understanding.

For the word nurse.
Teacher: *Does a nurse wear a uniform?*
Students: *Yes*
Teacher: *Does a nurse work in a school or an hospital?*
Students: *In an hospital.*
In the first question there is one characteristic, the nurse's uniform. Although there are other jobs where workers wear uniforms, nurses do most of the time. As for the second question it is very easy for students to understand that nurses usually work in hospitals, and the word hospital is very familiar to students.
For the word farmer:
Teacher: *Does a farmer work in agriculture?*
Students: *Yes*
Teacher: *Do farmers work in the city?*
Students: *No*
In the first question the word agriculture is related to farmers and students would easily understand it. Their answer would be realistic. As to the second question students know the word city and farmers usually work on farms outside of the city. The word city is not as difficult as words like fertilizer or seeds.
For the word Police Officer:

Teacher: *Do they wear a brown or blue uniform?*
Students: *Blue uniform.*
Teacher: *Can they work on the weekends?*
Students: *Yes*
Words like guns, sirens, and law enforcement are avoided because students may not know these terms. The teacher tries to use words which are within the range of students' vocabulary. Students know the uniform that police officers wear. So these words are familiar to the students. The questions are short, they simple requiring a single answer.

Step 4: After clarifying the new topic and presenting the new vocabulary the teacher focuses on pronunciation and the written form of the new vocabulary.

Turning to the presentation of the new structure, *what are you going to be...? I am going to be....* The teacher creates a context in which Kawé and Yola (two boys who are friends) talk about their future plans using T-T interactions and pictures.
Kawé: *Hello Yola.*
Yola: *Hello Kawé.*
Kawé: *What are you going to be when you grow up?*
Yola: *I am going to be a nurse. And you?*
Kawé: *I am going to be a police officer, I like that uniform.*
 To check for understanding of the question what are you going to be when you grow up? the teacher asks the following concept questions:
Teacher: *Is Kawé asking about the present or future?*
Students: *Future*
Teacher: *Does Kawé want to have Yola's job in the future?*
Students: *Yes*
To check for understanding of Yola's answer, the teacher asks the following questions.
Teacher: *Does Yola want to treat people in the future?*
Students: *Yes*
To check for understanding of Kawé's answer, the teacher asks the following question:
Teacher: *Is Kawé joining the military in the future?*
Students: *No*
In both examples the questions are simple and clear. The teacher avoids incorporating going to be in the questions.

Step 5: The teacher focuses on the pronunciation and written form of the questions and answers, highlighting the new structures by underlining them.

Practice
Step 6: At the practice stage the teacher gives some picture prompts by asking students questions. They have to answer according to the picture the teacher displays:

Teacher: Now, I am going to ask you the question and you are going to answer. Teacher demonstrates with a student to make it clear how the drill is going to take place. The teacher checks for understanding:

Teacher: *Who is asking the questions you, or the teacher?*
Students: *The teacher*.
Teacher: *Is the answer from you or from the picture?*
Students: *The picture.*
Two alternative questions could be used to check if the students understand the instructions. The answers are in the questions making it easy for the teacher to see whether students understood the question or not.
Production

At this stage the teacher wants students to work in pairs and incorporate their views, ideas and the language that they know.

Step 7: Teacher's instruction: Now, you are going to work in pairs and ask each other about what you are going to be when you grow up. The teacher demonstrates by using a dialogue, not pictures.

Teacher checks for understanding:
Teacher: *Are you going to ask the teacher?*
Students: *No*
Teacher: *Are you going to work in pairs?*
Students: *Yes*
Teacher: *Are you going to use the pictures?*
Students: *No*
These questions are a good way to see if students understand how the activity is to be done. The questions indicate whether the teacher will be involved or not, if students will work individually or in pairs and if the answers are based on the pictures or not.

Step 8: After students finish pair work, it is the feedback stage where the teacher asks some students to go to the front of the class and present what they practiced.

The mini scenario above illustrates how teachers can use CQs in PPP to check students' understanding. Using CQs can be a useful, simple and effective way to check if the teaching is effective or not.
CQs may be an effective means to check if students understand a language concept taught or an instruction given. But, there are other innovative ways to check for understanding which can be easily adopted or adapted by language teachers. These are presented below.

Goes with/go with formula

This is a way of checking for understanding where students are invited to become active. After teaching a new language concept students are required to say the items which have an association with, even if they do not have enough language to do so. If they share a common L1 among themselves and the teacher they can use it.
Teacher: (showing a picture of a bank) says "this is a bank".
Teacher: Class, Bank goes with...
SS1: Goes with people
Teacher: Quite right
SS2: Goes with money
Teacher: Very well
SS3: Goes with cheque
Teacher: Very well
This "formula" can be done a bit differently when the teacher is the one who says *the goes with* and students are those who will say *if the goes with* is correct. Using the example above it can be as follows:
Teacher: (showing a picture of a bank) says "this is a bank".
Teacher: Does it go with food?
SS: No
Teacher: Does it go with money transfer?
SS: Yes
Teacher: Does it go with ATM?
SS: Yes
Teacher: Does it go with business?
SS: Yes

Positive/negative formula

This is another way to check for understanding. It helps not only in checking for understanding but also reinforcing the negative structures in students' minds. As the name suggests here the teacher gives students two alternatives for them to select, one positive and one negative, for example it is or it is not, do or don't, can or can't etc. and students have to select which one is correct. Below is an illustration how it can be implemented in the classroom.

Teacher: (Teaching the word shoplift) Imagine you go to a fruit and vegetable market and you pick up an apple. You hide it inside your jacket because you want nobody to see it, you don't want to pay for. Class, you are shoplifting, that is called shoplifting.
Teacher: Is it legal or not legal?
SS: It is not legal.
Teacher: Can you be caught or not caught?
SS: Can be caught.
Teacher: You should do that or you shouldn't do that? SS: You shouldn't do that.
Yes, quite there, sorry formula

In here students are the ones who ask the CQs about that. L1 may be used for lower level students. Even if students do not ask questions or ask them correctly, the teacher is not to correct them, but focuses on the gist of the questions or   statements.   Teacher   should   only   say   ***Yes,   quite   there,   or   sorry***.

Teacher: (teaching the expression "out of the loop") Look class, the president said that at the beginning of the COVID 19 pandemic it was out of the loop the number of people who were infected in the country.
Teacher: Class, questions or statements on the meaning of out of the loop.
SS1: Can't see.
Teacher: Quite there.
SS2: It means very short?
Teacher: Sorry.
SS3: Didn't know.
Teacher: Yes.

One in three formula

It is a procedure where the teacher states three words and students have to choose the one which is related to the language item being checked.

Teacher: (Showing a picture of potatoes) Class, these are potatoes.
Teacher: Cakes, chips, or salad.
SS: Chips

All of these ways of checking for understanding do not magically work in a classroom. They need planning and practice. The more the teacher and students are acquainted with them the easier it will be to implement them, enlarging in this way the repertoire of procedures to check for understanding.

7. Conclusion

Learning a foreign language is one of the greatest challenges individuals can pose to themselves. Language learning is done mostly in classrooms. It may involve not only the individuals who want to learn but also teachers and other students. Teachers play key roles as facilitators of the learning process by providing input for the students to produce the expected language. Stops and checks throughout the process are important for teachers to do so they can make the necessary changes to the learning so that students can be successful. Concept Questions are an effective means for measuring the efficacy of teaching. The points described in this article can be summarized as follows:
- The term, concept questions, refers to notions of questions that check for understanding, questions that elicit conversations about unrealistic questions that check for understanding and short questions.

- Concept questions may help teachers check for students' understanding and carry out remedial work.
- When planning concept questions, teachers should: (a) jot down different concepts related to the item being checked; (b) use simple language; (c) not use the same language taught in the concept questions; (d) ask questions that require short, simple answers; (e) ask questions to check for understanding of the language being taught, not of the situation; (f) be receptive to students' unanticipated answers; and (g) be involved in questioning.
- There are other innovative ways teachers can adapt or adopt to check for understanding such as *Goes with/go* with formula, *positive/negative* formula; *yes, quite there, sorry* formula and *One in three formula*.

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Assessing Psychometric Properties of a Learning Styles Indicator vis-à-vis ELI Students within Saudian Context

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Abstract
The present study focuses on studying the psychometric properties of the Learning Style Indicator (LSI). It is a cross-sectional study with a sample of 204 male/female students studying in four modules in English Language Institute (ELI) in King Abdulaziz University, Jeddah. Confirmatory Factor Analysis (CFA) was carried to study the psychometric properties of the LSI. Kuder Richardson's Cronbach's coefficient 'α' was used to assess the reliability of the three factors of the LSI. Findings of the study revealed that three factors of the LSI had a good model fit. Hence, it is suggested that LSI is quite valid and reliable for use within the English language teaching in Saudi Arabia. This study also compares the findings of the current study with previous findings. Results of the present study will provide much-needed stimulus for future research in LSI particularly, within the English Language teaching throughout Saudi Arabia and generally in other Arab speaking countries of the region. The results of the present study will herald future research in appreciating the learning styles of Saudi EFL students.

Keywords: Psychometric Properties, Confirmatory Factor Analysis, Discriminant Validity, Convergent Validity

1. Introduction/Literature Review

In saudian educational system almost all students in their first year of university have to study English as a second language in ELI, as medium of instruction, both at the undergraduate and postgraduate level, is English. Currently more than 3/4th of the pedagogical staff in ELI are foreigners coming from diversified cultures which warrants the knowhow of learning style preferences of saudian students. If the teacher is well versed with the preferred learning styles of the students, then he/she can effectively engage his/ her students in achieving the intended learning objectives. Learning styles may be defined as the inherent preferences of individuals for how they engage in the learning process (Ehrman and Oxford, 1990; Oxford, 2000). Learning styles vary with varying personalities and also on the exposure to different teaching/learning circumstances. Learning styles of students have been assessed through instruments containing items measuring different measurable characteristics. Most commonly used

instrument to assess learning style in non-native environment is Reid's (1984) PLSPQ, which is based on the concept of six learning style preferences. Eliason (1995) argues that Inclan (1986) and Melton (1990) found no significant differences in how students responded to a questionnaire based on the language of the questionnaire, whether Spanish and English or Chinese and English, respectively.

Current study will use learning styles instrument developed by Wintergerst & DeCapua (1999) which is a revised version of Reid's (1984) PLSPQ instrument. Wintergerst & DeCapua (2001) worked on exploring the learning styles of Russian-speaking students of English as a second language. Wintergerst & DeCapua. (2005) assessed the reliability and validity of the LSI across ESL students, freshman English composition students in three pre-conceptualized situations: project orientation (PO), group activity orientation (GAO), and individual activity orientation (IAO) with 24 items and during the assessing process one item was deleted and finally the updated LSI contained 23 items. The aforementioned three dimensions used in the LSI are (1) PO which refers to a student's preference of learning best when involved in ''hands-on'' activities or when working with materials in a learning situation. The student may be working individually or with others, showing that project work is not mutually exclusive to individual work or group work, (2) GAO refers to a student's preference of learning best when interacting or working with one or more students in a learning situation, and (3) IAO refers to a student's preference of learning best when working alone in a learning situation.

During literature research one comes across a lot of researches conducted using the aforementioned instrument but only in western setting or in far eastern setting but no research on the said subject is carried on in Middle Eastern educational setting thus, arises the *raison d'etre* for carrying out the present study. Scale for the present study has been adapted from DeCapua & Wintergerst (2005).

1.1. Format of the paper: The rest of the paper proceeds as follows Section 2 presents the methods and material to be used for addressing the proposed psychometric validation; section 3 elaborates the results, and section 4 gives elaborate discussion with brief conclusion of the study coupled with future implications. Some limitations of the study are enumerated in section 5.

2. Methods/Material:

2.1. Sampling Design/method

Quantitative retrospective design using cross-sectional data when we have one time contact with the respondent

2.2. Instrument

Data was collected through Learning Style Indicator (LSI) consisting of 23 items which is a four-point response scale ranging from 1 to 4 with 1 = Never and 4= Always. LSI consists of three dimensions with Project Orientation (PO) consisting of items (2,3,4,7,10,13,15,16,19,20,23), Group Activity Orientation (GAO) consisting of items (1,6,11,18,21) and Individual Activity Orientation (IAO) items (5,8,9,12,14,17,22). The questionnaire was translated to Arabic language for ease of comprehension through the method of transliteration for eliciting the right perspective of the respondents. Questionnaire used to elicit information from the respondents is appended in Appendix 'A'.

2.3. Sample

A total of 250 questionnaires were distributed among the male/female students of ELI during normal class lectures. Of the total 250 questionnaires collected 46 questionnaires were discarded due to incomplete information hence, the response rate was 81.6%.

2.4. Statistical tools/software

Apart from studying the socio-demographic profile of respondents and inter-item consistency of the sub-dimensions, a Confirmatory Factor Analysis (CFA) is carried out to assess the fit of the data. Cronbach's coefficient 'α' is used to assess the reliability of the scales. Statistical package for social sciences (SPSS) version 23.0 and AMOS version 23.0 is used for extracting desired results.

3. Results:

3.1. Sampling Characteristics

Socio-demographic profile of 204 respondents is exhibited in Table 1. Gender is approximately equi-represented (males = 54.6% and females =45.1%) in the current study, more than 3/4th of the respondents were from age group [18-20 years (77%)] which is generally the age group in the preparatory year program (PYP). Regarding the educational stream, science versus arts, majority of the students (55.4%) are from the science stream. Of the four modules, level 2 (102) has more representation (34.3%) as compare to other modules.

Table 1: Socio-Demographic Profile of the Respondents

		n	%
Gender	Female	112	54.9
	Male	92	45.1
Age	<18	10	4.9
	18-20	157	77.0
	21-23	37	18.1
Level	101	59	28.9
	102	70	34.3
	103	41	20.1
	104	34	16.7
Subjects	Science	91	44.6
	Arts	113	55.4

3.2. Confirmatory Factor Analysis

Both Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) are dimension reduction tools for assessing whether a set of scales assesses the concept it is developed for. But CFA has an added advantage to quantify the goodness of fit of the resulting structure. In the current study a CFA was performed to test the model (LSI) consisted of three dimensions PO, GAO, IAO as proposed by Wintergerst et al. (2001). Since LSI has been discussed in previous studies, as can be seen in the literature review; hence, CFA was chosen as an appropriate measure to assess the scale and study the goodness of fit. Most appropriate index to assess the goodness of fit is Chi-square but it is very sensitive to sample size, i.e., as the sample size increases, the Chi-square gives a good fit (Hinkin et al. 1997). Due to the restrictiveness of the Chi-Square, researchers have sought alternative indices to assess model fit Hooper et al. (2008). The main criteria used in the current study to judge model fit included goodness of fit (GFI) created by Jöreskog and Sörbom (1996), Bentler's (1990) comparative fit index (CFI) and the Root Mean Square Error of Approximation (RMSEA) developed by Steiger (1990). Regarding GFI, an omnibus cut-off point of 0.90 has been recommended as CFI Hu, and Bentler (1999) suggested a cut-off point of 0.90 as indicative of a good fit. For RMSEA, a cut-off value close to 0.06 Hu and Bentler (1999) or a strict upper limit of 0.07 suggested by Steiger (2007) appears to be more appealing. RMSEA is a function of the discrepancy between an estimated matrix and a population matrix, while at the same time accounting for the complexity of the model. One of the most significant advantages of RMSEA is its suitability for a confidence interval (C.I) to be calculated around its value MacCallum et al., (1996). It is generally reported in conjunction with RMSEA, and for a good-fitting model, the lower limit is close to 'zero' while the upper limit should be less than 0.08. For more on the model fit guidelines, see Hooper et al. (2008).

Results of confirmatory factor analysis for the LSI are shown in Figure 1, and model fit statistics are presented in Table 2. Keeping in view the Chi-square value of 1.573 for LSI with three dimensions, it is evident that the model does not fit the data well, so the other option is to look at the modification indices to improve the model. According to (Hair et al.,2010), an acceptable factor loading value 0.35 and above is considered suitable. Indices shown in Table 1 clearly indicates that three factor model fits the data well and can be used in the English language teaching in Saudi Arabia.
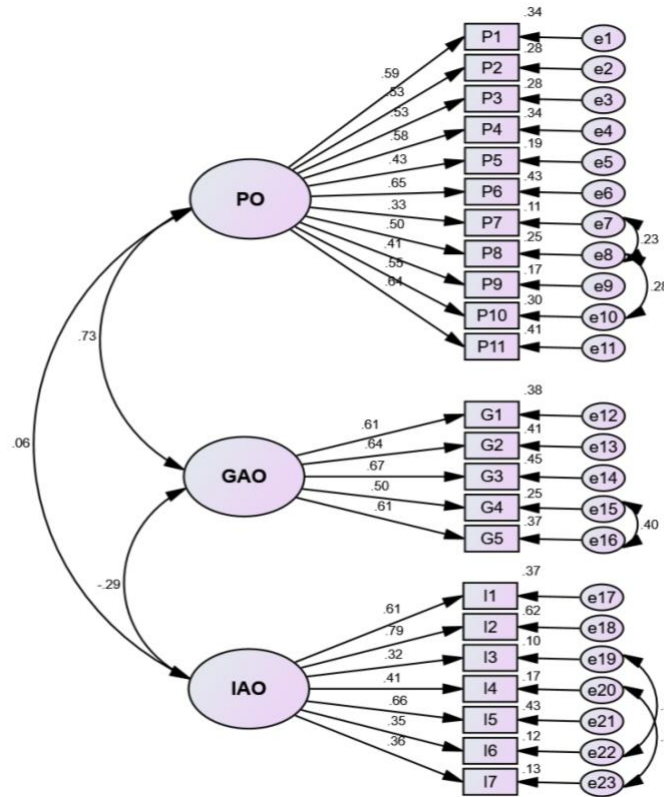
Figure 1: Confirmatory Factor Analysis for Learning Style Indicator

Table 2: Fit Statistics for Measurement Models of Learning Style Indicator

Model (CFA)	χ²/df	GFI	CFI	RMSEA	AIC	BCC	BIC	CAIC
3 subscales	1.573	0.88	0.90	0.053	457.20	471.68	636.38	690.38

3.3. Reliability

Nunnally (1978) suggested that a large coefficient α (α > 0.70) is an indication of substantial item homogeneity and suggests that the sampling sphere has been adequately captured. Cronbach's 'α' (1951) for the three dimensions ranged from (0.731 -0.813) thus indicating a good structure for the instrument and are shown in table 3.

Table 3: Scale Statistics and Inter-Item Consistency for Learning Style Indicator

Sub Dimensions	Items	Mean ± S.D	Cronbach's α
Project Orientation	11	33.05 ± 6.21	0.813
Group Activity Orientation	5	14.39 ± 3.56	0.763
Individual Activity Orientation	7	20.23 ± 4.45	0.731

4. Conclusion/Discussion

The current study provides evidence concerning the psychometric properties of the LSI using data of 204 male/female students studying in four modules in English Language Institute (ELI) in King Abdulaziz University, Jeddah, Saudi Arabia. The instrument exhibited a three-dimensions structure, consisting of 23 items. LSI has exhibited satisfactory reliability and validity and is fit for use in studying the learning styles vis-à-vis Saudi educational context. Regarding the three dimensions the highest impact on Project Orientation (PO) of the students is through *doing things in class* followed by *making something for a class project*, the highest impact on Group Activity Orientation (GAO) of the students is through *working with others in class* followed by *more work done when working with others*, whereas, Individual Activity Orientation (IAO) of the students is through *working alone* followed by *preferring to work by myself*. Results of the present study are consistent with the results of Wintergerst & DeCapua. (2005) exhibiting three factor solutions for the instrument using CFA. Keeping in view the findings of the present study it is suggested that LSI is a valid and reliable instrument and can be used effectively to conduct research on the learning styles of ELI students within the Saudian Educational Context. Future research is endorsed to be steered using larger samples representing various programs/levels in ELI to address measurement and validation issues using LSI with 23 items.

5. Limitations

a. Data has been collected from only one institution which may to some extent mars the generalizability of the current study.
b. Control variables like gender and level of modules are not included in the CFA which may be incorporated as control variables in future research to crystallize the under study variables.
c. This research used LSI and is a self-reported survey; however, for a broader understanding of learning styles within the Saudi educational context, qualitative research, such as structured interviews and case studies, are also recommended. A mixed research approach shall also be conducted since, the present study only focuses on the quantitative aspect of the issue.

Author Contributions
Conceived idea, prepared instruments for collection of data and discussion of results by Dr. Nisrin, writing of literature review and methods by Fariha, selection of appropriate statistical tools/analysis of the data and results reporting by Khushnoor.

Conflicts of Interest
The authors declare no conflict of interest regarding this article.

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Appendix

<u>Learning Styles Indicator (LSI) (English Version)</u>

S.No	Statements	Always	Very often	Sometimes	Never
1	I enjoy working on an assignment with 2 or 3 classmates. (GAO)				
2	I learn best in class when I can participate in related activities.(PO)				
3	I understand things better in class when I participate in role playing.(PO)				
4	I learn more when I can make a model of something.(PO)				
5	When I study alone I remember things better.(IAO)				
6	I get more work done when I work with others. (GAO)				
7	I enjoy learning in class by doing experiments.(PO)				
8	When I work alone I learn better.(IAO)				
9	I understand better when I read instructions.(IAO)				
10	When I build something, I remember what I have learned better.(PO)				
11	In class, I learn best when I work with others.(GAO)				
12	I learn more by reading textbooks than by listening to lectures.(IAO)				
13	When I do things in class, I learn better.(PO)				
14	I prefer to wok by myself.(IAO)				
15	When someone tells me how to do something in class, I learn better.(PO)				
16	I enjoy making something for a class project.(PO)				
17	When I read instructions, I remember them better.(IAO)				
18	I prefer to study with others.(GAO)				
19	When the teacher tells me the instructions, I understand better.(PO)				
20	I learn more when I can make something for a class project.(PO)				
21	I learn more when I study with a group.(GAO)				
22	I learn better by reading than by listening to someone.(IAO)				
23	I prefer to learn by doing something in class.(PO)				
Statements drawn from Reid (1984)					

<u>Learning Styles Indicator (LSI) (Arabic Version)</u>

اختر الإجابة المناسبة في كل فقرة مما يلي بناء على كيفية تعلمك أو بناء على كيف تعلمت اللغة الانجليزية

لا أبدا	أحيانا	غالبا	دائما	الفقرة	
				استمتع بالعمل على مهمة/تمرين مع 2 أو 3 زملاء دراسة.	1
				اتعلم أفضل في الفصل عندما استطيع المشاركة في تمارين ذات علاقة	2
				أفهم الأمور بشكل أفضل في الفصل عندما أشارك في تمارين تتطلب القيام بدور ما(لعب الأدوار.)	3
				اتعلم المزيد عندما اتمكن من عمل نموذج لشيء ما.	4
				عندما ادرس بمفردي، اتذكر الأشياء بشكل أفضل	5
				اقوم بالكثير من العمل عندما اعمل مع الآخرين	6
				استمتع بالتعلم في الفصل من خلال القيام بالتجارب	7
				اتعلم أفضل عندما أعمل بمفردي	8
				افهم بشكل أفضل عندما أقرأ التعليمات	9
				في الفصل أتعلم بشكل أفضل عندما أعمل مع الآخرين	10
				عندما اقوم ببناء شيء ما، اتذكر ما تعلمته بشكل أفضل	11
				اتعلم عن طريق قراءة الكتب الدراسية أكثر مما اتعلمه من خلال الاستماع إلى المحاضرات	12
				عندما افعل أشياء داخل الفصل، اتعلم بشكل أفضل	13
				أفضل أن أعمل بنفسي	14
				عندما يخبرني شخص بكيفية القيام بعمل ما في الفصل اتعلم بشكل أفضل	15
				استمتع بعمل شيء لمشروع يخص الفصل	16
				عندما اقرأ التعليمات، اتذكرها بشكل أفضل	17
				أفضّل الدراسة مع الآخرين.	18
				عندما تخبرني/يخبرني المعلمة/المعلم بالتعليمات، افهمهابشكل أفضل	19
				اتعلم اكثر عندما اتمكن من تقديم شيء لمشروع الفصل.	20
				اتعلم اكثر عندما أدرس مع مجموعة	21
				اتعلّم بالقراءة أفضل مما اتعلمه بالاستماع إلى شخص ما	22
				أفضّل التعلّم من خلال عمل شيء ما في الفصل	23

A Study of Mathematics Teachers' Self-Efficacy Beliefs, Mathematics Teaching Anxiety and Motivation towards Teaching Mathematics

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Abstract

This study aimed to assess the relationship between the teaching self-efficacy beliefs, teaching anxiety and motivation towards teaching mathematics among Math teachers in schools. A total of 51 schools-teachers participated in the study, with 31 male teachers and 20 female teachers. The study variables were measured by instruments adopted from literature for data collection using the survey method. Based on the obtained results, there is a significant relationship between mathematics teaching anxiety and motivation towards teaching mathematics, but not between self-efficacy beliefs and mathematics teaching anxiety. This study concluded with recommendations for future research.

Keywords: Mathematics, Motivation, Anxiety, Self-Efficacy Beliefs, Teachers

1. Introduction

An outbreak of a severe acute respiratory syndrome caused by the Coronavirus-2 (Covid-19) occurred in China in December 2019. Covid-19 has now proliferated to all countries of the globe (Jukic et al., 2020; Zu et al., 2020), and inevitably led to a large-scale pandemic (World Health Organization, 2020), developing into an acute infection that has extensive effects on life various aspects, including education, economy, sports, and businesses (Jucik et al., 2020; Parnell et al., 2020; Ratten, 2020). Consequently, several countries began adopting a strategy to control the virus spread affecting the people's lives, and this holds true for the field of education. In relation to this, teaching practices and the characteristics of teachers have a major role in successful learning of students. This may be exemplified by the beliefs of teachers concerning teaching mathematics that affects successful learning of mathematics among students (Takunyaci, 2021). Similarly, self-efficacy beliefs were also evidenced to have a key role in the inculcation of mathematics education (Rabab'h & Veloo, 2014; Unlu, Ertekin & Dilmac, 2017) which is referred to as an individual's judgment of their capability of organizing the activities needed to perform a certain activity and to achieve such performance (Bandura, 1986; p.391). The above premise is advocated by the Social

Cognitive Theory that defines self-efficacy as the belief of individuals of their own capacities to conduct and organize activities required for work fulfillment (Bandura, 1997).

Another belief factor which was evidenced in the cognitive psychology approach is anxiety and mathematics anxiety refers to the feeling of tension and anxiety interfering with the number's manipulation and the solution of mathematics problems in various situations in life and academia (Richardson & Sunin, 1972; Peker, 2015). This belief factor was also evidenced to have extensive outcomes considering that there is extensive under-achievement in mathematics and subjects related to mathematics which may be related to anxiety and avoidance of the subject (Rabab'h, B.S. H, 2015; Wilder, Lee & Mackrell, 2021; OECD, 2013). In related studies, one of the top factors that influence mathematics anxiety formation is the teacher's effect on students (Unlu et al., 2017; Peker & Ertekin, 2011).

Another effective factor on learning and behavior is motivation as mentioned in Sahat et al. (2018) and it is determined through attraction, retention, and concentration (Sinclair, 2008). Motivation is an effective determinant of the attraction of individuals to teaching, the period of remaining in the initial education courses and the teaching profession, as well as the level to which the courses and the teaching profession are engaged in (Sinclair, 2008, p.80). Even though motivation has been evidenced in literature to influence learning and behavior, it is ambiguous as to the way it should be employed in the process of teaching and learning (Suren & Kandemir, 2020).

Studies in literature have highlighted the importance of teachers' efficacy beliefs, mathematics anxiety and motivation towards mathematics teaching that influences their objectives and practices in classrooms (e.g., Takunyaci, 2021; Velthuis, Fisser & Pieters, 2014). This is because there is lack of studies dedicated to the relationship between teachers' efficacy beliefs, their mathematics anxiety and their motivation towards mathematics teaching (Suren & Kandemir, 2020; Peker, 2015; Richardson & Watt, 2016), which is why this study is an attempt to mitigate the literature gap. Focusing on the above variables is the fundamental idea that is required for conducting this study to determine the variables' relationships during the current Covid-19 pandemic. In so doing, this study contributes to literature concerning mathematics teaching.

2. Purpose of the Study

The main objective of the study is to investigate the relationship between the self-efficacy beliefs, mathematics anxiety and motivation towards teaching mathematics among schools-teachers and accordingly, this study aims to determine the answers to the following questions:
1. Is there a relationship between self-efficacy beliefs and mathematics anxiety among schools-teachers?
2. Is there a relationship between self-efficacy beliefs and motivation towards teaching mathematics among schools-teachers?
3. Is there a relationship between mathematics anxiety and teachers' motivation towards teaching mathematics?

3. Literature Review

Studies dedicated to exploring mathematics teaching efficacy beliefs among schools-teachers showed that regardless of the provided professional development training programs and guidelines to prepare teachers, the feeling of inadequacy still prevails when teaching mathematics (Marrongelle, Sztajn & Smith, 2013; Swars, Hart, Smith, Smith & Tolar, 2007). Additionally, negative perceptions and beliefs abound among primary school teachers, particularly those in the first level of education and this has an indirect effect on their teaching quality and the academic achievement of students (Borko & Whitcomb, 2008). Studies of this caliber documented those beliefs have a significant effect on the achievement of students' accomplishments, as such beliefs relate to the teachers' planning, implementation, and decision-making processes (Fives & Buehl, 2016; Kitsantas, Ware & Cheema, 2010; Klassen & Tze, 2014; Schoenfeld, 2015; Skott, 2015; Thomson & Gregory, 2013). Moreover, studies concerning the mathematics teaching efficacy beliefs indicated that highly proficient teachers have higher likelihood to apply new teaching innovations and establish higher self-goals and student goals (Charalambous,

Philippouve Kyriakides, 2008; Swars et al., 2007; Utley, Moseley & Bryant, 2005; Schunk, Pintrich & Meece, 2008).

Moreover, a correlation was noted between mathematics anxiety and anxiety involved in teaching mathematics (Brown, Westenskow & Moyer-Packenham, 2011; Haciomeroglu, 2014; Peker & Ertekin, 2011). Added to the above, teachers with high mathematics anxiety were noted to lack enjoyment in teaching mathematics and often fail in the endeavor (Brown et al., 2011), in which case, teachers in primary education should possess high self-efficacy beliefs in teaching mathematics and using methods (Doruk & Kaplan, 2012).

Studies in the same line, like Han and Yin (2016) indicated a significant relationship between teachers' motivation and students' motivation. Also, commitment levels to teaching careers should be high and not only linked to the academic ability among teachers (Brookhart & Freeman, 1992). Teachers should concentrate on their motivation as a crucial non-cognitive element for enhanced effectiveness of teaching in classrooms, in that highly motivated teachers have higher likelihood to present quality instruction compared to those with low motivation (Almulla, 2020).

4. Methodology

4.1. Study Design

A descriptive study design through quantitative survey was opted for in this study following other social sciences and education studies (Fared, Jdaitawi & Sheta, 2018; Jdaitawi, 2020; Rababh & Veelo, 2014). The study sample comprised of 51 schools' teachers, randomly chosen through their voluntary participation. The participants consisted of 31 male teachers (60.8%) and 20 female teachers (39.2%), with 18 teachers having 5 years of experience (35.3%), 17 with 5-10 years of experience (16%) and the remaining had 10 years of experience (31.4%).

4.2. Data Collection

The study adopted several measures for collecting data to achieve the purpose and objectives of the study. Items measuring self-efficacy beliefs were adopted from Barros, Laburu and Silva (2010) – an instrument consisting of 11 items measured on a 5-point Likert scale ranging from strongly disagree represented by 1 to fully agree represented by 5. Items receiving high scores show the positive perception of self-efficacy from the participants. Cronbach's alpha value for the construct was found to be 0.83. With regards to the mathematics teaching anxiety construct, the measurement items were adopted from Alkan, Cosguner and Fidan (2019) and it was directed towards determining the mathematics teaching anxiety among teachers. The adopted instrument consisted of 13 items measured on a 5-point Likert scale that ranged from strongly disagree represented by 1 to completely agree represented by 5. The construct obtained Cronbach's alpha value of 0.80. Lastly, Fuqoha, Budiyono and Indriati's (2018) instrument was adopted to measure mathematics teaching construct, comprising of 12 items gauged on a 5-point Likert scale that ranged from 1 (strongly disagree) to 5 (strongly agree). The measure's high score showed the positive and high motivation level of participants towards teaching mathematics and the construct obtained an alpha value of 0.81.

4.3. Data Analysis

The study employed SPSS to analyze the gathered data and upon the examination of results, the values of mean and standard deviation were obtained and tabulated in Table 1. Based on the values in the table, the mean of mathematics self-efficacy beliefs is 3.54, with standard deviation of 0.646, evidencing that the teachers had moderate self-efficacy beliefs level in teaching. As for teaching anxiety, low to moderate mean level was obtained at 3.23, with standard deviation of 0.598, while motivation towards teaching mathematics obtained a mean of 3.63 and standard deviation of 0.659, indicating moderate motivation level among the teachers (refer to Table 2).

Table 1: Descriptive Statistics of the Study Variables

Variable	Mean	SD
Self-Efficacy Beliefs	3.54	.646
Mathematics Teaching Anxiety	3.23	.598
Motivation towards Mathematics	3.63	.659

The significant relationships among the study variables were determined using Pearson Correlation analysis. Table 2 tabulates the results and based on them, mathematics teaching anxiety significantly correlated with motivation towards teaching mathematics (r=.530**, .000, p<.01), but self-efficacy beliefs-mathematics teaching anxiety and self-efficacy beliefs-motivation towards teaching mathematics were both insignificant (r=.066, .644, p>.01, r=.242, .087, p>.01 respectively).

Table 3: Pearson Correlation between the Study Variables

Variable	Motivation	Mathematics-Anxiety
Self-Efficacy Beliefs	.242	.066
	.087	.644
Mathematics-Anxiety	.530	-
	.000**	

5. Discussion

The main aim of the study is to determine the relationships between the study variables and their strength and direction. Based on the obtained results, mathematics teaching anxiety significantly correlated with motivation towards mathematics. Results in literature concerning this relationship have been mixed (e.g., Suren & Kandemir, 2020; Lyons & Beilock, 2012). In Suren and Kandemir's (2020) study, the authors reported a positive anxiety-motivation towards mathematics teaching relationship, indicating that individuals who are anxious may perceive themselves to perform poorly and this may prevent them from resolving the problem as their memory may be disturbed. Other studies like Arnsten (2009) and Diamond et al. (2007) indicated that average level of anxiety boosts focus and enhances memory, low levels are related with insufficient cognitive resources appropriated to the work at hand, and this holds true for high levels.

With regards to the self-efficacy beliefs-anxiety in teaching mathematics relationship, the result indicated an insignificant correlation – a result which contradicts prior studies that supported a significant relationship between the two (e.g., Peker, 2015). In Jain and Dowson's (2009) study, a significant effect was reported from self-efficacy beliefs and mathematics anxiety, while Hoffman (2010) showed a negative moderate relationship between the same constructs. Studies that examined anxiety in teaching mathematics and self-efficacy beliefs have been few and far between (Ural, 2015; Peker, 2015). Specifically, Ural (2015) indicated a negative moderate relationship between mathematics teaching anxiety and self-efficacy perception of mathematics. Lastly, self-efficacy beliefs were found to have an insignificant relationship with teacher's motivation towards teaching mathematics in this study. More studies are needed to confirm this relationship as only few focused on it in literature.

6. Conclusion

According to the results, the participants possessed low to moderate levels of the study variables and supported a significant relationship between mathematics teaching anxiety and motivation towards mathematics. However, self-efficacy beliefs had insignificant correlations with motivation towards teaching mathematics and teaching mathematics anxiety. This study contributes to both theory and practice, in that literature concerning the identification of the relationship between efficacy beliefs, motivation and teaching mathematics anxiety among

schools' teachers has been lacking. The results also contribute to practice via decision-making on how to design and develop training initiatives to enhance the abilities of teachers and teaching practices using technology strategies and tools, at the time of the pandemic.

7. Limitations and Suggestions

One of the major limitations of this study is the sample size and one-gender examination, and thus, a greater number of sample and both genders need to be included in future studies. The study adopted a quantitative approach in collecting data, which may have introduced inflated biases and as such, future studies may adopt a qualitative approach or a mixed approach. Also, there are other individual and work factors that have the potential to affect the teacher's anxiety, motivation and self-efficacy like background, school setting and other factors in their working environment.

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A Teaching Note on Misrepresentation and Fraud

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Abstract

In this Teaching Note, the authors conclude their series in the study of the common law causes of action that were available to a plaintiff in cases of misrepresentation and fraud. In Part I of this article, *Civil Fraud*, the authors describe the prima facie elements of proof, as well as the exceptions that were recognized relating to opinions, commendations, the "duty to speak," and statements relating to a matter of law, citing several of the major cases important in understanding each issue. In Part II of the article, *Securities Fraud*, the authors provide a discussion of securities fraud, with examples taken from prominent "real-world" cases which students may readily recognize from their studies in finance, accounting, business ethics, or other business-related courses.

Keywords: Fraud, Misrepresentation, Scienter, Reliance, Concealment, Commendations, Opinions, "Duty To Speak", Reliance, Securities Fraud, Insider Trading

Part I – Civil Fraud

1. Introduction

Chen (2022b) writes:

> "Fraud is an intentionally deceptive action designed to provide the perpetrator with an unlawful gain or to deny a right to a victim. Types of fraud include tax fraud, credit card fraud, wire fraud, securities fraud, and bankruptcy fraud. Fraudulent activity can be carried out by one individual, multiple individuals or a business firm as a whole."

There are two types of civil fraud: *fraud in the inducement* and *fraud in fact*.
Fraud in the inducement is a term used in cases of contract fraud and occurs when one of the contracting parties has used "deceit or trickery" to induce the other party to enter into an agreement for their advantage (see *Town*

North Nat'l Bank v. Broaddus, 1978). Fraud in the inducement makes a contract voidable, potentially releasing the innocent party from any contractual obligation. "Fraudulent inducement," also termed "fraudulent procurement," occurs "when a misrepresentation leads another party to enter into a transaction with a false impression of the risks, duties, or obligations involved" (Emerson, 2020, citing Black's Law Dictionary (10th ed.), 2014) in an attempt to get that party to act against their best interest. Once proof of fraudulent inducement has been made, the defrauded party may rescind the transaction, as well as seek monetary damages from the party who committed fraud (see, e.g., Winter & Clark, 2018).

Fraud in the inducement occurs *before* the contract is entered into and is part of the bargaining process creating an agreement. Fraud in the inducement often consists of misrepresenting essential facts with the intentional purpose of defrauding the other party.

In contrast, *fraud in factum* (fraud in fact) (*Guthrie v. Sulter*, 1996; *Sightler v. Remington College,* 2015) involves deceit by the offending party that can include such acts as:
- Forging the other party's signature;
- Altering a contract that has been entered into by the parties.

Fraud in the factum may be raised as a legal defense when one party enters into an agreement not realizing that it is a contract. The plaintiff may not understand the intent, content, or purpose of the contract due to false or incomplete information given to the plaintiff. Hunt, Hodge, and Thompson (2020, p. 75) write: "Fraud in the factum occurs when a person is misled as to the nature or content of the instrument being executed."

In addition to civil fraud, fraud may also amount to a crime under certain circumstances (Theoharis & Pirius, 2023), and may include mail fraud (Rotert, 2023), wire fraud (Frohock & Jiminez, 2020), computer and Internet fraud (also called "cybercrime") (Larson et al., 2021), counterfeiting (International Trademark Association, 2020), forgery (Legal Match, 2023), securities fraud (Rosenblum, 1991; Langevoort & Gulati, 2004); Dooner et al., 2021), loan fraud (Martin, 2023), and credit card fraud (Theoharius & Pirius, 2023).

Part I of this Teaching Note relates to issues of *civil fraud* that arise in contracting situations. Part II will provide a brief overview of securities fraud, which may contain both civil and criminal implications.

2. Fraud vs. Misrepresentation

The distinction between misrepresentation and fraud lies in the presence or absence of *scienter*, or the intent to deceive. Thus, misrepresentation without *scienter* is sometimes termed as an "innocent misrepresentation" to distinguish it from actionable fraud. US Legal (2023) notes: "Scienter is defined as a mental state embracing intent to deceive, manipulate, or defraud. Scienter means to have guilty knowledge. An act is done 'knowingly' if done voluntarily and intentionally, and not because of mistake or accident or other innocent reason."

A second major distinction lies in the fact that if a plaintiff can prove actionable fraud (as opposed to a misrepresentation), the plaintiff can recover punitive damages to punish the defendant for its intentional conduct.

The causes of action of misrepresentation and fraud are a hybrid of both contract and tort law, but which have evolved over the years as a contract action for a party who was dissatisfied with the bargain he or she had entered into. To establish a common law action in fraud, a plaintiff must prove four elements: *a false representation of a material fact; scienter; justifiable reliance; and damages* (generally, *United States v. Clevenger*, 1984).

3. Elements of Proof of Fraud

3.1. False Representation of a Material Fact

The first element of the cause of action for fraud is the requirement that the defendant make a false representation of a material fact through words, certain actions known as concealment, or through silence, where there is a duty to speak.

To be actionable, a representation of fact must be *material*. A material fact is defined as one that is important in inducing a party to enter into a contract. The test of materiality is whether the statement "would be important to a reasonable person"—an objective standard. This requirement of materiality is designed to prevent a party from using a trivial misrepresentation as an excuse to set aside a bargain that appears to be unwise or "bad" *in retrospect*!

According to the Restatement of Torts, Section 470(2), materiality exists whenever "the misrepresentation would be likely to affect the conduct of a reasonable man." In a products liability case, for example, a statement is material if it significantly affects the manner in which the plaintiff used the product, thereby increasing its danger (see Reimann, 2021), and often relates to what are known as "marketing defects." A marketing defect, involving inadequate warnings concerning risks or dangers, or inadequate instructions or labels relating to how to properly or safely use a product (Ausness, 2002) involving food, drugs, venetian blinds, or more recently, children's toys, cribs (Hunter & Montuori, 2012), or car seats. A statement concerning *safety*, for example, would be such a material assertion.

3.1.1. Concealment

Active concealment occurs where a party, through conduct, conceals the true nature of a situation. Clear Counsel (2022) states: "To establish a prima facie case of fraudulent concealment, a plaintiff must offer proof that satisfies five elements:

1. the defendant concealed or suppressed a material fact;
2. the defendant was under a duty to disclose the fact to the plaintiff;
3. the defendant intentionally concealed or suppressed the fact with the intent to defraud the plaintiff; that is, the defendant concealed or suppressed the fact for the purpose of inducing the plaintiff to act differently than she would have if she had known the fact;
4. the plaintiff was unaware of the fact and would have acted differently if she had known of the concealed or suppressed fact;
5. and, as a result of the concealment or suppression of the fact, the plaintiff sustained damages."

Actions such as turning back the odometer of a car, adding oil to the crankcase of a car where the oil would have otherwise run out and the engine would have seized, painting over a crack in the ceiling or wall, and gluing together pieces of a set of china all amount to active concealment. This is often referred to as the "half-truths" rule since a party to a contract will often disguise the true and complete nature of a transaction.

There are several special issues concerning whether a defendant has made a false representation or statement of material fact rising to the level of fraud (*Huffstetler v. Our Home Life Ins. Co.,* 1914).

3.2. Misrepresentation of Fact

Relief may be granted for a misrepresentation of fact, and not for an erroneous statement of opinion. However, the distinction between fact and opinion is often difficult to parse. Statements or representations of a future fact, a prediction, or a statement of an opinion are generally not actionable as misrepresentations of fact. A seller may be expected to employ a certain amount of "*sales puffing*" (*Picard Chem. Profit Sharing Plan v. Perrigo Co.*, 1996; Hollander-Blumoff & Bodie, 2021), "*trade talk,*" or "*hyperbole*" (Garry, 2020), without incurring liability for fraud. However, a statement of opinion given by an expert (a professional) to an unsophisticated purchaser or a statement made in the context of a fiduciary relationship may give rise to a cause of action for fraud. An opinion may become one of fact, depending on the circumstances of the case.

The oft-cited case of *Vokes v. Arthur Murray* (1996) illustrates how the defendant, who made various statements concerning the plaintiff's dance aptitude and potential, committed actionable fraud (see Threedy, 2010).

3.2.1. Case Study: *Vokes v. Arthur Murray* (1996)

The defendant, Arthur Murray, Inc., operated dancing schools throughout the nation through local franchised operators, one of whom was the defendant. The plaintiff, Audrey E. Vokes, a widow without family, wished to become "an accomplished dancer" to find "a new interest in life." In 1961, Mrs. Vokes was invited to attend a "dance party" at J. P. Davenport's "School of Dancing." Vokes attended the "dance party" over a period received elaborate praise from her instructor for her grace, poise, and potential as "an excellent dancer." The instructor sold her eight half-hour dance lessons for $14.50 each, to be utilized within one calendar month.

Subsequently, over a period of less than sixteen months, Vokes bought a total of fourteen dance courses, which amounted to 2,302 hours of dancing lessons for a total cash outlay of $31,090.45, all at Davenport's school.

These dance lesson contracts and the monetary consideration therefore of over $31,000 were procured from her by means and methods of Davenport and his associates which went beyond the unsavory, yet legally permissible, parameter of "sales puffing" and intruded well into the forbidden area of undue influence, the suggestion of falsehood, the suppression of truth, and the free exercise of rational judgment, if what plaintiff alleged in her complaint was true. From the time of her first contact with the dancing school in February 1961, she was influenced unwittingly by a constant and continuous barrage of flattery, false praise, excessive compliments, and panegyric encomiums, to such extent that it would be not only inequitable, but unconscionable, for a Court exercising inherent chancery power to allow such contracts to stand.

She was incessantly subjected to overreaching blandishment and cajolery. She was assured she had "grace and poise"; that she was "rapidly improving and developing in her dancing skill"; that the additional lessons would "make her a beautiful dancer, capable of dancing with the most accomplished dancers"; that she was "rapidly progressing in the development of her dancing skill and gracefulness", etc., etc. She was given "dance aptitude tests" for the ostensible purpose of "determining" the number of remaining hours of instructions would be needed by her from time to time.

…. All the foregoing sales promotions, illustrative of the entire fourteen separate contracts, were procured by defendant Davenport and Arthur Murray, Inc., by false representations to her that she was improving in her dancing ability, that she had excellent potential, that she was responding to instructions in dancing grace, and that they were developing her into a beautiful dancer, whereas in truth and in fact she did not develop in her dancing ability, she had no "dance aptitude," and in fact had difficulty in "hearing the musical beat."

The complaint alleged that such representations to her "were in fact false and known by the defendant to be false and contrary to the plaintiff's true ability, the truth of plaintiff's ability being fully known to the defendants, but withheld from the plaintiff for the sole and specific intent to deceive and defraud the plaintiff and to induce her in the purchasing of additional hours of dance lessons." It was averred that the lessons were sold to her "in total disregard to the true physical, rhythm, and mental ability of the plaintiff." In other words, while she first exulted that she was entering the "spring of her life", she finally was awakened to the fact there was "spring" neither in her life nor in her feet.

It is true that "generally a misrepresentation, to be actionable, must be one of fact rather than of opinion". But this rule has significant qualifications, applicable here. It does not apply where there is a fiduciary relationship between the parties, or where there has been some artifice or trick employed by the representor, or where the parties do not in general deal at "arm's length" as we understand the phrase, or where the representee does not have equal opportunity to become apprised of the truth or falsity of the fact represented.

" * * * A statement of a party having * * * superior knowledge may be regarded as a statement of fact although it would be considered as opinion if the parties were dealing on equal terms."

It could be reasonably supposed here that defendants had "superior knowledge" as to whether plaintiff had "dance potential" and as to whether she was noticeably improving in the art of terpsichore. And it would be a reasonable inference from the untended averments of the complaint that the flowery eulogists heaped upon her by defendants as a prelude to her contracting for 1944 additional hours of instruction in order to attain the rank of the Bronze Standard, thence to the bracket of the Silver Standard, thence to the class of the Gold Bar Standard, and finally to the crowning plateau of a Life Member of the Studio, proceeded as much or more from the urge to "ring the cash register" as from any honest or realistic appraisal of her dancing prowess or a factual representation of her progress.

" * * * (W)hat is plainly injurious to good faith ought to be considered as a fraud sufficient to impeach a contract," and that an improvident agreement may be avoided" * * * because of surprise, or mistake, want of freedom, undue influence, the suggestion of falsehood, or the suppression of truth."

The plaintiff's complaint, which had originally been dismissed, was reinstated, and the case was returned to the trial court to allow Mrs. Vokes to prove her case for fraud.

3.3. Commendations

Statements of quality or value, otherwise known as *commendations*, using such adjectival phrases as "good," "adequate," "great," "successful," "the best," "the finest quality," etc., are generally not actionable as statements of fact. However, there may be circumstances where such statements *may* be actionable, as where the parties are not acting on equal footing or where one party has superior knowledge about the facts of a situation. In such a case, a court may find that the "opinion line has crossed into the law of fact."

3.3.1. Case Study: *Sellers v. Looper* (1972)

> This is an action for damages based upon fraudulent misrepresentation pertaining to a well on property the plaintiffs purchased from defendants. The trial court found for plaintiffs. On motion, the trial court found JNOV [judgment against the verdict] and plaintiffs appealed.

> The plaintiffs contend: Statements regarding quality, value or the like may be considered misrepresentations of fact where the parties are not on equal footing and do not have equal knowledge or means of knowledge "and the decision of whether a representation is of fact or of opinion is always left to the jury" and therefore the order setting aside the jury's verdict should not have been entered.

> * * * Defendant's argue that the representation of a "good well" was a mere inclusion of adjectival words of commendation or opinion and therefore, not actionable.

> In *Holland v. Lentz* (1964)*,* we held:

> * * * It is recognized that statements of opinion regarding quality, value or the like, may be considered as misrepresentations of fact, that is, of the speaker's state of mind, if a fiduciary relationship exists between the parties, as for example, representations of value of a real estate broker to his principal; or where the parties are not on equal footing and do not have equal knowledge or means of knowledge.

> Prosser stated: * * * misrepresentation will not lie for misstatements of opinion as distinguished from those of fact * * *

> The evidence discloses that defendants owned a house and acreage located in Illinois Valley near the city of Cave Junction, Oregon. In May of 1969, defendants executed a listing agreement to sell the property with Mrs. McLean, a real estate broker. This agreement included information given by the defendants to Mrs. McLean. Mrs. McLean testified:

I asked the Loopers: Do you have a good well * * * and the comment came back, "Yes, we have a good well * * *."

On May 28, 1969, plaintiffs contacted Mrs. McLean.

Q: At the time you told them that there was a good well on the property, did you tell them that for the purpose of inducing them to buy the Looper's property?
A: A good well on any property is a tremendous inducement. If you have a good well, that's a selling point...
Q: At the time you told them that there was quote, a good well on the property, what did you mean to convey by that, what meaning did you mean to get across to the prospective buyers?
A: * * * that it was an adequate well, there was plenty of water * * *
Q: Plenty of water for what?
A: Adequate for household, and usually that includes a modest garden.

In the early evening of July 28, 1969, the parties met and inspected the house and "looked at the well and pumphouse." No specifications as to the depth of the well or how many gallons it would pump per hour were given the plaintiffs and the realtor did not have this information. The sale was later consummated.

On August 15, 1969, plaintiffs moved onto the property and on August 22, 1969, the well went dry. Plaintiffs drilled two additional wells but found no water.

We conclude that there was sufficient evidence to submit the case to the jury. A reasonable person could believe that a "good well" meant a well with adequate water for family household use and the plaintiffs relied on this representation.

The evidence shows that defendants knew the water in the well got low in the Fall of the year and they had to be careful in flushing the indoor toilet or the well would probably go dry. The plaintiffs were not on equal footing with the defendants and did not have equal knowledge of the adequacy or lack of adequacy of the water in the well. The jury returned a verdict for the plaintiffs and "These matters are ordinarily for the determination of the jury."
* * *"
Reversed With Instructions to Reinstate the Jury's Verdict.

3.4. Misrepresentation of law

Under the common law, in the absence of a fiduciary relationship (defined as one of "trust and confidence"), a statement concerning a matter of law was not actionable as fraud because of a curious legal maxim that "everyone was presumed to know the law" (McKean, 1927; *Maeker v. Ross*, 2014). Krauss (2023) adds: "[T]he law is presumed to be equally within the knowledge of both parties" (citing *Miller v. Osterlund*, 1923). Under the common law, a statement of the law governing a given set of facts was merely the expression of opinion by the speaker.

The case of *Puckett Paving v. Carrier Leasing* was decided on the basis of the common law rule. Note that in this case, the court stated that a different result might have been obtained had there been a fiduciary relationship between the parties (see Beck & Roberts, 2018).

3.4.1. Case Study: *Puckett Paving v. Carrier Leasing* (1976)

Carrier brought an action to recover four heavy-duty trucks from Puckett. The pleadings and the evidence show that Puckett was in possession of the vehicles under the terms of two certain leases providing for monthly payments in stated sums for 44 months.

Puckett had an option to purchase same for a stated price after all monthly payments had been made; that Puckett had made all monthly payments but refused to purchase the vehicles or to return them. Carrier elected to recover the vehicles rather than damages.

Puckett filed an answer and cross claim alleging that the contracts were induced by fraud in that an agent of Carrier "assured defendant that the lease agreements entered into would be considered a lease by the IRS" but that the IRS considered the same to be a sale and not a lease, resulting in damage to Puckett. The trial Court ordered Puckett to return the vehicles.

We affirm. Assuming such statements were made by an agent of Carrier to Puckett, they could only have been expressions of an opinion as to how the IRS had treated such agreements or would treat them in the future.

"Where no fiduciary relationship exists, misrepresentations as to a question of law will not constitute remedial fraud, since everyone is presumed to know the law and therefore cannot in legal contemplation be deceived by erroneous statements of law, and such representations are ordinarily regarded as mere expressions of opinion."

Affirmed.

As the common law has been called upon to adapt to new circumstances and contexts, exceptions have been recognized in many jurisdictions. Krauss (2023) states: "There are two exceptions, however. A general statement of law may be actionable when the speaker either 'is learned in the field and has taken advantage of the solicited confidence of the party defrauded,' or 'stands with reference to the person imposed upon in a fiduciary or other similar relation of trust and confidence'" (*Northernaire Prods., Inc. v. Cnty. of Crow Wing*, 1976, quoting *Stark v. Equitable Life Assurance Soc'y*, 1939).

Following the logic expressed by Krauss (2023), most courts today would hold that a professional who gives an opinion as to a matter of law in a professional setting, would be responsible for the truth of the statement made. Professionals such as lessors, architects, financial planners, real estate brokers, tax professionals—those professions which require a greater or more substantial knowledge of the law than possessed by a layperson— would fall within the rule of law found in the case of *Yorke v. Taylor*, 1969.

3.5. "Silence" as the Basis of Fraud: Duty to Speak

Generally, there is no "duty to speak" in a traditional "arms-length" business transaction (see Langevoort & Gulati, 2005). However, a "duty to speak" may be found in the following circumstances:

- In the sale of a home or other real property, many courts (most especially California and Colorado) require full disclosure of all material defects or important facts known by the defendant (see Garabedian, 1942);

- In a "fiduciary relationship" [such as between broker-client, partners in a business, etc.] there is a duty of full disclosure of all important financial facts or information that, for example, might impact on an individual's investment decision (Hunt, Hodge, & Thompson, 2020; Grower, 2021);

- To correct a prior misstatement or where a party gives a false impression by revealing some facts and withholding others.

    In *Bergeron v. Dupont,* 1976), the court stated:

"The master correctly ruled that a representation which was true when made could be fraudulent if the maker failed to disclose subsequent information which made the original representation false. While it is true that one who makes a representation believing it to be true and does not discover its falsity until after the transaction has been consummated has committed no fraud, both parties herein treat March 14, 1973, the date of closing, as the time at which the rights of the parties became fixed," resulting in a finding of fraud.

4. *Scienter*

The second element of proving fraud is the requirement of proof of *scienter*. Scienter may be shown where a defendant knew that a statement was false ("knowledge of falsity") or where the defendant had no knowledge of its truth or falsity of a statement but made a statement in any event ("reckless disregard of the truth"). Without the element of scienter, a defendant may be held liable for misrepresentation, but not for fraud (*Marion v. Bryn Mawr Trust Co.*, 2021).

5. "Justifiable or Reasonable Reliance" (Ledingham, Jr., 2010)

Justifiable reliance involves two elements of proof: That the *defendant intended* the plaintiff to rely on the statement and that the *plaintiff justifiably or reasonably relied on the statement.* Priebe (2001, p. 110) writes:

> "Justifiable reliance is a more subjective standard of reliance that takes into account the interactions between and experiences of the two parties involved. This standard of reliance is a 'fact-sensitive standard' that depends on 'the circumstances of the particular case, rather than of the application of a community standard of conduct to all cases.' The Restatement (Second) of Torts states that a 'recipient of a fraudulent misrepresentation can recover against its maker [if] … (a) he relies on the misrepresentation … and (b) his reliance is justifiable.' The Restatement provides that a person is justified in his or her reliance on a fraudulent misrepresentation unless the person knows that the representation is false or that its falsity is obvious to him."
>
> "The type of observation that is required depends upon the experiences and knowledge of the parties involved. The Restatement's example of a person who induces another to buy a horse, representing it to be sound, is an illustration of this required observation."

Justifiable reliance would not lie where the plaintiff knows the truth of a statement, or in the case of goods, where a reasonable inspection would have revealed the falsity of any assertion or statement, and the plaintiff had the opportunity to conduct such an inspection and fails to do so. In the case of an inspection, a plaintiff would not be required to engage in an inspection if such an activity would prove to be unduly burdensome or costly (see generally Kraus, 1994; *Ambac Assur. Corp. v. Countrywide Home Loans,* 2018).

The element of justifiable reliance creates the "over-the-top" TV pitchman who intentionally exaggerated just about every aspect of the product he was touting. Ironically, sometimes the more a person lies (misrepresents) the less likely a court would find justifiable reliance on the part of the plaintiff!

6. Damages

The plaintiff must prove that he or she suffered damage. In a case involving fraud and misrepresentation, damages may be awarded which reflect the difference between the value of the item *as received* and the value of the item *as represented* (so-called "benefit of the bargain" damages). In some cases, the plaintiff may choose to rescind the contract and seek damages under the remedy of cover by going into the marketplace in order to purchase a "reasonable substitute good" (see, e.g., UCC Section 2-712).

7. Section 402B of the Restatement of Torts

Section 402B of the Restatement of Tort provides a second theory of recovery in cases that involve the sale of goods:

> *"One engaged in the business of selling chattels, who, by advertising, or otherwise, makes to the public a misrepresentation of a material fact concerning the character or quality of a chattel sold by him is subject to liability for physical harm to a consumer of the chattel caused by justifiable reliance upon the misrepresentation…"*

It thus appears that the seller must be a "merchant" ["one engaged in the business of selling chattels"] and not one who engages in a casual sale (see *Blue Riv. Gems, Inc. v. S.V. & V. Diamond Corp.*, 2016). The scope of Section 402B would apply to all suppliers of chattels who have either:

1. Made the representation; or
2. Adopted a representation made by another.

Comment I to Section 402A, read in tandem with Section 402B, provides that an employee or family member of the purchaser who uses the product is also a consumer, as in "anyone who makes use of the chattel in the manner which a purchaser may be expected to use it."

Section 402B will provide an additional cause of action where *physical harm* has been caused to a consumer (broadly defined) of a product. Such harm may include lost wages or an award of profits as consequential damages, as well as damages for personal injury under certain circumstances.

As in common law actions for fraud or misrepresentation, the plaintiff under Section 402B must prove justifiable reliance. Justifiable reliance will not lie "where the misrepresentation is not known, or there is indifference to it, or it does not influence the purchase or a party's subsequent conduct" (Comment j). The same standards apply under Section 402B as in the cases of fraud and misrepresentation; that is, if a person is aware of the truth of any misstatement, that person cannot recover. Likewise, some courts have held that if a reasonably prudent person should have been aware of the facts or would have investigated further, that person cannot recover.

A statement, however, does not have to be the "sole inducement to purchase…," but only that it is a "substantial factor in the inducement" (Rolfson, 2022). This is generally a question of fact for a jury to determine, as are most actions filed under a theory of fraud (Nance, 2021).

Part II – Securities Fraud

8. What is Securities Fraud?

Pearce (2023) writes:

> "Securities fraud, also known as investment fraud or stock fraud, involves using false or misleading information to convince investors to make investment decisions that result in substantial losses. All forms of securities fraud aim to deceive investors into taking actions that benefit the perpetrator financially."

Chen (2022a) notes: "The perpetrator of the fraud can be an individual, such as a stockbroker or an organization, such as a brokerage firm, corporation, or investment bank. Individuals might also commit securities fraud through schemes such as insider trading." Chen (2023a) refers to securities fraud as a "white-collar crime."

At its core, securities fraud is the misrepresentation or omission of information designed to induce investors into trading securities (Buell, 2011). Perry (2021) writes:

> "According to the Federal Bureau of Investigation, the term 'securities fraud' covers a broad spectrum of activities characterized by the misrepresentation or omission of material information to investors in during the purchase or sale of securities. It can also extend to manipulation of national financial markets. Some of the activities the FBI designates as securities fraud include Ponzi and pyramid schemes, high yield investment fraud, advance fee schemes, insider trading, falsifying details in corporate filings, lying to auditors, and manipulating share prices."

Securities fraud may be actionable as common law fraud. However, Congress, the Securities and Exchange Commission (SEC), and individual states may provide for criminal and civil liability for securities fraud, as well

(see Keller & Gehlmann, 1988). Salvucci (2023) notes: "The trading of securities like stocks, commodities, derivatives, and bonds is overseen by the Securities and Exchange Commission (SEC), a government agency responsible for protecting investors and regulating the securities industry."

The most extensive federal anti-securities fraud measure is found in Rule 10b-5, promulgated under Section 10(b) of the Exchange Act of 1934 (see Kramer, 2014).

The Securities Exchange Act of 1934, Section 10(b), states:

> *"It shall be unlawful for any person, directly or indirectly, by the use of any means or instrumentality of interstate commerce or of the mails, or of any facility of any national securities exchange… [to] use or employ, in connection with the purchase or sale of any security registered on a national securities exchange or any security not so registered, or any securities-based swap agreement… any manipulative or deceptive device or contrivance in contravention of such rules and regulations as the Commission may prescribe as necessary or appropriate in the public interest or for the protection of investors."*

Securities fraud cases are also subject to the SEC's Rule 10b-5, which states:

> *"It shall be unlawful for any person, directly or indirectly, by the use of any means or instrumentality of interstate commerce, or of the mails or of any facility of any national securities exchange,*
>
> *• To employ any device, scheme, or artifice to defraud,*
> *• To make any untrue statement of a material fact or to omit to state a material fact necessary in order to make the statements made, in the light of the circumstances under which they were made, not misleading, or*
> *• To engage in any act, practice, or course of business which operates or would operate as a fraud or deceit upon any person, in connection with the purchase or sale of any security."*

Rule 10b-5 provides for civil liability, and in some cases, criminal liability (Couture, 2019), with proof of the following elements:

1. that the individual misrepresented a material fact;
2. that the individual did so knowingly, i.e., with *scienter;*
3. that the plaintiff reasonably relied on the individual's material misrepresentation; and
4. that the plaintiff's reliance on the material misrepresentation caused their loss.

An issuer of securities who misrepresents a material fact in a registration statement can be civilly liable under Section 11 of the Exchange Act of 1934. However, unlike finding liability under Rule 10b-5, which requires knowledge of the misrepresentation, Section 11 imposes a form of strict liability (liability without showing fault) on issuers. Accordingly, regardless of whether an issuer knows of the material misrepresentations, the issuer could still be liable for securities fraud if the registration statement contains a material misrepresentation.

8.1. Insider Trading (see King & Roell, 1988)

One of the most notable examples of securities fraud brought under Rule 10b-5 is *insider trading* (Hunter & Freese, 1989; Hunter, 1990). Nagy (2020) writes:

> "*Chiarella v. United States* (1980) occupies a special place in history. It was the first prosecution under the federal securities laws for the crime of insider trading. And the U.S. Supreme Court's iconic holding--regarding the circumstances under which insider trading constitutes securities fraud--not only profoundly changed the law in 1980 but also continues to define insider trading's contours right up to the present day."

Professor Nagy (2020) provides an apt summary of the facts of *Chiarella*:

"The defendant was employed by a financial printing firm hired to publish announcements of takeover bids. On several occasions he managed to deduce from code names the identities of the actual companies, and then used that confidential information to surreptitiously purchase stock in the acquisition targets. After settling a civil securities fraud action brought by the Securities and Exchange Commission, Chiarella was indicted in New York federal court for criminal securities fraud, found guilty by a jury, and unsuccessfully appealed to the Second Circuit. The Supreme Court, however, overturned his conviction."

8.1.1. The Misappropriate Theory

In *U.S. v. O'Hagan* (1997), the United States Supreme Court would extend *Chiarella* to include the misappropriation theory as a basis of Section 10b-5 liability, "which opened the application of Rule 10b-5 to wider range of insider trading."

The misappropriation theory was developed in cases where an individual trades stock in a corporation, in which they were *unaffiliated*, i.e., they were an "*outsider*," on the basis of *material* non-public information obtained through a breach of a fiduciary duty owed by an *insider* to the source of the information. The misappropriation theory does not require that a party owe a fiduciary duty to the company in whose stock they trade. The party's knowledge of the information alone is sufficient to create a form of derivative liability under Rule 10b-5 (see Hagen, 1998; Merwin, 1996; Diamond et al., 2021).

In *U.S. v. O'Hagan (1977)*, a partner in a large law firm purchased stock futures in a company that was involved in a tender offer based on inside information that he had learned from other partners at the firm working on the deal. Although the defendant had no *fiduciary duty* to the company in whose stock he traded, the Supreme Court upheld the defendant's conviction under Rule 10 b-5 on the grounds that he had nonetheless *used confidential information to trade securities* (see Quinn, 2003; Madden, 2008). Importantly, the Supreme Court held that the SEC did not exceed its rulemaking authority when it adopted Rule 14e-3(a) which "proscribes trading on undisclosed information in the tender offer setting, even in the absence of a duty to disclose" by misappropriating confidential information.

The Supreme Court reasoned that such insider trading is fraudulent because it is akin to embezzlement; that is, "the owner of the confidential information has exclusive use of such information, and the trader misappropriates that information by trading on it and not disclosing the use of the information to the owner of the information" (Wex (Definition Team), 2022).

After the decision in *O'Hagan*, the Securities and Exchange Commission (SEC) codified the misappropriation theory in Rule 10b5-1, which broadly prohibits trading on the basis of *material non-public information.*

8.2. Two Notorious Case Studies on Insider Trading

8.2.1. Martha Stewart

In 2003, Martha Stewart, the ubiquitous TV and media mogul, was charged by the SEC with obstruction of justice and securities fraud—including insider trading—for her part in the 2001 ImClone case. Stewart sold nearly 4,000 shares of biopharmaceutical company ImClone Systems she held based on information received from Peter Bacanovic, a broker at Merrill Lynch, through his assistant Douglas Faneuil. Bacanovic's "tip" or insider information came after ImClone Systems' chief executive officer (CEO), Samuel Waksal, who had sold all his shares of the company. This information was shared about the same time as ImClone was awaiting a decision of the Food and Drug Administration (FDA) on approval of its cancer treatment, Erbitux.

The SEC alleged that "Waksal secretly knew that the FDA was about to reject ImClone Erbitux application." Shortly after these trades, the FDA in fact rejected ImClone's drug, causing shares to fall 16% in one day. Stewart was charged with nine counts obstruction of a proceeding, conspiracy, and making false statements to federal investigators." The SEC alleged:

> "that Stewart and Bacanovic went on to lie when the Commission staff and criminal authorities questioned them about the facts surrounding Stewart's sale of ImClone stock. Stewart and Bacanovic fabricated an alibi for Stewart's trades, stating that she sold her ImClone stock because she and Bacanovic had decided earlier that she would sell if ImClone's stock price fell below $60 per share. In addition, Stewart told the government that she did not recall anyone telling her that day that any of the Waksals were selling their ImClone stock."

According to the SEC Release, dated June 4, 2003:

> "The Commission further alleges that Stewart and Bacanovic subsequently created an alibi for Stewart's ImClone sales and concealed important facts during SEC and criminal investigations into her trades. In a separate action, the United States Attorney for the Southern District of New York has obtained an indictment charging Stewart and Bacanovic criminally for their false statements concerning Stewart's ImClone trades."

The Commission sought, among other relief, an order requiring Stewart to *disgorge* the losses she had avoided through her trades, plus civil monetary penalties. The Commission also sought an order barring Stewart from acting as a director of, and limiting her activities as an officer of, any public company. Stewart had been Chairman and Chief Executive Officer of Martha Stewart Living Omnimedia, Inc.

On March 5, 2004, Stewart was found guilty on three counts of lying, but not on the charge of securities fraud. Baconovic was found guilty on four counts, as well (Hays & Eaton, 2004). Stewart served five months in a federal corrections facility (SEC Release, 2003-69, 2003; U.S. Securities and Exchange Commission, 2021).

8.2.2. Amazon

In September 2017, former Amazon.com Inc. financial analyst Brett Kennedy was charged with insider trading (SEC Release, 23931, 2017). The government alleged that Kennedy gave Maziar Rezakhani, a fellow University of Washington alumnus, information on Amazon's 2015 first-quarter earnings before the release of the information to the public. Rezakhani paid Kennedy $10,000 for the information. In a related case, the SEC said Rezakhani made $115,997 trading Amazon shares based on the tip from Kennedy.

On September 7, 2017, Kennedy "pleaded guilty today in U.S. District Court in Seattle to securities fraud involving insider trading, announced U.S. Attorney Annette L. Hayes. BRETT D. KENNEDY, 26, currently of Blaine, Washington, admitted that in April 2015, he provided non-public quarterly financial results to a friend who then purchased Amazon stock and sold it at a profit once the results were made public" (U.S. Attorney's Office, Western District of Washington, 2017). Day (2007) reported that Kennedy was sentenced to six months in prison and was required to pay a $2,500 fine.

8.3 Damages Available Under SEC Rule 10b-5

Generally, there are three main remedies available for violations of Rule 10b-5, which include compensatory damages, punitive damages, and recission (MDF Law, 2023). Since the purpose of civil damages for securities fraud lies in compensating the plaintiff for any losses incurred due to the defendant's wrongful act, compensatory damages would typically cover the "actual damages" that the plaintiff suffered from the purchase or sale of the security (see Burch, 2007).
The following are examples of compensatory damages:

- Gains or profits that the plaintiff "would have made" if the defendant had not engaged in the prohibited conduct;
- The purchase price and any transaction or brokerage fees paid by the plaintiff;
- The value of the plaintiff's security.

Compensatory damages may also include:

- Out-of-pocket damages, reflected in the difference between the contract or price paid by the plaintiff and the actual value of the securities at the time of the date of sale;
- Cover damages, which allows the defrauded seller of a security to recover the difference between the highest value of the security within a reasonable time after the plaintiff had discovered the fraud or when the fraud should have reasonably been discovered.

In addition, the plaintiff may be able to recover punitive or exemplary damages under certain circumstances to punish the defendant for outrageous, malicious, or egregious conduct in order to deter others from engaging in similar conduct (Burch, 2007).

In addition, a court may permit the party against whom fraud was committed to rescind any fraudulent transaction, returning the defendant and the plaintiff to the status that they were in before the fraudulent conduct had occurred. Rescission may involve voiding an agreement or, under certain circumstances, a plaintiff can elect that the defendant to fulfill the contract if that proves to be to the advantage of a plaintiff.

8.4. State Actions in the Area of Securities Fraud

State governments may impose civil and criminal liability on individuals engaged in securities fraud, as well (see Ash, 1988; Find Law, 2016).

State security laws are often referred to as "Blue Sky Laws." In addition to federal securities regulations, states may require issuers of securities to register with their state in order to guard against and regulate securities fraud committed in their jurisdiction (Mahoney, 2003). The SEC (2023) writes:

> "In addition to the federal securities laws, every state has its own set of securities laws—commonly referred to as 'Blue Sky Laws'—that are designed to protect investors against fraudulent sales practices and activities. While these laws do vary from state to state, most state laws typically require companies making offerings of securities to register their offerings before they can be sold in a particular state, unless a specific state exemption is available. The laws also license brokerage firms, their brokers, and investment adviser representatives."

Interestingly, state securities laws antedated federal legislation. In the early 1900s, well before Congress had enacted the federal securities acts, many individual states had adopted legislation regulating the sale of securities. Segal (2020) writes: "The term 'blue sky law' is said to have originated in the early 1900s, gaining widespread use when a Kansas Supreme Court justice declared his desire to protect investors from speculative ventures that had 'no more basis than so many feet of 'blue sky''' (*Hall v. Geiger Jones Co.*, 1917).
Sarkar (2021) writes that:

> "Despite the differences from state to state, blue sky laws share certain features in their approach to prevent misinformation about investment returns and risks. The state laws provide for oversight of the sales process and create liability for fraudulent sales in two ways. First, the laws require the registration of securities that will be offered or sold within the state, unless the offerings fall within specified exemptions from registration…. These processes are administered by a state's securities agency or commission. The registration process for securities and securities transactions prevents fraudulent transactions by allowing state security commissions to review the securities offerings and ensure that the individuals transacting in the securities markets are qualified and regulated by the state."
> "Second, blue sky laws have antifraud provisions that create liability for any fraudulent statements or failure to disclose information as required…. The specific kinds of statements and acts that can form the basis of a fraud claim will depend on a state's statutes and case law. The cause of action available and remedies available to investors bringing private suits also differs from state to state, but may include rescission of the transactions, forcing the seller to give up profits, or other measures of damages."

In the 1933's, under the Roosevelt administration, Congress began regulating both securities and securities' exchanges. By that time, all states, with the exception of Nevada, had enacted their own blue sky laws. As a result, securities regulation consisted of a "patchwork" of individual state laws and federal legislation.

In an attempt to introduce a certain rationality into the regulatory environment, Congress enacted the *National Securities Market Improvement Act of 1966* (NSMIA) whereby certain securities listed on national stock exchanges, such as NASDAQ or NYSE, are exempt from state blue sky laws. Securities exempt by Rule 506 [Limitation on number of purchasers: There are no more than, or the issuer reasonably believes that there are no more than, 35 purchasers of securities from the issuer in offerings under this section in any 90-calendar-day period] under federal law are also exempt under state blue sky laws.

Di Trolio (2004, p. 1295) notes: "[T]hree distinct types of blue-sky laws remained in effect after 1996: antifraud provisions, provisions requiring the registration or licensing of certain persons engaged in the securities business, and provisions requiring the registration of securities."

9. Concluding Observations

In areas not related to securities fraud, the common law causes of action of misrepresentation and fraud were effective in combatting some of the more egregious types of fraud which led individuals to enter into contracts or to undertake actions that were based on false or misleading information. Yet, because of certain limitations placed on the nature of proof relating to definitional considerations, opinions, and commendations, it was often difficult to apply these theories in product cases.

These limitations would be specifically addressed in the creation of "strict liability in tort" as the preferred theory of establishing liability in products cases—focusing on the defects in manufacturing, design, or marketing in order to protect purchasers, users, and others who were harmed when defective products entered into the "stream of commerce" by manufacturers and other parties. The Teaching Note on Strict Liability in Tort, the last in this series, will describe this effort which has proven successful in fighting for the rights of injured parties when products prove to be defective.

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Using an Animation Movie to Develop Ability of Stress in English of Primary School Students

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Abstract

The study employed an animation movie to develop the ability of stress in English of EFL students. The participants of the study were 30 Grade 5 students in a primary school in Thailand. The research instruments comprised the animation movie titled "Frozen," syllable stress exercises, and an oral test which acted as a pre and posttest. The garnered data were examined and expressed as means, standard deviations and t-test. The interview information was analyzed through content analysis. At the 0.01 statistical significance level, the results of this study demonstrated that the syllable stress posttest score (M=16.30, S.D.=8.77) was significantly higher than the pretest score (M=14.33, S.D.=7.26). This signifies that students could pronounce words more accurately. Furthermore, the interview results suggested that the animation movie could create much more relaxing mood in the classroom, which remarkably contributed to language learning. All in all, it indicated that the animation movie was able to effectively develop the ability of stress in English in a pleasant classroom.

Keywords: Animation Movie, Pronunciation, Stress, Students

1. Introduction

English is considered as the most important international language because it is widely used in the age of globalization, which is better known as the borderless world for people to communicate and exchange information with each other (Kraikratok 2011). English is, therefore, essential in communication for economy, politics, culture and occupation. In addition, English is an important tool for academic and professional advancement since various types of media are in English. As such, the ability to use English effectively is very significant (Khothanam 2016).

Thailand is one of the countries that has made a strong commitment to teaching English which can be seen from the 8th edition of the National Education Development Plan (1997-2001) to the present one (2017-2036), in which the government has designated English as one of the eight basic subject groups that everyone must learn (National

Education Development Plan, 2017-2036). Learning English requires thinking processes and practices of listening, speaking, reading and writing skills, causing the current English language teaching management to be adjusted by the application of new teaching materials in the digital age in order to stimulate students' interest and to promote the organization of teaching and learning activities in English in accordance with the objectives of teaching and learning management (Damnet 2018).

Although Thai education provides teaching and learning of English as a foreign language, and English is widely acknowledged in Thailand as an essential topic taught from kindergarten to the highest education level, some unsatisfactory results were found in English instruction due to teachers' teaching behaviors that focused mostly on language forms rather than language use (Kraikratok 2011). Furthermore, it has been frequently asserted that English instruction in Thailand has been a failure. Students in schools learn English for more than ten years, but the majority of them are unable to successfully explain their thoughts or simply speak in English on a daily basis (Noom-ura 2013).

When studying English, students are required to acquire a number of knowledge, for example, vocabulary and grammar in order to listen, speak, read and write in English. Students must be able to use structures and words appropriately. Proper pronunciation is also required for effective communication (Ellis 1997). Speakers with poor pronunciation, according to Gilakjani (2011), will fail to communicate successfully since words would be incomprehensible to listeners. Good pronunciation is the cornerstone of efficient spoken communication (Garriagues 1999). Individuals who communicate clearly and accurately should have no problem getting messages across to intended audiences. On the other hand, miscommunication can arise when words are conveyed or stressed incorrectly.

Several studies involving EFL students' pronunciation (Rasyid 2016; Sahatsathatsana 2017; Widyaningsih 2017; Rahmawati & Ratmanida 2020; Juma 2021) reveal that EFL students encountered problems when pronouncing English sounds because of the influences of their mother tongue. Thai students, for example, have a hard time speaking English, especially when it comes to pronunciation (Ratchawiang and Sornsuwit 2013). This is due to the fact that the Thai language has a completely different sound system from English. English is a language with stress on words or sentences while the Thai language emphasizes every word on its tonal base, so it is difficult for Thai people to use stress correctly when speaking English. Correct English pronunciation, therefore, is important in communication since wrong word stress may result in misunderstanding among interlocutors. Given this importance, learning materials are essential in assisting learners to stress words correctly. At present, technology is a crucial part in learning and teaching; consequently, incorporating technology into pronunciation teaching should not be overlooked (Plailek 2012). One of those technological media which is able to attract learners is cartoon animation.

"Animation" is defined as figures that are manipulated to appear as moving images (Maio 2020). Similarly, Utamachan (1995) explained that animation refers to what resulted from the use of techniques to make lifeless things move. It aims to give life and soul to a design through the transformation of reality that is very popular nowadays. Utamachan (1995) also said that using visual techniques is a knack of the producers because a good visual technique leads to good programs, and the visual technique works well with young children.

Cartoon or animation is one of the media used in teaching and learning in terms of imparting values, culture and entertainment to children. Whether in the form of books or in animated films, it can attract a lot of attention from children (Canning and Wilson 2000). Yanarom (2013) said that using English animated movies is a method that can help students succeed in pronouncing and speaking English because the activities help students practice using the language and motivate them to learn it naturally. By watching movies, listening to English, and sometimes reading translated movie scripts in English, students simultaneously learn the pronunciation of words or phrases as well as slangs, idioms, and sentence patterns commonly used by native speakers. If they do not understand what is said in the movie, they can rewind and watch the scene again. This result is consistent with Alghonaim's (2020) conclusion which mentions that children can learn English pronunciation by watching TV cartoons.

However, in Thailand, few research studies have been conducted on the use of an animation movie to improve primary school students' stress ability in English. The aim of this study is to investigate the effectiveness of an animation movie for developing stress ability in English among primary school students. The findings of the study could serve as guidelines for teachers teaching English speaking or English pronunciation. Moreover, learners who want to improve their stress skills in English can make use of English animation movies to better their pronunciation skill.

2. Method

A mixed method research was used in this study. To this end, both quantitative and qualitative methods were employed to obtain information about the development of stress ability in English of Grade 5 students in one primary school in Thailand. A one group pretest-posttest design and a semi-structured interview were used to collect data from the participants in the study.

2.1 Participants

The participants in this research consisted of 30 Grade 5 students in a primary school in Thailand. They were selected by purposive sampling method based on Taro Yamane's research demographic formula from a total population of 221 students in six classes.

2.2 Instruments

The present study employed four sets of instruments.

2.2.1 An animation movie titled "Frozen"
2.2.2 Three sets of handouts for practicing to stress sounds in English
2.2.3 A pretest/posttest consisted of 30 items containing 30 words extracted from the animation movie, Frozen. These 30 items accounted for 30 scores which later was interpreted in order to measure the participants' ability of stress.
2.2.4 A semi-structured interview for examining students' opinions toward the use of animation movie in developing their ability of stress in English where all of the participants were asked the two questions below after the posttest administration
      1. Do you like incorporating an animation movie into the English class? Why?
      2. Can the animation movie, Frozen help you to pronounce English words better? How?

2.3 Data collection

The data collection procedure was divided into three stages as follows:

Stage 1: Pretest administration
Before having the participants watch the animation movie, they took a pretest which was an oral test where they pronounced 30 English words extracted from the animation movie.

Stage 2: Treatment period
The participants watched the animation movie, "Frozen," and did oral exercises for three weeks. In every class, the participants were taught the principles of word stress before the animation movie was displayed. This way of teaching can let them have more focus on the target words. In the first class, the participants were taught the principles of word stress for 2-syllable words. After that they watched the movie and did some oral practices. In the second week, how 3-syllable words were stressed was presented to the participants before they watched the movie and practiced pronouncing those words. In the last week, the principles of pronouncing 4-syllable words were explained and the participants then watched the movie and practiced pronouncing the words.

Stage 3: Posttest administration

The participants took the posttest which was the same as the pretest.
The participants' pre and posttest results were checked by three teachers. Two of them were Thai teachers who specialized in English phonetics. The other one teacher was an English native speaker.

2.4 Data analysis

The data obtained from the pretest and posttest were analyzed through means, standard deviations, and t-test in order to examine the participants' development of stress ability in English. The interview data were analyzed, summarized and reported descriptively.

3. Results

The findings relating to participants' demographic characteristics are presented in Table 1 and the pretest and posttest results are shown in Table 2.

Table 1: The number and percentage of demographic characteristics of the participants by gender.

	Number	Percentage
Male	16	53.34
Female	14	46.66
Total	30	100.00

As shown in Table 1, from 30 students, 16 of them counting for 53.34% were male and 14 of them (46.66%) were female.

Table 2: Pretest and posttest scores

	Number	Full score	Scores		Mean	S.D.	T-value	Sig.
			Min	Max	(M)			
Pre	30	30	9	20	14.33	7.26	2.88	0.01
Post	30	30	11	23	16.30	8.77		

**p<.01

As displayed in Table 2, the mean score for the pretest was M=14.33 (S.D.=7.26) and that for the posttest was M=16.30 (S.D.=8.77). A paired sample t-test indicated that this difference was statistically significant, $t(29)=2.88$, p<.01. The students obtained higher scores in the posttest after watching the animation movie and doing exercises weekly for a period of three weeks.

The results of the interview with 30 students were tallied, grouped and interpreted. Based on the analysis, the obtained information can be categorized into two main points. The first one is the students' preference for using the media in the classroom. Most of the students thought that the animation movie could attract and motivate them to learn because they would like to watch and understand the cartoon story. Therefore, they paid attention to the movie. They focused on the English sounds spoken by each character. This could let the students learn correct English pronunciation. The other point is the classroom atmosphere which is more relaxing and entertaining, compared to the one before incorporating the movie. Although the students had to watch and listen to English sounds, they could concentrate on the movie because they were interested in the story.

Apart from the movie, the students asserted that exercises which let them practice pronouncing words after watching the movie helped improve their English pronunciation as they provided examples to stress words correctly. They were more confident in pronouncing English words since they had good examples. In addition, the students mentioned that they would like to improve word stress in order to speak English more accurately in real-life language use. This means that the animation movie helped raise their awareness on the importance of correct English pronunciation, in particular, how to stress English words accurately for effective communication.

4. Conclusions and Discussions

The present study was conducted with the objective to develop stress ability in English of Grade 5 students by using the animation movie, Frozen. The findings showed significant differences between pre and posttest scores (t=2.88, p<.01). This means that the students were able to pronounce English words more accurately after learning with the animation movie and practicing doing exercises for a certain period of time. This result is in line with those of Ponglangka (2016), Widyaningsih (2017), Rahmawati & Ratmanida (2020), and Juma (2021), all of which reported the improvement of students' English speaking ability after learning with animation movies. This signifies that using animation movies as a medium of instruction helps develop students' English speaking skill, particularly their stress in English. They could pronounce words almost similarly to native speakers because they were familiar with the English sounds spoken by native speakers. This finding reinforces the effectiveness of using an animation movie on improving students' ability of stress in English.

In addition, the interview results showed that students enjoyed learning English with the animation movie because the movie stimulated them to have fun and enthusiasm in learning English. Some students mentioned that they liked the main cartoon character, Elza and they wanted to be like her; therefore, they tried to imitate her speaking style. This finding is similar to Prayogi's (2013) result which suggested that using animation movies to develop students' speaking ability would help them speak fluently and pronounce words more correctly. They were more attentive and involved in the learning process. This finding also lends support to Rasyid (2016) who concluded that this type of movies encouraged students to have more participation in their language learning due to its presentation and interesting story. Furthermore, animation movies could create a relaxing atmosphere because students were motivated to speak English without embarrassment. They were more confident in speaking English. This finding corresponds with the result of Widyaningsih (2017) who reported that a class atmosphere with animation movies was fun and enjoyable, contributing to getting students' more participation.

In conclusion, animation movies are effective media for improving students' oral skills. They can gain students' interest and unforcedly help them learn to pronounce words correctly. This process ultimately leads to students' English pronunciation improvement. Moreover, they can have fun while learning. This way of teaching also makes them aware of the effectiveness of correct pronunciation and lets them have good attitudes towards learning English.

5. Suggestions

The study suggests a number of areas for English teaching and future research.
1. Based on the positive results from this study, teachers can incorporate animation movies in a language classroom in order to naturally teach students about correct pronunciation. However, it is essential to employ a movie that can arouse their interest. Therefore, students' information about their favorite movies will be very useful.
2. Using animation movies to teach other skills of English, for example, listening or reading can be considered since students can also practice listening English sounds and reading English subtitles while watching a movie.
3. Similar investigations should be carried out with other target groups in order to examine whether this form of learning can improve students' ability to pronounce English.
4. Results between learning English with and without animation movies should be compared to examine significant differences between these two methods.
5. The results of the test should be reported to students continuously in order for the students to know their advantages and disadvantages and use them as a source of their English learning ability improvement and of effective self-development.
6. Besides animation movies, exposures students to other authentic media with English sounds, for example, English movies can be considered as a tool for developing learners' proper pronunciation.

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Exploring a Blended Learning Comprehensive Transformation Process for a Non-Lab Based Graduate Course at UAE University

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Abstract

Blended Learning (BL) as a teaching method has been conceived to be an efficient replacement for the conventional face-to-face teaching method. This is because it merges between student-instructor in-class interaction and the flexibility of learning outside the classroom's place and time. United Arab Emirates University has adopted a recent transformation initiative to BL guided by a clear comprehensive strategy and efficiently supportive tools. This research explored the actors, actions, and outcomes of this BL transformative process in one of the pioneering non-lab based master level courses. The research explored the logistics, infrastructure, technical support, and training provided by the UAE University as essential pillars for the BL courses transformation. The assessment of the degree of success of this BL transformation process was undertaken through the assessment of the attainment of the Course Learning Outcomes (CLOs), Instructor and Students Opinion Surveys and face-to-face interviews. The results of this assessment process indicate that the comprehensive, well planned, and the efficient technical support for the BL transformation process have resulted in a successful model that might be easily replicated in similar higher education institutions. Still, some technical problems have emerged and solutions have been suggested to them to assure the successful implantation of the BL transformation in other courses.

Keywords: Blended Learning, Engineering Education, Architectural Engineering, Graduate Education, Non-Lab Based Courses

1. Introduction

Blended Learning (BL) is normally defined as a process that combines both traditional in-class and face-to-face teaching delivery methods with online and e-Learning instruction. Therefore, while BL gives the students the advantage of in-class interaction, it also gives them a flexible learning opportunity outside the physical boundaries of their classrooms (ELM Learning, 2023). BL is sometimes referred to as the "new normal" in teaching delivery. In BL courses both the face-to-face and online segments are synergically producing a richer learning experience

as they do not just duplicate same course contents in various formats (Dziuban et al., 2018; Tucker et al., 2016). Kolinski (2022) defines three main benefits of BL for students. First, is the safe learning environment through reducing the physical contact hours among students while they still enjoy live communication. Second, is the interactive learning process that avoids the boredom of traditional in-class delivery especially for theoretical topics. Instead, BL equips students with various learning tools that makes the learning process more fun. Third, is the learner autonomy, where BL allows students to individually access the materials of their courses at any time suitable for them. This will not make the learning process an obstacle for practicing other life activities, especially for graduate students. Moreover, it is claimed that the main advantage of BL is evident by its ability to improve the students' learning experience where recent studies revealed that the adoption of BL methods has reduced failure rates and significantly enhanced the students' engagement (Panopto Team, 2019).

Locally in the United Arab Emirates (UAE) the UAE University, the first established public university in the country with its on-going increasing ranking, devised an ambitious plan for creating a smart teaching and learning environment by 2014. In 2017, this smart learning initiative was developed into the Blended Teaching and Learning (BTL) initiative. This initiative aims mainly to achieve better students' engagement in the learning experience through technology-supported pedagogies that utilize both face-to-face and online learning tools. This BL transformation initiative has been managed by the Center of Excellence in Teaching and Learning (CETL) at the UAE University through a well-planned Blended Course Transformation (BCT) process through which the Center called for proposals for courses BL transformations to be submitted by faculty members and instructors. Then, the Center reviews and approve the suitable proposals. The Center also arranged a series of workshops to equip the selected instructors with the tools and skills required to successfully undertake the BL transformation process. Meanwhile, the application of the BL transformation of courses have been monitored by an appointed College Liaison who usually have some prior experience of BL tools (CETL, 2019). The Department of Information Technology (DoIT) at the UAE University provided the needed technical support as required by the involved instructors along the application of the BL transformation process that is usually gradually completed in 2 or 3 academic semesters. Figure 1 summarizes this Blended Course Transformation (BTC) Process showing the main actors with their assigned activities until reaching to the final output of fully BL transformed courses.
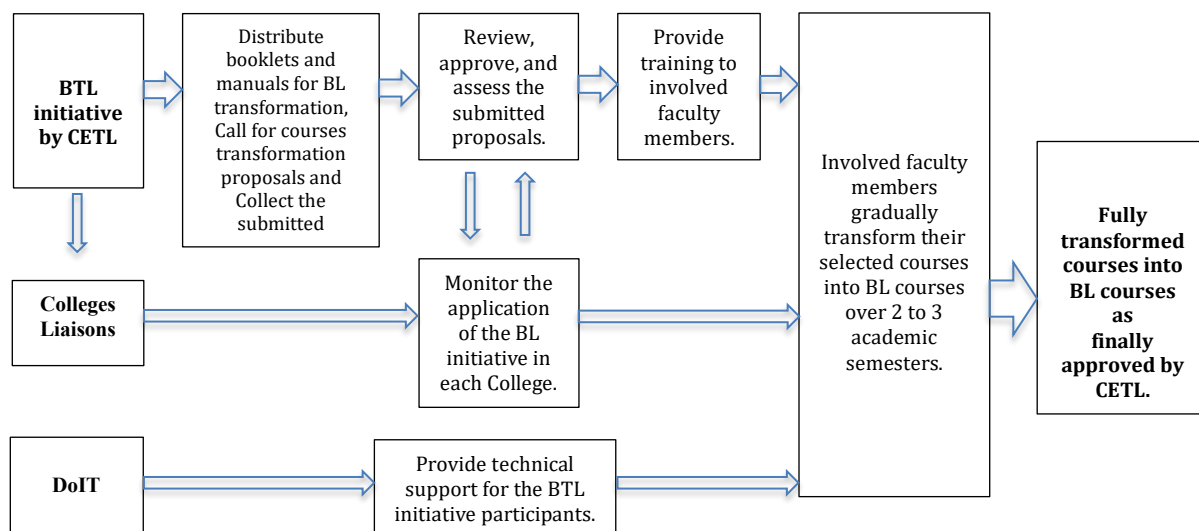
Figure 1: The Blended Course Transformation (BTC) Process at the UAE University.

In the following sections, the research will present, in an exploratory manner, a pioneering case study for the application of the BL transformation process of a non-lab based graduate course from a conventional face-to-face delivery format to a fully BL one. The main aim of the research is to contribute to the global literature about the BL applications and its best practices as an effective teaching method through exploring the BL transformation process and its detailed actors, actions, and tools as practiced at the UAE University. It also aims at discussing the assessment of the BL transformed course from various perspectives including the involved students' performance

and their opinion about the BL transformed course as a case study. The result of this investigation is believed to inform the future BL transformed courses.

2. A Pioneering Case Study for BL Transformation at UAE University: ARCH614 Master Course

2.1 Background about the Master of Science in Architectural Engineering Program

The Master of Science (MSc) degree in Architectural Engineering attracts students with interests in the architectural design and building construction in high performing built environment. The program focuses on both professional practice and academic research. In doing so, the program encompasses courses dedicated to building science, sustainable building systems, and high-performance design on the built environment level. The 30 credit hours program culminates in 9 credit hours of Thesis work. The MSc in Architectural Engineering Program has the following Program Learning Outcomes (PLOs) (UAEU, 2023a), upon successful completion of this program, students will be able to:

- PLO-1 Apply advanced research techniques and methods to the analysis and solution of engineering problems.
- PLO-2 Demonstrate advanced knowledge sufficient to analyze complex environmental issues related to building and urban systems.
- PLO-3 Develop comprehensive engineering systems, highly specialized components, or appropriate processes for built environment.
- PLO-4 Apply advanced knowledge in a specialized and emerging area in high performance built environment.
- PLO-5 Develop communication skills to present, explain and criticize highly complex issues.
- PLO-6 Evaluate engineering systems in high performance-built environment according to relevant regulations and codes.
- PLO-7 Evaluate knowledge of contemporary professional practice in high performance built environment.

2.2 Background about ARCH 614 Master Course

The presented pioneering BL transformation here is of the non-lab based course ARCH 614: Sustainable Community Development. It is a popular 3 Credit Hours course offered as part of the Master of Architectural Engineering curriculum. The course has the following Catalog Description: Concepts and techniques, spatial aesthetics, social, cultural, technical and marketing issues, integration into existing urban system morphology of today's urban development in the Gulf, common patterns and forms of urban development within the Gulf urban environments, investigation of magnets and forces that induce the interest in the development of urban spaces. Topics include impact on suburb cities, urban master plans, spatial composition and infrastructures, real estate development, urban growth control and management, role of critical analysis, assessment, valuing through community participation feedback in creating appropriate development, case studies.

In addition, the Course Learning Outcomes (CLOs) include first, providing students with a better understanding of, and insight into, the major challenges facing the local communities. Second, helping students develop the skills necessary to address those problems and providing holistic architectural and urban solutions that are sustainable and appropriate to the community being served. Third, helping students develop cultural and social awareness. Fourth, giving students the opportunity to reflect on the importance of their local communities. Sixth, helping students gain a better understanding of the key role of neighborhood planning in sustainable community development (UAEU, 2023b).

The course ARCH 614 used to be conventionally taught through weekly face-to-face classes in Fall and/or Spring semester as needed. The course activities were usually subsumed and distributed among 16 Weeks. Each week included traditionally delivered PowerPoint lecture or class discussion for some textbook chapters assigned to students as reading materials. Communication with students was mainly through face-to-face interaction and the submission of students' work was done through hardcopies and digital copies on a Cloud platform such as Dropbox

or OneDrive. Students were asked to conduct one main research to develop a conceptual framework relying mainly on the assigned reading materials (textbooks) and some supporting materials (videos, etc.). Then, after being trained on utilizing advanced analytical computational methods, students were required to individually undertake an analysis for real case studies using computerized simulation tools. Feedback for the students' both theoretical and analytical work was done through face-to-face class discussions.

2.3 Motivation for the BL Transformation of the Course ARCH 614

The most important motivation to transform the ARCH 614 course was that BL would give the chance for the graduate master students to comprehend the delivered materials in a self-learning manner as the materials, including the recorded online lectures and discussions, would remain available for them and thus, they can visit/revisit the course materials as needed. Second, the BL approach would relieve the graduate students from weekly traveling to the UAE University campus in Al Ain city, especially for those who live r work in Abu Dhabi city, Dubai city, and other remote areas. As this would save the students' time, effort, and money, it is believed that this BL transformation would promote the Architectural Engineering MSc program itself and increase students' enrolment in the course. Finally, for the course instructor, this BL transformation experience would be very essential for his professional self-development and the advancement of his academic career as a university professor because the transformation process would equip the instructor with many new teaching and learning tools that, without the BL transformation process, would not be essential to acquire.

3. Research Method: Exploring the Applied BL Transformation Process of ARCH 614 Master Course

The research followed a qualitative exploratory analysis and assessment method for the applied BL transformation process of ARCH 614 course as a pioneering case study. First, the face-to-face teaching delivery method was briefly explored. This was followed by explaining the adopted BL transformation strategy with a focus on the detailed applied procedures starting with the preparation actions until reaching the full gradual implementation. The research then presents and discusses the involved faculty feedback and the students' assessments of the BL transformation process for the course and its outcomes through the obtained Course Learning Outcomes (CLOs) assessment, the students' evaluation of the transformed course, and the qualitative interviews with the students. The research concludes with highlighting the pillars of the applied BL transformation process and recommending a set of actions to overcome the experienced problems and hence making the BL transformation more successfully generalized.

4. Exploring the Applied BL Transformation Process of the ARCH 614 Master Course

4.1 Conventional Teaching and Learning Strategy of ARCH 614 before the Transformation

Conventionally, the course content was delivered through weekly activities, where each week has its defined covered topics and their related course teaching activities as well as the adopted conventional face-to-face learning methods. The course weekly activities usually included reading, writing, presentation, class discussions and feedback. This conventional face-to-face delivery method is summarized in Table 1.

Table 1: The conventional weekly course activities for ARCH 614 course before BL transformation.

Week	Topics	Course Activities/Teaching & Learning Methods	Assessment Tools
1	Introduction to the Course	*Group:* Introductory in-class web research on main themes.	n/a
2	Defining Main Themes and Principles	*Group:* Home research + in-class presentation & discussion.	Assignment 1 Presentation
3	PART I: Theoretical concepts and principles: Textbook - Chapter 3	*Individual:* Home critical reading and in-class discussion.	Assignment 2
4	PART I: Theoretical concepts and principles: Textbook - Chapter 6	*Individual:* Home critical reading and in-class discussion.	Assignment 3
5	PART I: Theoretical concepts and principles: Textbook - Chapter 8	*Individual:* Home critical reading and in-class discussion.	Assignment 4

6	PART I: Theoretical concepts and principles: Textbook - Chapter 2	*Individual:* Home critical reading and in-class discussion.	Assignment 5
7	PART I: Theoretical concepts and principles: Textbook - Chapter 4	*Individual:* Home critical reading and in-class discussion.	Assignment 6
8, 9	Mid-term Research *(applying standard research format)*	*Mid-term Exam* Written Research	Mid-term Exam
10	PART II: Space Syntax as a planning tool: Introduction	*Lecture/ in-class discussion.*	n/a
11	PART II: Space Syntax as a planning tool: Using DepthmapX - Tutorials	*Lecture/ in-class discussion.*	n/a
12	PART II: Space Syntax as a planning tool: DepthmapX Analysis.	*Individual:* presentation and in-class discussion	Assignment 7a
13	PART II: Space Syntax as a planning tool: DepthmapX results.	*Individual:* presentation and in-class discussion	Assignment 7b
14,15	Final Term Research	*Final term Exam* Presentation for oral final exam + Written Research	Final-term Exam

4.2 Pre-transformation Logistics, Training and Support

Before starting the transformation process the needed logistics and infrastructure were well-prepared where the broadband high-speed Internet connection overall the whole UAE University campus was very reliable to deliver online teaching. The Blackboard Collaborate Ultra within the Blackboard platform was utilized to deliver the online teaching part of the BL course (Blackboard, 2023). Furthermore, all needed software packages for video recording of the online classes and class discussions, mainly Panopto (Panopto, 2023) and Camtasia Studio (TechSmith, 2023), were provided by the UAE University to all instructors involved in BL transformation. The University also provided a digital tablet to each faculty who is teaching a BL transformed course in Architectural Engineering undergraduate and graduate curriculum. On the other hand, technical support was provided as needed by the UAE University Helpdesk hotline and email.

On another front, the CETL developed and distributed a booklet entitled 'Blended Course Transformation Process' to introduce the involved faculty members to the procedures of the BL transformation process. The booklet contained four sections. First is the eligibility criteria of the BL transformation developers, second is the format and guidelines for developing the BL transformation proposal, third is the explained approval process, and fourth is the adopted policies and procedures for the BL transformation process. Despite these procedures, the booklet leaves a reasonable margin for innovation and creativity of BL course transformers (CETL, 2019). Furthermore, the CETL provided the involved faculty with two manuals, the Digital Teaching and Learning Manual: Definitions (CETL, 2021a) and the Digital Teaching and Learning Manual: Online/Blended Course Evaluation Rubric (CETL, 2021b). Both manuals contained important procedural and technical information and guidelines for the courses transformation developers to help them undertake the BL transformation for their courses successfully.

The CETL also organized a series of training workshops dedicated to the selected faculty members who submitted successful BL transformation proposals. These series started first with 4 workshops about BL process itself as follows: Introduction about BL, What does a Blended Course look like, Tools and Resources for Implementing Instructional Design within a Blended Course, and Managing the Blended Course with Blackboard. Then, the CETL organized a one-week workshop focused on Blackboard platform tools and applications within the BL process. This included the course structure, assessment and tests, students attendance and grading, online class and video recording.

4.3 The Applied BL Transformation Process

The following 6-point BL course transformation strategy was decided by the developed of the ARCH 614 course in the submitted proposal and was followed after getting the CETL approval on the BL transformation proposal, as detailed later. First, is utilizing *Synchronous* rather than *Asynchronous* class delivery in the online segment of the BL course to keep the advantage of both 'live interaction', albeit online, between the instructor and the students on the one hand, and to allow for distant online attendance on the other hand. This is specifically important for this course because it has an essential hands-on component involving critical analysis of exiting urban community

developments. So, keeping live interaction is exceptionally important even in the online classes. Second is recording the lectures and class discussions of the Synchronous online classes to give the students the chance to return to them, fully or partially, as needed while studying for the course. Third is giving more efficient and instant feedback to the students' urban designs during the hands-on application module of the course by the instructor's sketching using iPad and iPad Pencil instead of marking on the Smartboard in the conventional face-to-face delivery. As this is recorded, each student/group can check the feedback they received from the instructor again at any time convenient to them. Fourth is using distant live interaction tools such as Discussion Board to Interact with students, either individually or as groups, outside class time, as requested. Fifth is allowing the students to exchange thoughts and ideas through tools such as Wikis and Journals embedded in the used Blackboard platform. Finally, is availing the students and the instructor the chance to keep adding extra relevant materials (articles, videos, figures, websites, etc.), which they found relevant and could help the students understand more critically the tackled topics.

As for the BL course structure, the course has profoundly transformed from the conventional 100% face-to-face delivery mode to a 75% online content and only 25% face-to-face content. The experienced gradual transformation that started with 50% online delivery in its 1st phase of transformation in Fall 2019 semester to 75% in the 2nd phase of transformation in Fall 2020 semester, reaching to the 3rd and final phase of transformation with the 'compulsory'100% online delivery (due to Covid-19 Pandemic) in Spring 2021 semester. The whole BL transformation process was applied and monitored through the CETL. In Fall 2022, the CETL fully approved the BL transformation of the course based on the 75% online content and only 25% face-to-face content formula. The application process started with the involved instructor first applied a pre-proposal for the transformation strategy of the ARCH 614 course. Once approved the instructor submitted the full proposal of the BL course transformation. After getting feedback and final approval on the BL transformation proposal form the CETL, the instructor started applying the BL delivery strategy in the first semester by the end of which the instructor submitted a mid-report and got feedback form the CETL. The final report was submitted after the last semester of the BL gradual transformation of the course. Then the approval with some required amendments were communicated to the instructor by the CETL. As a successfully transformed course, the BL transformation process ended with the CETL archives the course and started the official procedures to obtain the University Curriculum Department approvals to continue offering it as a fully BL transformed course.

As for the overall ARCH 614 course specification, both the Course Description and the Course Learning Outcomes (CLOs) have been kept the same in the BL transformed version as they are in the conventional face-to-face delivery, as they are still appropriate in both course delivery methods. These BL Course Learning Outcomes (CLOs) were aligned with the Learning Outcomes (PLOs) of the Architectural Engineering MSc Program as shown in Table 2. For each of the four CLOs, the Proficiency level was defined as either D for Developed or M for Mastery, while Introductory level was excluded for this master level course.

Table 2: Mapping the CLOs with PLOs of the ARCH 614 BL transformed course*.

	PLO-1	PLO-2	PLO-3	PLO-4	PLO-5	PLO-6	PLO-7
CLO-1		D					
CLO-2	D	D					
CLO-3			M				
CLO-4						M	M

Proficiency level: "I = Introductory, D = Developed, or M = Mastery"

The ARCH 614 course content was changed and expanded to suit the BL pedagogy where students have more online reading, video, figures and other relevant multi-media and conventional study materials to help them in their study and research assignments. The online discussions took place in a Synchronous mode using Blackboard Collaborative Ultra (Blackboard, 2022), which normally availed more feedback from students as they had been already engaged in critical reviewing and writing about the discussed topics of the course. In addition, more examples and case studies about topics related to local context were presented to students, so they can have better decision-making ability when it comes to undertaking their group and/or individual research tasks. Besides the usual reading materials, students were provided with online recorded lectures as well as simulation software tutorials and instructions. As mentioned above, the door was opened for students to enrich the course with extra

materials through using collaborative Wikis, Discussion Boards and Journals, instead of only relying on the provided materials and feedback by the course instructor as it used to be in the conventional delivery of the course. For the online delivery, the instructor used a stylus of a sketching pad connected to the laptop, as a double screen, to be able to digitally comment on the students submitted work or to explain some issue related to the offered topics in some Units and Modules as detailed later (Figure 2).
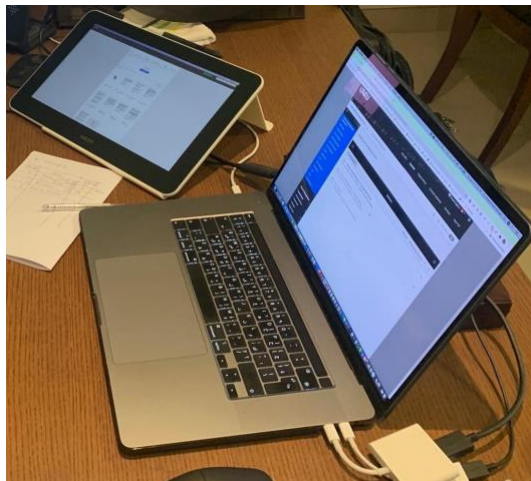
Figure 2. Digital feedback from the instructor via a sketching pad connected to the laptop as a double screen.

The adoption of the BL pedagogy has significantly affected the delivery of the course materials which were delivered in 4 Units instead of the 15 Weeks class activities in the conventional structure of the course (Table 3). Each of the 4 Units encompassed related Modules as follows:

Unit 1- Conceptual Framework, encompasses all the online and face-to-face classes in three Modules. Instead of only giving students lectures about the topics about the course subject (sustainable community development), a 'flipped classroom' method was applied for this Unit. The students were given the weekly assignments, in advance, where they were asked to critically review the assigned online materials uploaded on Blackboard platform including reading materials, videos, and references from official resources, to extract the relevant data from them. The students were given 1 Week to submit each of their weekly research assignments, followed by a Synchronous class where a collective discussion took place with students. Unlike the convectional classes in which students cannot usually recall part or all of in-class discussions, this Synchronous class was recorded and uploaded on Panopto. Based on these online recorded discussions, students were allowed to re-upload their written research assignments after amending them where they were given two attempts to submit these assignments on Blackboard. Ultimately, each student was able to better develop a comprehensive theoretical framework for the tackled principles. This Unit ended up with final research individually presented in a face-to-face class and to be graded as their mid-term exam (Table 3).

Table 3: The detailed class structure of the ARCH 614 BL transformed course showing Unites, Modules, delivery method, used BL tools, and assessment methods, as finally delivered and approved by the CETL.

Course Units	Teaching & Learning Activities (Modules)	Delivery method	Used BL Tools/Technology	Assessment Strategies and Methods
Unit 1- Conceptual Framework	Module 1 (W1): Introduction to the Main Themes - Introductory in-class web research on main themes. - In-class group discussion.	face-to-face	- List of websites.	NA
	Module 2 (W2): Defining Main Themes and Principles	online	- Synchronous class Lect. & Discussions with BB. Collaborate Ultra. - Record lect. & discussions on Panopto.	*Flipped Class* Assignment 1: - Submitted group work will be discussed in the Synchronous class.

	- Sustainable development, community, sustainable community development.		- BB Assignment.	
	Module 3a,b,c,d,e (W3-W9): Theoretical Concepts and Principles -Discourse about the principles and indicators of sustainable community development.			
	3a. Unsustainable settlements (W3) - Home critical review of assigned materials. - Online class discussion.	online	- Synchronous class with BB Collaborative Ultra. - PDF - Chapter 3. - Video Materials (YouTube, Daily Motion, etc.). - Record lect. & discussions on Panopto. - BB Assignment.	*Flipped Class* Assignment 2: - Critically read/watch the assigned material, prepare 2p. summarizing Principles and Indicators. - Submitted work will be discussed in the Synchronous class.
	3b. The Neighborhood as Ecosystem (W4) - Home critical review of assigned materials. - Online class discussion.	online	- Synchronous class with BB Collaborative Ultra. - PDF - Chapter 6. - Video Materials (YouTube, Daily Motion, etc.). - Record lect. & discussions on Panopto. - BB Assignment.	*Flipped Class* Assignment 3: - Critically read/watch the assigned material, prepare 2p. summarizing Principles and Indicators. - Submitted work will be discussed in the Synchronous class.
	3c. The Design of Neighbourhoods (W5) - Home critical review of assigned materials. - Online class discussion.	online	- Synchronous class with BB Collaborative Ultra. - PDF - Chapter 8. - Video Materials (YouTube, Daily Motion, etc.). - Record lect. & discussions on Panopto. - BB Assignment.	*Flipped Class* Assignment 4: - Critically read/watch the assigned material, prepare 2p. summarizing Principles and Indicators. - Submitted work will be discussed in the Synchronous class.
	3d. Eco-villages: Dream and Reality (W6) - Home critical review of assigned materials. - Online class discussion.	online	- Synchronous class with BB Collaborative Ultra. - PDF - Chapter 2. - Video Materials (YouTube, Daily Motion, etc.). - Record lect. & discussions on Panopto. - BB Assignment.	*Flipped Class* Assignment 5: - Critically read/watch the assigned material, prepare 2p. summarizing Principles and Indicators. - Submitted work will be discussed in the Synchronous class.
	3e. Do Neighborhoods Matter (W7) - Home critical review of assigned materials. - Online class discussion.	online	- Synchronous class with BB Collaborative Ultra. - PDF - Chapter 4. - Video Materials (YouTube, Daily Motion, etc.). - Record lect. & discussions on Panopto. - BB Assignment.	*Flipped Class* Assignment 6: - Critically read/watch the assigned material, prepare 2p. summarizing Principles and Indicators. - Submitted work will be discussed in the Synchronous class.
	Mid-Term Exam (W8-W9): - Draft Presentation in W8 and Final in W9. - In-class group discussion.	face-to-face	- BB Assignment (2 attempts).	Mid-Term Exam Presentation: - Presentation summarizing all the principles and indicators of sustainable community development.
Unit 2- Selected Case Study	Module 1 (W10): Criteria of selecting neighborhood Case Studies	online	- Collaborative Tools (Discussion Board, Wiki, Journal).	Assignment 7: - Submit the selected case study in DWG/DXF formats.

	- Discussing the criteria of selection including: location, accessibility, complete information.		- BB Assignment.	
Unit 3- Software Simulation (Space Syntax Application)	Module 1 (W11): Space Syntax Theory - Introductory lecture about Space Syntax theory.	face-to-face	- PDF Lecture Notes.	NA
	Module 2 (W12): DepthmapX Tutorial - Tutorial for using DepthmapX in Space Syntax analysis using tutorial (.dxf) files.	online	- Video/Audio-enabled screen recording using MacPro, then Convert Files using Camtasia Studio or similar. - Tutorial .dxf files. - Reading Materials	NA
	Module 3 (W13): DepthmapX Analysis of Case Studies - Discussion of Space Syntax spatial analysis of the case study.	online	- Synchronous class with BB Collaborative Ultra. - BB Assignment.	Assignment 8: - Submit (.graph) DepthmapX files for the Space Syntax spatial analysis of the case study.
Unit 4- Final Case Study Assessment	Module 1 (W14): Selected Principles and Indicators for Analysis - Discussion about selected principles and indicators.	online	- Synchronous class with BB Collaborative Ultra. - Collaborative Tools (Discussion Board, Wiki, Journal). - Record lect. & discussions on Panopto.	NA
	Module 2 (W15): Final Case Study Analysis - Final term Presentation and in-class group discussion.	face-to-face	- BB Assignment (2 attempts).	Final term presentation: - Presentation for the assessment of the selected principles and indicators of sustainable community development.

Unit 2- Selected Case Study, this 1 Week Unit was delivered online to help students better adhere to the selection criteria for their case studies through direct online contact with the course instructor.

Unit 3- Software Simulation (Space Syntax Application), is dedicated to the training on Space Syntax DepthmapX software, which is developed and provided free for academic use by University College London (UCL) (UCL, 2023), to assess the selected case studies for local urban communities. This Unit has three Modules. While the first Module was planned as a face-to-face introduction to the software application, Module 2 was an online tutorial through voice-enabled screen recording using the instructor's own laptop. But because the output video would be too large, the instructor converted the produced video files from the produced default (.mov) format to the compressed (.mp4) format using Camtasia Studio (TechSmith, 2023). Previously, this tutorial was a face-to-face tutorial only and many students used to come back with several questions because they missed some parts of the in-class tutorial or just simply forgot it! With the recorded tutorials, they can repeat the instructor's explanation of the usage of the software as much as they wish. The third Module was delivered online as a Synchronous class to assure that the students have applied the simulation software successfully om their assigned case studies.

Unit 4- Final Case Study Assessment, each student conducted an assessment for his/her selected case study of a local urban community utilizing the theoretically developed conceptual framework and DepthmapX as a quantitative assessment tool. The online Module 1 replaced the traditional in-class discussion about the principles and indicators that were used in analyzing the selected case studies. Again, students could revisit the Panopto video recording about these selected principles for final analysis. The final research was digitally submitted and checked against plagiarism (using Blackboard SafeAssign tool), while the final presentation took place in a face-to-face class, followed by a manual grading for both of the Final Report and Presentation on the Blackboard Grade Center as the Final Exam. Figures 3, 4 and 5 below illustrate some screen shoots of the Units components, software application, and students grading with feedback on Blackboard.
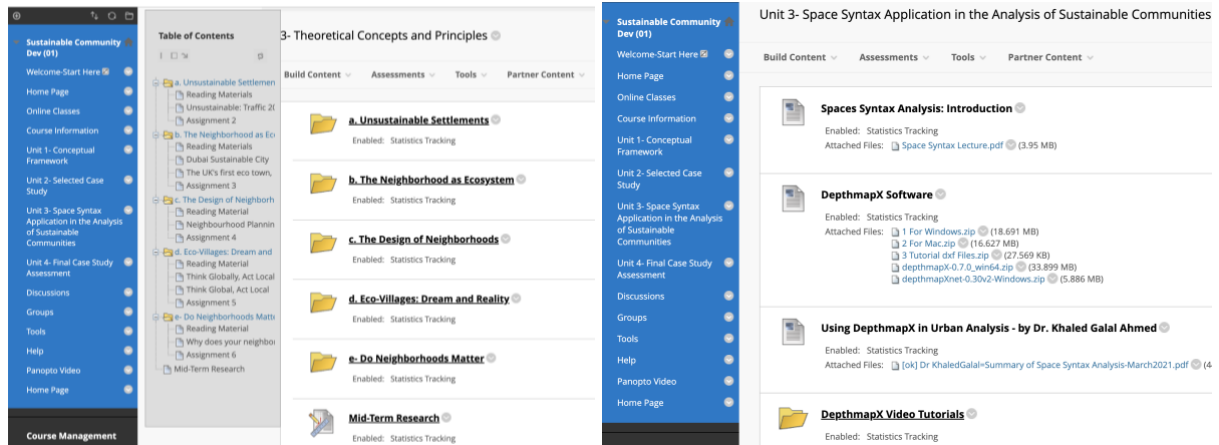
Figure 3a,b: a) Main structure of the theoretical Unit 1: Conceptual Framework, b) Unit 3 Structure.
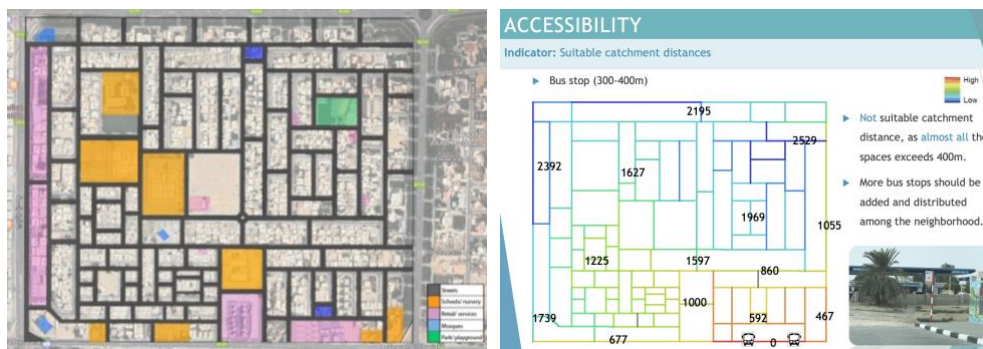
Figure 4: Example of the application of the Space Syntax Analysis Tool in Students Research.
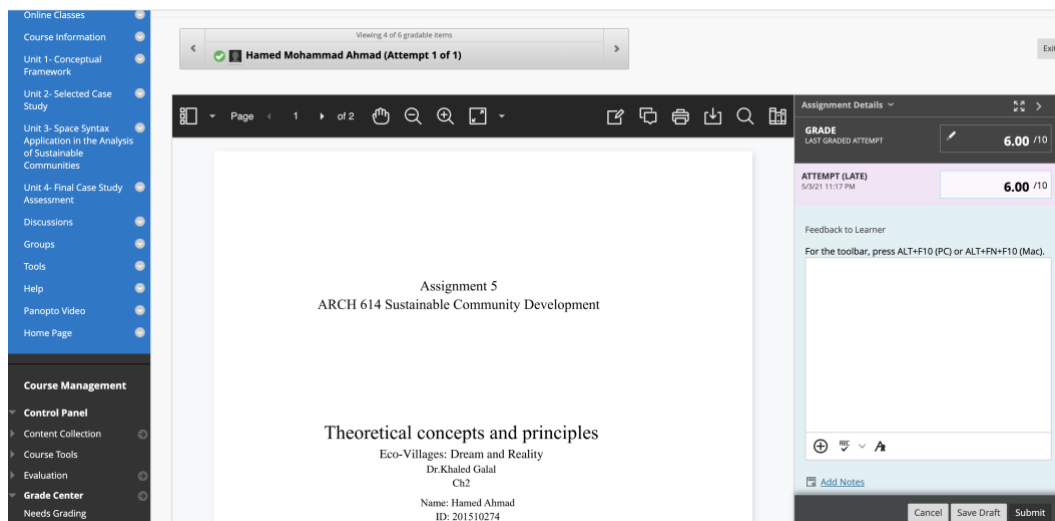
Figure 5: Grading and giving feedback to students through Blackboard platform.

5. Research Results: Assessment of the Outcomes of the ARCH 614 Course Transformation Process

5.1 Feedback from the Instructor

The students benefited from the transformed course in multiple ways. First, they had much more online resources such as videos, reading materials, and documents that encouraged them to critically think about the addressed topics and come up with their own written thoughts. They also had the chance to revisit the video recorded online

Synchronous sessions on Blackboard Collaborative Ultra and Panopto where they did not miss any important discussions that let them improve their written research. Furthermore, students worked according to their own pace in the Screen Recorded videos especially for the utilized software tutorial. This made them overcome several problems while applying the software on their own selected case studies. On another front, the students were given the chance to exchange ideas and thoughts among each other using the Blackboard's Discussion Boards and Wikis. They had the chance to create their own Journals that allowed them to share extra materials with each other and with the Instructor. Finally, as the majority of the registered students in this ARCH 614 MSc course were distantly residing/working from the UAEU campus in Al Ain, they significantly saved their travel effort, time, and the expensive petrol cost.

On the other hand, the mid-term and final research work (exams) were held face-to-face to be more convenient and transparent. The reported difficulty was a technical one about the limited storage space on the Blackboard platform that necessitated the instructor to move all the recorded videos from where they were originally stored on the Blackboard Collaborate Ultra to Panopto which consumed time and effort. Also, the instructor was asked to archive the fully transformed course on a local digital storage device as it cannot be stored on Blackboard for more than one year.

5.2 Assessment of the Attainment of the CLOs of the ARCH 614 Course

Table 4 illustrates the various assessment tools used to assess the attainment of each of the 4 CLOs of the course. These tools included various research-related weekly assignments (Cs) besides the Mid-term research presentation (M) and the Final term research presentation and written paper (F). The table also shows the allocated weights assigned to each assessment tool and the due submission dates. Meanwhile, Table 5 shows also the Indirect assessment tools for the 4 CLOs that include both the student and instructor surveys.

Table 4: CLOs Attainment Measuring Tools.

Assessment Methods	Description	CLOs	Grade Weight %	Due Date
C1	Research Field Assignment	1	5	Week 2
C2	Literature Review Assignment	2	5	Week 3
C3	Literature Review Assignment	1,3	5	Week 4
C4	Literature Review Assignment	1,3	5	Week 5
C5	Literature Review Assignment	2,3	5	Week 6
C6	Literature Review Assignment	1,3	5	Week 7
C7a,b	Research Method Assignment	3,4	10	Weeks 12,13
C8	Individual Class Participation	1,2,3,4	10	All Weeks
M	Presentation Research	1,2	20	Week 8,9
F	Presentation + Written Research	2,3,4	30	Week 14,15,16

Table 5: Direct and Indirect Assessment Tools.

	Direct Assessment Tools			Indirect Assessment Tools	
	Assignments	Midterm Research	Final term Research	Student Survey (SO)	Instructor Survey (IO)
CLO-1	✓	✓		✓	✓
CLO-2	✓	✓	✓	✓	✓
CLO-3	✓		✓	✓	✓
CLO-4	✓		✓	✓	✓

After applying these direct and indirect assessment tools, the final course assessment results were obtained. Figure 6 shows the summary of this results report which obviously prove that the students have evidently attained the ARCH 614 CLOs as they far exceed the benchmark of "70% of enrolled students score 80% or higher in summative assessment tools (Direct and Indirect)".

Figure 6: Assessment Summary Report for the CLOs of ARCH 614 Course, as per the attained grades.

5.3 Measuring Students Satisfaction

5.3.1 Course Surveys

On another front, the student's evaluation related to the delivered course in its third and final delivery semester indicated the success of the delivery of the applied BL method and tools as shown on Table 6 below.

Table 6: Students official evaluation of the ARCH 614 overall course delivery.

[Course Comparative Analysis]

Question	Course	Department (Architectural Engineering)	College (Engineering)	University
	Mean	Mean	Mean	Mean
The course material was effectively organized.	5.00	4.55	4.38	4.47
The course activities and assignments were helpful in learning.	5.00	4.40	4.26	4.35
The course workload was acceptable.	5.00	4.25	4.09	4.18
The course content addressed real-life experiences.	5.00	4.53	4.33	4.37
The course helped me to improve my thinking skills.	5.00	4.52	4.28	4.34
The course added to my knowledge.	5.00	4.56	4.43	4.47
Overall, the course was of high quality.	5.00	4.59	4.27	4.38
Overall	5.00	4.48	4.29	4.37

5.3.2 Students Qualitative Feedback about the BL Transformation Process of ARCH 614 Course

Table 7 illustrates the open-ended questions of the brief questionnaire administered with the 8 registered students in the ARCH 614 course by the end of the semester and their feedback on each question.

Table 7: The qualitative response of the registered students to the open-ended questions of the brief face-to-face administered questionnaire.

	Q1: What are the difficulties that faced you while experiencing the BL delivery?	Q2: Do you prefer online class (BB Collaborative Ultra) at the same weekly class time or recorded lectures with later interaction?	Q3: All in all, to what extent do you think that the BL utilization helped you in your course	Q4: What do you recommend for benefiting from using the BL in the future ARCH 614 Classes?
Student 1	The need to have a strong WIFI connection at our homes to enable it to work easily and clearly. It would be helpful to have the ability of sharing the screen with others.	Online Class (Synchronous)	Very Much.	Invite people from the industry or from outside the university to be engaged in the online class discussions.
Student 2	Sometimes due to weak Wi-Fi signal at my house the connection was slow at first but then it gets better.	Online Class (Synchronous)	Very Much.	Just continue using BL, Yes.
Student 3	None.	Online Class (Synchronous)	Very Much.	Nothing. Everything is fine with online classes this semester.

Student 4	None.	Both Online Class (Synchronous) and Video Recorded Lecture (Asynchronous).	Very Much.	Activating the course project and applications both on CityCAD +2.8 and Space Syntax. Thanks.
Student 5	No issues or difficulties, it was very useful specially for working students.	Video Recorded Lecture (Asynchronous).	Very Much.	Having the same class structure is very useful.
Student 6	Everything was fine.	Online Class (Synchronous)	Very Much.	It is easier for students that are not from Al Ain city.
Student 7	None.	Video Recorded Lecture (Asynchronous).	Very Much.	Nothing more!
Student 8	Sometimes the quality of sound is not good.	Online Class (Synchronous)	Very Much.	Enhancing the quality of sound.

The responses of the interviewed students revealed that the majority of them supports the Synchronous delivery method over the Asynchronous one. All of them appreciated the benefits they gained through the BL delivery of the course. As noticed, some students faced some little technical problems mainly due to weak internet connections at their homes and some malfunctioning devices especially mics. Most of these problems have been immediately solved by the students themselves.

6. Discussion and Conclusions

The research analytically explored the applied comprehensive BL transformation process of a non-lab based Master of Architectural Engineering course. The first important outcome of this exploratory analysis is that there should be a strong motivation for undertaking the BL transformation process for both students and instructor, as well as the whole program. In the presented case the motivation for the BL transformation of the graduate course ARCH 614 was fourfold, first for students it would give them the chance to comprehend the delivered materials in a self-learning manner. Second, is that the BL course would release the students from the need to travel every week to the UAE University campus in Al Ain city. Third, it would promote the Master program itself and increase the students' enrolment in the course. Fourth, for the instructor who developed the course, the BL transformation experience would help him acquire many teaching and learning tools that would benefit him in his academic career as a university professor.

The second outcome is that the BL transformation process of any course needs to be inclusive and comprehensive where the higher education institution, the instructor, and the students are all contributing to the success of it. The meaningful guidance either through the provided manuals and guidelines or the dedicated training sessions as well as the technical support, all helped the instructor tremendously in gradually accomplishing the full transformation of the course in a satisfactory manner.

The third important outcome is that the BL transformation strategy should appropriately fit the transformed course CLOs and its nature. In the explored ARCH 614 non-lab based graduate course the synchronous delivery method was an efficient strategy as defined from the beginning. This is attributed to the fact that it kept a vivid interaction with students while recording the lectures and the class discussions during the synchronous sessions added to this success by enabling the students to go back to these recordings at their own preferred time. Furthermore, replacing the Weekly Class Activities with Units and Modules, and adding more self-learning materials were contributors to the success of the BL transformed course. Also, the various applied assessment tools allowed for collecting meaningful feedback about the applied BL transformation process and hence readjust the process accordingly.
So, in summary, the main strategy points of the BL transformation process of the non-lab based courses should be as follows:
- The delivery mode to be around 25% face-to-face and 75% online.
- The online Modules to be delivered as a Synchronous class mode.
- The online Modules to be recorded and uploaded on Panopto.
- Live feedback and interaction with students through digital sketching tools is essential in the success of the BL of this specific and other similar Architectural Engineering courses.
- Allowing the students to add extra learning martials (case studies, videos, photos, etc.) to the course is

fundamental in engaging them appropriately and in creating more critical thinking discussions in the class.

- Distant interaction among students themselves on the one hand, and the students and their instructor on the other hand, is encouraged through related various tools on Blackboard platform such as Wikis, Journals and Discussion Board.

The success of the BL transformation of this non-lab based course indicates the possibility of the wider successful applicability for all non-lab based graduate courses especially in Architecture Engineering MSc curriculum especially with the efficient infrastructure and continuous technical support provided by the UAE University. The main technical problem was the limited cloud storage space for the recordings of the synchronous online classes on the Blackboard platform and the limited cloud storage capacity for Blackboard itself, where the whole course would be removed after one year to an archived local storage at the UAE University.

Such success of the applied BL transformation process is expected to encourage more graduate students to apply for the Architectural Engineering MSc Program, especially when more courses of the program will be flexibly offered as BL courses, because this would be more convenient for them given that most of the applicants are working in industry and hence time flexibility is very essential for them. Finally, one should bear in mind that the presented experience of BL transformation here was undertaken in a higher education institution with strong financial capabilities, so replicating it in other higher education institutions should be carefully studied in terms of the costly logistics of technical infrastructure, etc.

Acknowledgments

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Effects of Mastery 5Es Constructivist Teaching Approach on Secondary School Students' Achievement in Chemistry in Rongai Sub-County, Nakuru County, Kenya

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Abstract
Analysis of chemistry performance in Kenya since 2013 indicates a trend of below average performance. This may be attributed to the conventional teaching methods that are mainly teacher centered. Mastery 5Es constructivist teaching approach (M5EsA) may help address the problem of poor performance in chemistry though its effects have not been determined. This study investigated the effects of using M5EsA on students' achievement in chemistry in Rongai sub-county. Solomon Four Non-Equivalent Control Group Design under Quasi experimental research was used. Sample size of 303 students. Chemistry Achievement Test (CAT) with reliability of 0.701 was used to collect data. Hypothesis was tested using t-Test, ANOVA and ANCOVA at critical alpha value of 0.05. The findings indicated that M5EsA led to increased students' achievement in Chemistry.

Keywords: Mastery 5Es Constructivist Learning Approach, Secondary School Students', Achievement in Chemistry

1. Introduction

Chemistry is one of the branches of science that is taught at secondary school level in Kenya. It plays a critical role in the production of human capital which is the most important resource for any nation (Aniodoh & Egbo, 2013). The quality of human resource in the field of science for instance doctors, engineers, scientists, science teacher educators and science teachers, is directly pegged on the quality of science education offered. Highly qualified personnel equipped with scientific, technical and intellectual capabilities have a great impact in propelling a nation to the desired levels of development. Chemistry education equips learners with scientific knowledge, skills and attitudes towards science and technology, therefore an essential tool for economic and technological development of any society (Abungu, 2014).

According to Wachanga (2002); Bakhshi and Rarh (2012), Chemistry occupies a central position among science subjects because its knowledge helps in the learning of other subjects. For instance, the knowledge of chemicals and chemical processes aids in the understanding of various physical and biological phenomena (Bakhshi & Rarh). Chemistry also plays an important role in industrial and technological development of a nation. According to Wachanga (2005) and Royal Society of Chemistry [RSC] (2015), Chemistry has played important role in the field of medicine especially in drug discovery and pharmaceutical productivity. They further noted that chemistry knowledge has led to reduced dependence on natural material, increased efficiency in industrial processes, created efficient electronics and has enabled zero emissions of energy production. Chemistry also inculcates scientific attitudes and thought in the learners and prepares them for further vocations and specialization at higher levels of learning (Wachanga, 2005)

Although Chemistry is important for scientific and technological development and also its importance in the learning of the Physics and Biology, the trend of the students' achievement in the subject at the Kenya Certificate of Secondary Education (KCSE) level is below average. Table 1 indicates the performance of Chemistry at national level in KCSE since 2013.

Table 1: K.C.S.E National Students' Achievement in Chemistry by Gender (2013-2020)

Year	2013	2014	2015	2016	2017	2018	2019	2020
Overall % Mean score	24.57	32.55	34.36	23.71	24.05	26.88	26.09	22.51

Source: Kenya National Examination Council (KNEC), 2018 report

Given that the expected maximum mean score is 100%, the results shown in Table 1 indicates below average percentage for the years 2013 to 2020. The trend of poor students' achievement in Chemistry at KCSE level is not only exhibited at the national level but also in Rongai Sub-County. Table 2 indicates the performance of students in chemistry in Rongai sub-county since 2013.

Table 2: Rongai Sub-County KCSE Mean Grades in Science Subjects (2013-2021)

Subject	2013	2014	2015	2016	2017	2018	2019	2020	2021
Chemistry	2.67	3.21	3.79	4.71	4.68	3.98	4.20	4.19	4.29

Source: Rongai Sub-County Education Office, 2021

The indicated performance in chemistry all sciences in Table 2 is below average since the maximum mean grade according to Kenya National Examination Council (KNEC) is 12 points. The below average achievement in Chemistry by students in KCSE both at the National and Rongai Sub- County levels as indicated in Tables 1 and 2 may be attributed to inappropriate and ineffective teaching approaches employed by teachers in teaching Chemistry. This among other factors may have led to poor achievement of learners in chemistry. Teaching approaches employed by teachers in classroom may affect students' academic achievement (Wambugu, 2006; Galaj, 2011).

The teaching of Chemistry in Kenya has continued to be teacher-centered thus has contributed to poor achievement in the subject by learners (Wachanga, 2002; Keter, 2017). This is because learners are not engaged in the teaching learning process thus leading to lack of understanding of chemistry concepts which is therefore reflected in the poor achievement. Therefore, there is need for the teachers to employ teaching approaches that are learner-centered and constructivist-based because such approaches would not only capture learner's interest, enhance learners' participation and understanding, but also would inculcate in them critical thinking skills that would enable them solve any problem encountered in chemistry thus leading to higher achievement in the subject.

Mastery Learning refers to a category of instructional methods which establishes a level of performance that all students must master before moving on to the next unit (Slavin, 1987). 5Es learning cycle model is a constructivist-based approach to learning in which students in small groups are given opportunity to learn through five phases

denoted as 5Es (By bee, 2014). These phases are: Engage. Explore, Explain, Elaborate and Evaluate. The first phase Engage helps students to make connections between past and present learning experiences and capture their interest in the lesson. This makes the learners to be thoughtfully involved in the concept, process, or skill to be learned (Mwanda, 2016). The second phase Exploration gives learners time and opportunities to work with materials provided in different ways. Hands-on experiences are provided for the students express their current ideas and demonstrate their abilities as they try to clarify puzzling elements of the engage phase (By bee, 2014). The third phase Explain, a phase in which the concepts, practices, and abilities with which students were originally engaged and subsequently explored are made clear and comprehensible (By bee, 2014). The teacher directs students' attention to key aspects of the prior phases and first asks students for their explanations then using students' explanations and experiences, the teacher introduces scientific or technological concepts briefly and explicitly (By bee, Taylor, Gardner, Scotter, Powell, Westbrook, and Land es, 2006). The fourth phase Elaborate is a phase in which students are involved in learning experiences that extend, expand, and enrich the concepts and abilities developed in the prior phases thereby transferring the concepts and abilities to related, but new situations (By bee, 2014). Finally, the fifth phase is Evaluation, addresses the issue of assessment. It goes on throughout the learning cycle and helps is determining the effectiveness of each phase throughout the learning process.

The current study is informed by the results obtained from mastery learning and the inquiry based 5Es learning cycle studies. M5EsA being a hybrid of the two teaching approaches, M5EsA may reap the benefits associated with each approach. M5EsA involved breaking down of subject matter into units with objectives to be mastered by the students. Students were given quizzes at the end of each unit where they must demonstrate mastery of a minimum score of 80%, before moving on to new material (Kulik, Kulik & Banger t-Drowns, 1990). Students who did not achieve mastery received remediation through tutoring, peer monitoring, small group discussions, or additional assignments (Aggarwal, 2004). Additional time for learning was given for those requiring remediation and the cycle of studying and testing continued until mastery was achieved. Learning of the units was guided through 5Es learning cycle whereby students in small groups in each lesson went through activities sequenced in the five phases. Therefore, students got opportunities to create their understanding together.

The study focused on the topic "Effect of electric current on substances" in chemistry. This is a topic taught in Form Two in Kenyan secondary schools. The topic forms the foundation of the Electrochemistry and has been identified to pose problems to students (Yilmaz, Erdem & Morgil, 2002; Garnett & Treagust, 1992) yet it plays important role in different types of curricula and in everyday life (Karamustafaoglu, 2015). It is also noted in KNEC council report (KNEC, 2018) that Electrochemistry question 3 in Chemistry paper 1 (233/1) was poorly performed since learners could not identify and state the uses of the different parts of a dry cell. Therefore, there is need to build a good understanding of the topic by the students. This study sort to find out the effects of using M5EsA on student's achievement in the topic. The results obtained would then be generalized to chemistry.

1.2 Objective of the Study

This study was guided by the following specific objective;
To determine the effects of using mastery 5Es constructivist teaching approach on students' academic achievement in Chemistry.

1.3 Hypothesis of the Study

This study was guided by the following hypothesis;
There is no statistically significant difference in students' achievement in Chemistry between students who are taught using M5EsA and those who are taught using CTM.

1.4 Conceptual Framework

This study has been conceptualized with constructivist-based M5EsA approach and Conventional Teaching Methods (CTM) as the main independent variables while students' chemistry achievement in Chemistry forms the dependent variable. In an ideal situation the independent variables have direct influences on the dependent

variables. However, in real situations factors such as; learners' characteristics (gender, entry behavior and age), type of school (resources), and teacher's training and experience may interfere with the relationship between independent and dependent variables if they are not controlled. These factors form the intervening variables. These intervening variables should be controlled so that there will be no interaction effect of these variables and the independent variables on the dependent variables.

The Figure 1 illustrates how the intervening variables affect the relationship between the independent variables and the dependent variables.

| Independent Variables | Intervening Variables | Dependent variables |
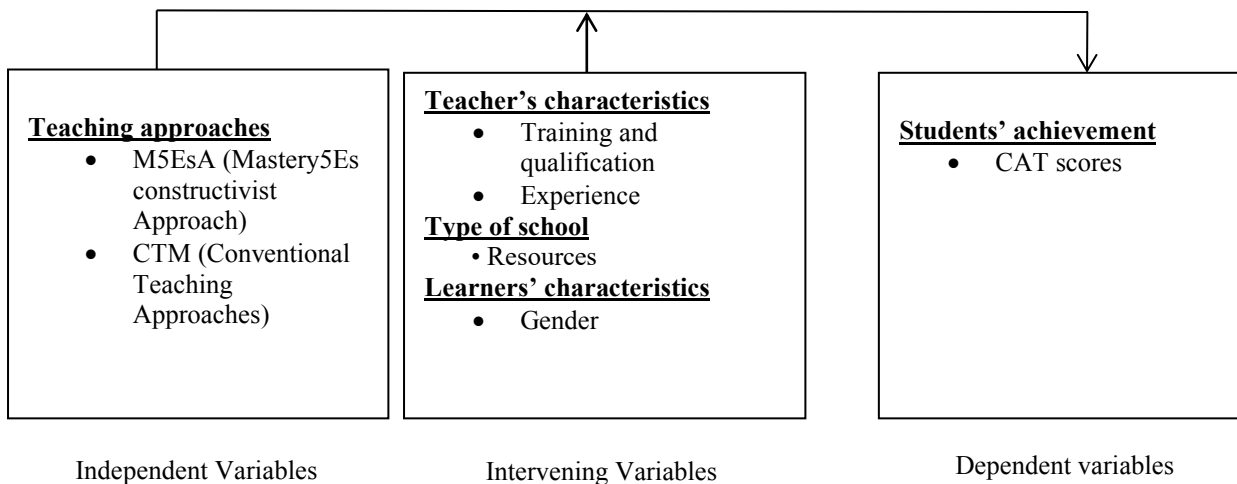
Figure 1: Conceptual Framework

This study was carried out in public secondary schools because teachers in public secondary schools are all trained and qualified. Only schools where teachers have a teaching experience of above three years were selected for the study. Therefore, teachers' characteristics were controlled. Chemistry teachers involved in the experimental groups were trained by the researcher on the M5EsA and they were also guided by a manual that was provided by the researcher; this minimized teacher variability effect on the study. Gender could be controlled by involving boys' and girls' schools, however in this study effect of gender was studied rather than being controlled. Therefore, co-educational schools were involved in this study. Sub-County co-educational schools with similar characteristics were selected so as to minimize the effect of school characteristics such as resources on the experimental results. Learners' entry behavior was controlled since learners enrolled into Sub-County schools have approximately similar academic achievement.

2. Methodology

2.1 Research Design

Quasi-experimental research was used in this study in which Solomon's Four Non-Equivalent Control Group Design was used. The sampling unit used in this research was classes since there was no random assignment of students to the experimental and control groups due to the fact that secondary school classes once constituted exists as intact groups and authorities do not normally allow such classes to be broken up and reconstituted for research purposes (Gall, Gall & Borg, 2007, Fraenkel &Wallen, 2000). To avoid interaction of students from different groups that may contaminate the results of the study, one class from a school constituted one group hence four schools which are far apart were selected purposively in this study. The schools were randomly assigned to the control and treatment groups to control for selection and interaction (Ary, Jacobs & Razavien, 1979). The conditions under which the instruments were administered were kept as similar as possible across the schools in order to control instrumentation. This was done by ensuring that the topic was covered and administration of the instruments across the four schools at the same time. The groups were organized as follows; E1 which received a pre-test, treatment (X), and then post-test, C1 which received a pre-test and post-test. On the other, E2 were not

given a pre-test, but treatment(X) and post-test were given while C2 was not given a pre-test, no treatment but a post-test was given. E1 and E2 were the experimental thus were taught using M5EsA while C1 and C2 were taught using CTM since they were the control groups. This design is represented in Figure 2.

E1 O_1 X O_2

…………………………………………………

C1 O_3 _ O_4

…………………………………………………

E2   _   X O_5

…………………………………………………

C2   _   _ O_6

Figure 2: Solomon Four Non- Equivalent Control Group Research Design.
Source: Fraenkel and Wallen (2000 p.291)

2.2 Population of the Study

The target population involved all the students in public secondary schools in Rongai Sub-County. The Sub-County was selected by the researcher because there is limited evidence of studies carried out to investigate on the effects of M5EsA on students' academic achievement in chemistry in the Sub-County. The accessible population was the form two students in public Sub-County co-educational schools in Rongai Sub-County. This accessible population constituted the sample frame from which the samples for the research were drawn. Co-educational schools were selected so as allow the researcher investigate the effect of the treatment on boys and girls learning under similar conditions. Form two students were involved because the selected topic (Effect of electric current on substances) is taught at this level in Kenyan secondary schools.

2.3 Sampling Procedures and Sample size

The unit of sampling in this study was secondary school rather than individual learners because secondary schools operate as intact groups (Gall et al, 2007). The list of the Sub-County co-educational schools constituted the sampling frame. The researcher after obtaining permission from NACOSTI, Nakuru county and Rongai Sub-County educational offices visited co-educational schools to ascertain that they were suitable for research, that is, researcher established that the schools selected had functional laboratories in which learners carried out the suggested experiments and that there were trained teachers with a teaching experience of a minimum of three years. To minimize experimental contamination (Fraenkel & Wallen, 2000), purposive and stratified sampling techniques were used to select four public Sub-County co-educational secondary schools with trained teachers with a teaching experience of three years and above. Also, schools with almost similar characteristics and resources but not close to each other were considered. The four schools formed the sample size and were randomly assigned to the treatment and control groups. Schools that had more than one form two streams, all the streams were taught using similar method of teaching because of ethical reasons (Wambugu & Changeiywo, 2006). Random sampling technique was then be used to pick one stream whose data was used for analysis. Sample size for the study was 303 students. This was constituted by the total number of students in the selected classes in the four schools.

2.4 Instrumentation

Chemistry Achievement Test (CAT)was done in one hour. It measured the learner's acquired and mastered content. This CAT was constructed by the researcher using Secondary Chemistry students' Book 2 (2009), Secondary Chemistry Book Two teachers' guide (2009) published by the Kenya Literature Bureau (KLB), Secondary Chemistry Book 2 by Longhorn publishers and items from KCSE past papers. The test was administered as CAT 1 before the treatment. The items in the CAT1 were rearranged and administered as CAT 2 after the treatment. The CAT contained 12 items which measured concepts and principles in the sub-topics of conductors and non-conductors, electrolytes and non-electrolytes, electrolysis, and applications of electrolysis with scores allocated as indicated in Table 3.

Table 3: CAT scores allocation per sub-topic

Sub-topic	Number of items	Scores per sub-topic	Maximum scores	Minimum Scores
Conductors and Non-conductors	4	10	10	0
Electrolytes and Non-electrolytes	4	14	14	0
Electrolysis	3	24	24	0
Application of electrolysis	1	2	2	0
TOTAL	12	50	50	0

The minimum and maximum score of the CAT were 0 and 50 marks respectively. The items in CAT measured the different levels of learning in the cognitive domain such as knowledge, comprehension, analysis, synthesis and evaluation. The items were scored dichotomously as either correct or wrong. Validity of the CAT was ascertained by three experts in the Department of Curriculum, Instruction and Educational Management of Egerton University. Comments from these experts were used to improve the instruments.

Reliability of CAT was estimated after a pilot study was conducted in a co-educational school in Njoro sub-county with similar characteristics to those in which the study was conducted. Reliability coefficient of CAT was calculated using Kuder-Richardson formula 20 (KR-20). This method is suitable when test items can be scored as correct or incorrect and are of different difficulty level (Gronlund, 1993). Reliability coefficients of 0.701 was obtained. Thus, the its' reliability coefficient was accepted because according to Fraenkel and Wallen (2000) a reliability coefficient of alpha value 0.7 and above is considered suitable to make possible group predictions that are sufficiently accurate.

2.5 Data Collection

The researcher obtained an ethical clearance the Egerton University Research Ethics Committee secretariat. This enabled the researcher obtain an introductory letter from Egerton University Graduate School through which a research permit from the National Commission for Science, Technology and Innovation (NACOSTI) was obtained. The researcher sort permission also from the Rongai Sub-County Director of Education. The principals and chemistry teachers of the participating schools were requested by the researcher to allow their schools to be involved in the study and their co-operation was appreciated. The researcher trained chemistry teachers in the experimental schools on the expectations and procedures of M5EsA and gave them an instructional manual specifically designed for the topic "Effects of electric current on substances". To ensure that the content was covered uniformly by all the groups, teachers in the four groups adopted a common scheme of work developed by the researcher. Before the treatment, data was collected using CAT1 as pre-test that was administered to the experimental group I and the Control group I. The students in the experimental group I and Experimental Group II were taught using M5EsA while those in the control group I and Control group II were taught using CTM. After six weeks the post-test was administered to all the groups as CAT2. Post-test provided data for all groups after the administration of the treatment.

2.6 Data Analysis

CAT generated quantitative data which was analyzed with the help of Statistical Packages for Social Science (SPSS) computer program. Pre-test analysis was done using t-Tests to determine if there are differences in the students' achievement between the two groups before administration of the treatment. t-Test was used to test differences between two means because of its superior quality in detecting differences between two means (Gall et al, 2007). ANOVA was used to analyze whether there were significant differences in the mean scores of the Groups' post-test results. ANCOVA was also used so as to take care of any initial differences in the treatment and control groups. It reduces experimental error by statistical rather than by experimental procedure (Gall et al, 2007). KCPE scores of the participants were used as a co-variate. To make reliable inferences from the data, all statistical tests were tested at threshold alpha values of 0.05.

3. Results and Discussion

3.1 Pre-test Results

Analysis of the pre-test enabled the researcher to assess the homogeneity of the groups before the administration of the treatment to the experimental groups as recommended by Borg and Gall (2006) and Wiersman and Jurs (2005). To find out whether there was significant difference in achievement of the two groups, descriptive statistics and an independent sample t-Test were carried out on CAT1. The results obtained on CAT1 analysis are as recorded in Table 4.

Table 4: t-Test results of Students' Mean Scores on CAT 1

Teaching approach	n	Mean	SD	df	t-value	p-value
E_1	67	1.40	1.326	148	.123	.902
C_1	83	1.37	1.552			

The results in Table 4 reveal that the mean score of the experimental group E_1 was higher than that of the control group C_1, though the difference between the means of the two groups was not statistically significant at the 0.05 level, t (148) = .123, *p* =.902. Therefore, the level of achievement of the learners in chemistry before the administration of the treatment was similar, the groups had similar entry behavior thus were suitable for the study.

3.2 Effects of M5EsA on Students' Achievement

The objective of this study was to determine whether there was a significant difference in students' achievement in chemistry when taught using M5EsA and CTM. To achieve this objective analysis of post-test scores on CAT2 was carried out using descriptive and one-way ANOVA statistical techniques. Table 5 shows the results obtained on the mean scores and the standard deviations of the four groups.

Table 5: Summary of CAT2 Mean Scores and Standard Deviations

Teaching approach	N	Mean	SD
E_1	67	22.9403	10.4923
C_1	83	12.4337	10.2888
E_2	79	19.9367	9.6521
C_2	74	11.9865	8.8045

The results indicate that the highest mean score was attained by E_1 (22.94) followed by E_2 (19.94) then C_1 (12.43) and finally C_2(11.98). This implies that students in the experimental groups had higher scores on CAT2 compared to those students in the control groups who had lower scores. In order to the determine whether the noted difference in achievement in Table 4 was statistically significant one-way ANOVA statistical technique was used to analyze the post-test scores on CAT2. The results obtained were as shown in Table 6.

Table 6: One-way ANOVA Post- Test Scores Results of CAT2 Students' Scores

	Sum of squares	df	Mean square	F	Sig
Between Groups	6588.658	3	2196.219	22.744	.000
Within groups	28871.817	299	96.561		
Total	35460.475	302			

The results in Table 6 show that the difference in the mean scores among the four groups was significant at the .05 level, *F (3,299)* = 22.744 p = .000. To find out where the differences existed, *Tukey post-hoc* analysis was carried out. Tukey post-hoc analysis was preferred because of the unequal number of students in the groups. The results of this analysis are presented in Table 7.

Table 7: Tukey post-hoc Pair-Wise CAT2 Groups' Comparisons

(I)Teaching approach	(J)Teaching approach	Mean Difference(I-J)	Std. Error	Sig.
E_1	C_1	10.50656*	1.61388	.000
	E_2	3.00359	1.63203	.257
	C_2	10.95381*	1.65713	.000
C_1	E_1	-10.50656*	1.61388	.000
	E_2	-7.50297*	1.54457	.000
	C_2	.44725	1.57107	.992
E_2	E_1	-3.00359	1.63203	.257
	C_1	7.50297*	1.54457	.000
	C_2	7.95022*	1.58971	.000
C_2	E_1	-10.95381*	1.65713	.000
	C_1	-.44725	1.57107	.992
	E_2	-7.95022*	1.58971	.000

Table 7 reveals that there was statistically significant difference in the means of post-test CAT2 scores between the pairs of groups E_1 and C_1, E_1 and C_2, E_2 and C_1 and E_2 and C_2 at 0.05 level of significance. The significant difference noted was in favor of the experimental groups. However, there was no statistically significant difference between E_1 and E_2 as well as C_1 and C_2. This result suggest that M5EsA led to improved students' achievement in the experimental groups.

The entry behavior of students into secondary school is a factor that may influence the students' achievement in this level. Though this intervening variable was controlled through purposive sampling of sub-county schools, its effects may still exist among the learners in the same group since they were admitted to the schools with different marks in their Kenya Certificate of Primary Education (KCPE). Therefore, ANCOVA test analysis was carried out in order to minimize such effects. KCPE marks were used as a co variate during the analysis of CAT 2 post-test scores. The adjusted means obtained are as shown in Table 8.

Table 8: Actual and Adjusted CAT2 Mean using KCPE as a Co variate

Teaching approach	N	Mean	Adjusted Mean
E_1	67	22.9403	22.561[a]
C_1	83	11.7108	11.007[a]
E_2	79	19.9367	20.325[a]
C_2	74	11.9865	12.706[a]

Table 8 indicates that the adjusted means scores of CAT2 for the four groups were different from each other. The students in the experimental groups had their adjusted CAT2 means higher than those of the students in the control groups. In order to determine whether or not the noted differences in the adjusted means were statistically significant, ANCOVA analysis was carried out and the results were as recorded in Table 9

Table 9: ANCOVA of the CAT2 post-test Scores with KCPE mark as a Co variate

Source	Sum of Squares	df	Mean Squares	F	Sig	Partial Eta Squared
Contrast	7179.696	3	2393.232	28.985	.000	.226
Error	24605.443	299	82.569			

The results in Table 9 shows that the differences in the adjusted mean scores of the groups were statistically significant at the 0.05 level, F (3,299) = 28.985, P= 0.000. This confirms that students' achievement in the four groups differed significantly. Partial eta squared= .226 indicates that the relationship between KCPE marks of the students and their achievement after the treatment was weak, that is, the effect of co variate on the students' CAT 2 marks was not significant. This implies that the noted significant difference noted in Table 10 was confirmed. In order to determine where the differences were, a *Tukey* post-hoc test was carried out. *Tukey post-hoc* was preferred because of the unequal number of students in the groups (Schlegel, 2018 & Zach, 2020). The results of the analysis are recorded in the Table 10.

Table 10: Tukey Post-hoc Pair-Wise Comparisons of the Adjusted CAT2 Scores

(I)Teaching approach	(J)Teaching approach	Mean Difference(I-J)	Std. Error	Sig.
E_1	C_1	10.820*	1.579	.000
	E_2	2.263	1.606	.160
	C_2	9.893*	1.641	.000
C_1	E_1	-10.820*	1.579	.000
	E_2	-8.557*	1.533	.000
	C_2	-.927	1.574	.846
E_2	E_1	-2.263	1.606	.160
	C_1	8.557*	1.533	.000
	C_2	7.630*	1.555	.000
C_2	E_1	-9.893*	1.641	.000
	C_1	.927	1.574	.557
	E_2	-7.630*	1.555	.000

Table 10 reveals that there are significant differences between the experimental and control groups in all the pairs are in favor of the experimental groups. There are no significant differences between; the experimental groups; E_1 and E_2, p=.160 and also between the control groups; C_1 and C_2, p= .557. This means that M5EsA led to increase in students' achievement in the topic. Therefore, the null hypothesis ($H_0$1) was rejected. This is because the students in the experimental groups attained higher scores as opposed to those students who were in the control groups who attained lower scores.

3.3 Students' Achievement Mean Gain analysis

The analysis of post-test scores on CAT2 indicated that there was significant difference in students' achievement between those using M5EsA and those taught using CTM in favor of those who were facilitated using M5EsA. However, to determine whether all the students benefited from the two approaches, achievement gain analysis was carried out after the study. This was done by comparing students' achievement scores in CAT1 before the study and their respective achievement scores in CAT2 after the study. The results obtained were as indicated in Table 11.

Table 11: Comparison of Students' Achievement Mean Scores with their Mean Gain

	Group 1(Experimental)	Group 2(control)
Pre-test Scores	1.40	1.37
Post-test Scores	22.9403	12.4337
Mean Gain	21.5403	11.063

The results in Table 11 indicates that both groups gained from the two learning approaches. However, the experimental group had a higher mean gain (21.5403 than the control group (11.063). To determine whether there was a significant difference in students' achievement gain, groups' achievement gain means were compared using t-Test. The results obtained from the analysis are as recorded in Table 12.

Table 12: Achievement gain t-Test results

Teaching approach	N	Mean	SD	df	p-value	t-value
E_1	67	21.5403	10.18663	148	7.368	.000
C_1	83	11.0637	7.95303			

Table 12 indicates that there was significant difference in mean achievement gains for the two groups in favor of the experimental group. This implies that M5EsA is a more effective approach to learning because it led to increased achievement in the topic "Effect of electric current on substances" compared to CTM.

The results obtained above leads to the rejection of the null hypothesis(H_01) upon which objective number one was based. This may be attributed to learners taught using M5EsA being engaged in discussion groups while constructing knowledge through the five stages; engagement, exploration, explanation, extrapolation and evaluation of the constructivist approach learning cycle. This ensures that learner understands the concepts deeply and is able to create his/ her own knowledge. In addition to ensuring clear understanding, M5EsA also ensures good mastery of the concepts. This is because subject matter is divided into smaller units which must be mastered by the learner. This is done by learners being given exams after every unit and those who do not attained the minimum set score must be given remediation until they achieve target then will be allowed to proceed and learn the next unit.

These results are in agreement to the results obtained by Adeniji, Ameen, Dambatta and Orilonse (2018), Kainua, Mayanchi &Anya (2021), Sunday, Adeyemo & Babajide (2014); Njoroge et.al (2014), Olaoluwa & Olufenke (2015), Uzezi (2017), and Umahaba (2018). In their studies on Mastery learning and inquiry-based 5Es learning cycle noted that the students in the experimental groups achieved higher scores than those in the control groups. M5EsA being a hybrid of mastery learning and construcivist-based5Es learning cycle reaps the benefits of both approaches to learning. This is because learners went through concepts in detail through 5Es learning cycle and receives remediation on the areas of the topic where they did not master. Therefore, there is combined positive effect of the approaches in M5EsA which is realized in the higher achievement of learners in the experimental groups signified by their higher scores than of those in the control groups.

4. Conclusions

A major conclusion drawn from this study based on the findings obtained is that both CTM and M5EsA approaches led to increase in students' achievement in chemistry but those who are taught using M5EsA had higher achievement compared to those who were taught using CTM. This indicates that M5EsA has a higher positive significant effect on learners' understanding of chemistry concepts compared to CTM.

5. Implications of the study

The findings of this study indicates that M5EsA led to enhanced achievement in chemistry. Therefore, if this teaching approach is incorporated into the teaching of chemistry in secondary schools it may lead to higher students' achievement in chemistry in secondary schools.

6. Recommendations

● M5EsA leads to improved motivation and higher achievement in chemistry. Therefore teachers, Ministry of Education (MOE) and Kenya Institute of Curriculum Development (KICD) may encourage the use of this

approach so as to enhance achievement in chemistry. This can be done through regular teacher-induction seminars and workshops that may be organized by the ministry.

- In order to have more information on the effect of M5EsA on students' achievement in and also to enrich the present findings, further research is recommended to find out effect of M5EsA on other topics in chemistry other than the topic used in this study. There is need also to carry out more research to find out effect of M5EsA learners' achievement in other subjects.

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Effective Leadership in Decision Making and Mediation in the Relationship Between Educators and Parents: A Case Study of Primary Schools in Western Macedonia, Greece

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Abstract

The quality of leadership exercised within the educational unit is paramount to developing an effective school and enhancing student achievement. The purpose of this paper is to investigate effective leadership in decision-making and mediation in the relationship between teachers and parents in a specific region in Greece. The method of quantitative research with sampling was chosen. The research instrument used was a specially designed questionnaire whose questions were based on other research with similar thematic content. Data entry, processing and analysis were performed using the statistical program IBMStatisticsSPSSversion 21. As for its results, there are two important characteristics that a principal must possess for the effectiveness of his/her interventions in the role of mediator. These characteristics included the participation of parents and teachers in problem solving and the individual briefing and action of the director in order to effectively mediate in the restoration of relationships. What emerged from the factor analysis conducted to highlight the main characteristics that a principal should have in the role of mediator was cooperation, organization, the use of body language, practical applications, character potential, ethics, training and information. Among others, the paper concluded that the principals who take on the role of mediator perceive that their role has a positive response and is efficient for both parents and teachers. On the contrary, deputy principals and teachers who are receivers of the role and not actors, perceive that the response is not positive and the role of the principal does not promote efficiency.

Keywords: Effective Leadership, Decision Making, Mediation, Teachers, Parents

1. Introduction

It is since antiquitythat man has been organized into groups in order to achieve common goals. A natural development of cooperation which arises when interests clash is conflict, a typical social phenomenon. Conflicts constitute a characteristic of human life at all levels of social context and are sometimes manifested in the form of

a simple disagreement, sometimes in the form of aggression, and often take the form of passive resistance (Yukl, 2013).

As far as the effective operation of a school organization is concerned, it stems from the effective communication and cooperation among all its members, bodies and factors that make up the school system, as well as the effective communication and cooperation of the school system with the closer or wider social systems. In fact, the quality of leadership exercised within the school unit is paramount to the development of an effective school and the enhancement of student achievement (Hoover-Dempsey, et al., 1999).

The purpose of the paper is to highlight how school principals spend sufficient time in order to resolve various forms of conflict, starting from the individual conflict they experience themselves when making a decision while subsequently they have to face and spend time on the conflicts between colleagues, students and between teachers and parents. The decisions made by the school administration will have a direct impact on the school climate and will affect the productivity of teachers, students and the balance of relationships between school and parents. The wrong management of the school's human resources will affect the achievement of the school unit goals. The main objective of this paper will not be to prove that the reduction of conflicts will constitute the solution for the normalization of the school climate, but how the principal as a leader and mediator will highlight, through the organizational form of mediation as a communication tool, positive elements such as the common goals and purposes and convert any conflict that will s/he be called upon to face into a functional and effective one (Triantari, 2020).

The paper deals with the communication behaviors, skills and strategies of the modern principal of a school unit, who also plays the role of a mediator, whose characteristics are impartiality, reciprocity, balance, justice, respect, seriousness, assistance, composure, empathy, humor. The paper complies with the APA bibliographic system.

The present research is called upon to supplement the findings related to the communication behaviors, skills and strategies of the modern principal within the current context of a mediator. The necessity of the mediation skill as a communication tool will be highlighted through the research, which hopesthat it will mobilize the state in training its principals, and in the hard times we are going through due to the economic and social crisis, it will emphasize the prominent importance of effective communication towards optimizing the results of counseling procedures as a tool for normalizing relationshipsthroughout the school community.

The results of the research can be used for further study and reinforcement of the theories of good and successful leadership.

2. Conflicts and types of conflicts in primary education

According to Misla (2012: 25), conflict is defined as "the situation where the behavior of a person or a group intentionally seeks to impede the achievement of another person's or group's goals". On the basis of this definition, it is easily understood that the conflicts which may arise within the educational environment can be either interpersonal, that is, between individuals, or group ones, that is, between two or more different groups.

Therefore, the forms of conflicts in the school environment can take various forms, such as interpersonal or group ones as well as between individuals and groups, even school community conflicts (Henkin & Holliman, 2009). Interpersonal conflicts take place among the school personnel members, for example among school teachers or between teachers and the school principal. Teachers find it difficult to obey principals or follow rules or accept extra work, while principals press them for several school activities, resulting in frequent conflicts between teachers and principals.

Furthermore, intergroup conflicts take place between different groups in the school. Thus, conflicts can be observed between teachers and students and, as informal groups are created in each organization, conflicts also occur between these groups. Conflicts between individuals and groups arise between an individual and a group.

In particular, conflicts may arise between the school principal and the teachers' board or between a teacher and the students of a school class. School community conflicts occur between the school and the local community. The school is an open system interacting with its wider environment. Inevitably, this interaction may lead to conflicts, for example between the teachers' board and the parents' association or the local government.

Therefore, conflicts within a school unit there maycomprise conflicts between students, between principals and teachers, between teachers or even between the school unit and the local government or parents (Thanos, 2017). The bonds between conflict and education might be viewed in several ways. First and foremost, one can look into the roots of conflicts, such as inequality, ethnicity or gender-based violence, and see where education is implicated in such social phenomena. Secondly, it is possible to examine the repercussions of violent conflict on education itself. Thirdly, what can also be examined is the direct impact of modern school curricula and organization on conflicts. Last but not least, it is considered appropriate to examine the strategic educational responses during the conflict as well as after the conflict, in the reconstruction phase as well as the resolution of conflicts within the school environment (Davies, 2021).

3. School mediation in conflict resolution

The elements and the role of mediation may sound very nice and easy, but the teacher faces problems in his/her role as a mediator especially in modern societies, due to their multiculturalism and value pluralism. For instance, major difficulties arise in this context regarding his/her work from, on the one hand, disharmonies between the claims and norms of the state or the expectations of the various reference groups (parents, students as well as various social bodies) and, on the other hand, his own interpretation or self-perception. This often leads the teacher to role conflicts and a feeling of insecurity, as proven by a lot of studies and research (Sheridan, et al., 2017, Sani, 2015, Kruger, & Michalek, 2011).

Essentially, the process of communication between the school and the students' parents mainly depends on the principal of the school community and must be pursued in order for these two bodies to jointly search for the real causes as well as the effective solutions to the students' problems.

According to the systemic approach of the school unit, the principal must communicatively coordinate, in both the internal and external environment, people who have different personalities, social and cultural origins, opinions and attitudes as well as different ethics. Quite frequently, the different approach and interpretation of messages may potentially lead to communication problems that might lead to conflicts. The comprehension, interpretation and compromise of verbal and non-verbal messages with all members of the school community is the key to achieving the goals set by the principal at the beginning of the school year.

Both communication and cooperation between parents and teachers are deemed crucial in the learning process. However, they should be developed within the context of mutual respect and mutual understanding. It is very easy for a simple briefing to turn into a conflict when there is no convergent approach in their attitudes. Educator and parent may hold different viewpoints on the learning approach, the expectations and the evaluation of a child (Nova-Kaltsouni, 2004). There are teachers who support the dissociation of their responsibilities from the communication with parents (Matsangouras & Poulos, 2009). Thus, they attribute to parents a supporting role regarding the learning process and school performance, ignoring the fact that a lot of parents focus their interest on the general image of their child, which concerns his/her learning development, personality cultivation and social acceptance. There are also parents who underestimate the teachers' work and use offensive language about them even in front of their children and, as a result, the latter do not respect their teachers and misbehave inside and outside the classroom (Matsangouras & Verdis, 2003).

The principal of the school unit, within the implementation of his/her coordination duties, develops communication relationships with the school's teaching board and technical personnel, the students, the principals of neighboring schools, the Parents and Guardians Association, local bodies and clubs, the School Counselor and the Director of Primary or Secondary Education (Tzotzou & Anastasopoulos, 2013). An important component in these

communication relationships is the development of a positive climate, which assists cooperation, trust and facilitates interaction between them (Saitis, 2002). Despite the importance of these communication relationships, the present study will focus on the principal's communication with the children's parents. Parents have entrusted the school with the education, training and education of their children, with the aim of equipping them with knowledge and values, suitable for choosing higher studies, which will lead them to the labor market and their integration into today's society. Parents are therefore the people who are into the direct social environment of the school. A soundcooperation between school and family will help the family and the school to realize their goals with the children's progress always as a priority.

4. Research Methodology

4.1. Research Aim

The research process of the present paper constitutes a result of the literature review that preceded it. The main aim of the research process is to investigate effective leadership in decision-making and mediation in the relationship between teachers and parents. The aim of the research is to record the opinions of state primary school teachers regarding leadership in school units. However, what is also researched is the characterization degree of leadership in the school unit principals and the traits and characteristics they must possess for the necessary settlement of conflicts between parents and teachers. The main aim of this research, through the analysis of the research results, is to capture the core characteristics that a school unit should have with positive thinking, sound judgment and proper management by its teachers and principals.

4.2. Research population and sample

The procedure for compiling the sample was systematic sampling with a random sample,though with the limitation of its demographic classification, as the sample was selected from Western Macedonia. The method of systematic sampling was considered appropriate as it enables generalization of the results which become more representative of the population (Martin, 2008). The research involved teachers regardless of employment status (permanent and substitute ones), from primary schools in Western Macedonia. A total of 222 teachers participated, ranging in age from 20 to over 50. Principals, deputy principals and non-executive teachers also participated in the research, which is a key feature of the research that enables the study of opinions from all levels and jobs in the school unit. The majority of the sample was of Greek origin.

4.3. Research instrument

The research strategy followed for data collection was carried out using the method of quantitative research with sampling. Therefore, a questionnaire structured on questions from other researches with similar topics was chosen as a research tool (Saitis, 2001; Saitis, 2002; Stravakou, 2003; Sergiovanni, 1996; Pasiardis, 2004; Stamatis, 2005; Everard, Morris&Wilson, 2004; Kambouridis , 2002; Mademlis, 2014; Mukhopadhyay, 2005; Mylonas, 2005). It was compiled by the research designer, supervised by relevant teachers, digitized via Google Forms™ and distributed for completion. It was divided into four categories with closed-ended multiple-choice questions. There were eleven in the first category, of demographic interest, five multiple-choice ones in the second, which related to the communication skills and strategies of the principal during interventions and were structured according to the Likert scale, (1= Not at all, 5= A Lot). The third category, with four questions was structured on the same five-point scale 1-5 from "Not at all" to " A Lot", which concerned the importance of the role of the Principal in the communication relationships between teachers and parents in combination with a multiple choice one of three decision options (No-Yes-No Answer). In the fourth category, the principal'scommunication orientation with the resources of the Mediator was investigated, with four questions on the same five-point Likert scale, with the same multiple-choice options.

4.4. Data analysis methodology

Two parts were formed in the process of analyzing the data. In the first part, a descriptive analysis of the data was conducted and in the second part an inductive analysis was carried out.

In the part of the descriptive analysis, frequency tables and diagrams (bar graph and pie) were used to present the basic demographic characteristics of the sample. This part is particularly important as it provides the general picture of the sample and provides significant information about the participants, which can be used for the individual analysis. The opinions held by the teachers regarding the individual characteristics of control, such as interpersonal relationships in intervention situations, its role in the communication relationships between teachers and parents, and the communication orientation with the resources of mediation, were presented in summary tables.

In the second part of the data analysis, appropriate research tools were used in order to answer the research questions posed above. Non-parametric analysis was used for the correlation of variables using the variable comparison statistics for categorical variables of more than two categories, Kruskal-Wallis at a significance level of 5%. Non-parametric discriminant analysis was applied to create the categories in the principal's characteristics for the purposes of the last research question. Finally, factor analysis was applied to create the categories for the main characteristics that a principal should have in the role of Mediator during his/her intervention in the communication between parents and teachers.

Data entry, processing and analysis were performed by means of the statistical program IBMStatisticsSPSSSPSSversion 21.

5. Statistical analysis conclusions

The main communication techniques and skills possessed by a principal towards the completion of his/her interventions were concluded to be the ability to shape a positive climate and culture in the school and the ability to organize and coordinate responsibilities. According to the research participants, the appropriate strategies for effective intervention refer to cooperation and team spirit. Principals must be peacemakers and rationalize stressful situations through dialogue, making the people involved confront the problem. The moves s/he will have to follow in order to organize his/her actions should include meetings with an organized discussion topic and constant supervision and monitoring of the relationships between parents and teachers. The principal's role should be active and energetic rather than observative. However, his interventionist tendency should not be regular but limited to meetings once a month or three months. The action takenby principals in the schools where the research teachers work proved to satisfy their demands to a significant extent. Along with communication skills and strategies, they seem to use non-verbal skills as well. Nevertheless, parents did not seem to react positively to the role of mediator. When further analyzing the opinions held by groups of participants' characteristics, some significant results arose. There appeared to be a conflict in the views held by executives and non-executives regarding the implementation of innovative methods in interventions. The executives turned out to be supporters of the innovation, while the teachers did not seem to support it. Differences were also observed in the opinions held by teachers in small and large school units with regard to the encouragement of good relationships between parents and teachers. In small educational units, where the management and monitoring of disturbed relations between teachers and parents is more distinct, it seemed to be deemed more necessary than in large school units. During factor analysis, there emerged two important characteristics that a manager has to possess for the effectiveness of his interventions in the role of mediator. These characteristics were the participation of parents and teachers in problem solving and the individual information and action taken by the principal in order to effectively mediate in the restoration of relationships.

Table 1: Communication skills and strategies in order to manage interventions effectively

	A little	Moderately	Quite much	A lot
Ability to encourage positive relationships between teachers and parents	0	10	72	140
	0%	4,5%	32,4%	63,1%
Decisiveness in taking initiatives	1	8	57	156
	0,50%	3,6%	25,7%	70,3%
Ability to organise discussions between teachers-parents	1	17	83	121
	0,5%	7,7%	37,4%	54,5%
Ability to create a positive atmosphere and culture in the school	0	5	48	169
	0%	2,3%	21,6%	76,1%
Innovation	0	25	97	100
	0%	11,3%	43,7%	45%
Good knowledge of educational legislation	0	8	54	160
	0%	3,6%	24,3%	72,1%
Organisational skills and coordination of responsibilities	0	3	54	165
	0%	1,4%	24,3%	74,3%

What came to prominence as an interesting conclusion of the research was the discrepancy in the views held by teachers and executives regarding the parental response to the intervention made by the principals. The teachers, who are invited to participate as directly involved ones in the interventions, stated that the response by parents and teachers during the intervention is negative, a fact which was not noticed by the executives.

Finally, from the factor analysis made in order to highlight the main characteristics that a principal must have in the role of mediator, the findings included cooperation, organization, use of body language, practical applications, forcefulness of character, ethics, training and briefing.

6. Final conclusions

The school leader plays the most important role in the common path shared by both school and parents as well as in the existence of constructive communication and collaboration, since s/he has a vision and exercises leadership and influence on his team, not from an authority position, but from a deeply human relationship one. The need for communication and collaboration between school leadership and parents is considered crucial by the majority of teachers, as long as their roles are clarified, since harmonious cooperation and effective communication facilitates the holistic development of students. Consequently, the school-family and by extension school leader and parents' relationship constitute a highly important chapter for children's education, the family itself and the relationships that regulate its members.

The school leader, in the broad sense of the term, is described as the most important member of the school for the implementation of the bidirectional communication within the school unit. S/he is responsible for communicating in a clear manner with all members of the school unit (students, teachers, parents) since a/he exercises influence which is exerted through deep human relationships and not through positions of authority. The concern refers to the leader's individualized contact with each and every parent, to personal attention, interpersonal communication, support and trust. It is essential thats/he have self-esteem, self-confidence, self-discipline as well as problem-solving, emotional intelligence and decision-making skills.

As far as the research part is concerned, with regard to the demographic characteristics, most of the entire sample were male, the largest percentage, about one in two, belonging to the age group of 50 years and above. In terms of employment status, the vast majority were permanent teachers. Mostof them work in large school units and have a working experience of more than five years, whilethey reported that they did not hold an administrative position in their school unit. In terms of educational level, the largest proportion owned a universitydegree, while about a

third of them had a postgraduate degree and a small proportion of our sample were PhD holders. The percentages are almost evenly split in terms of place of work, with the proportion of those working in an urban area being slightly higher. As for the ones holding an administrative position, the largest proportion reported that they had been holding this position for over eight years. Finally, in relation to their service as deputy teachers, the largest proportion stated that it had been less than four years.
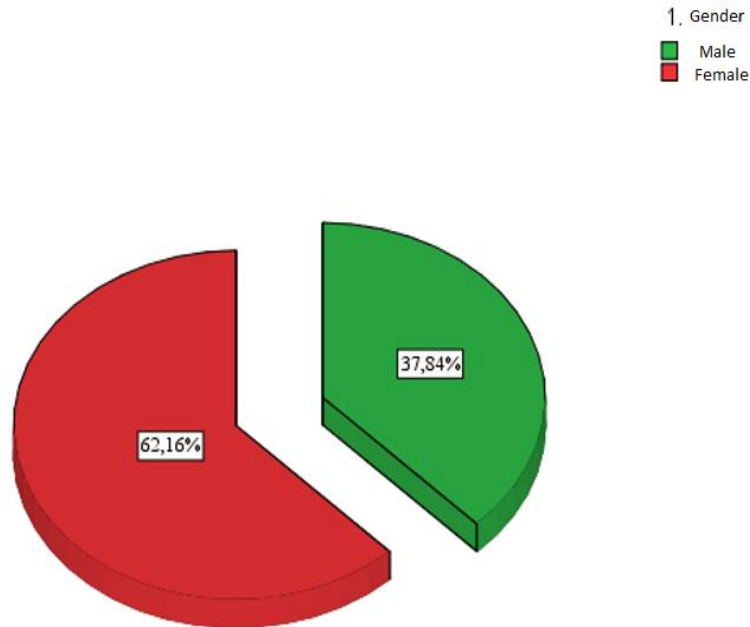
Figure 1: Participants' Gender

Table 2: Demographic Characteristics

		Frequencies	Percentages
Age	20-25	2	0,9%
	26-30	12	5,4%
	31-40	37	16,7%
	41-50	58	26,1%
	50+	113	50,9%
Employment Status	Permanent	193	86,9%
	Deputy	27	12,2%
	Hourly Employee	1	0,5%
	Unemployed	1	0,5%
Origin	Hellenic	221	99,5%
	Not Hellenic	1	0,5%
Do you belong to a big or small school unit?	Big	135	60,8%
	Small	87	39,2%
Work history at your current school	1 year	32	14,4%
	1-5 years	53	23,9%
	>5 years	137	61,7%
Executive position	Principal	48	21,6%
	Deputy Principal	18	8,1%
	Non-executive	156	70,3%

Regarding the strategies followed by principals in order to manage interventions, the main activities that were considered important by the majority of the teachers in the survey as key actions, involved planning responsibilities and meetings between students and teachers, organizing the content of teacher-parent meetings and monitoring teacher-parent relationships.

Table 3: Strategies followed by principals in order to manage interventions

S/he plans the responsibilities and meetings between student-teachers	N	20	28	67	64	43
	%	9%	12,6%	30,2%	28,8%	19,4%
S/He organises the content of teacher-parent meetings	N	24	38	67	53	40
	%	10,8%	17,1%	30,2%	23,9%	18%
S/he controls teacher-parent relationships	N	21	55	70	46	30
	%	9,5%	24,8%	31,5%	20,7%	13,5%

As for the principal's actions taken so as to manage interventions, most respondents consider them to be highly important. In order for problematic situations to be solved through dialogue-calmness and developed analytical thinking, most believe that discussions should be held quarterly. Furthermore, most teachers believe that their/principal's role in teacher-parent communication relationships is most important.

The principal, in addition to speaking to counselees, uses hand signals to a moderate extent. Moreover, as for his/her tone of voice, most of them answered that it is significant to a great extent, as is eye communication and finally, regarding facial expressions, most of them answered that is important be to a moderate extent. The teachers' responses were positive regarding the use of non-verbal behaviour with the aim of developing a positive emotional climate.

Table 4: Frequency table about the frequency of using communication media accompanied by speech for the direct assessment of the counselees

	Not at all	A little	Moderately	Quite much	A lot
Using hand signs	7	20	108	69	18
	3,2%	9%	48,6%	31,1%	8,1%
Voice tone	4	15	73	95	35
	1,8%	6,8%	32,9%	42,8%	15,8%
Eye communication	7	16	55	99	45
	3,2%	7,2%	24,8%	44,6%	20,3%
Facial Expressions	16	37	93	62	14
	7,2%	16,7%	41,9%	27,9%	6,3%

Regarding the section on the principal's communicative orientation with the mediator's skills and the willingness of parents and teachers to accept him/her as a mediator, the highest percentage answered a lot. As to whether the teams are weakened in the case of the existence of mediation by the principal in the parent-teacher communication, most of them think that this is not the case. Most were positive regarding the willingness of the principal to listen to the interlocutor and take an interest in him/her.

Table 5: Frequency table on parents' and teachers' willingness to accept the principal as a mediator

To what extent do you think that teachers and parents are "open" to accepting their principal's role as a mediator?					
	Not at all	**A little**	**Moderately**	**Quite much**	**A lot**
Frequencies	7	21	97	83	14
Percentages	3,2%	9,5%	43,7%	37,4%	6,3%

Concluding our section of questions about the skills that the principal as a mediator should have, concerning the developed skills the respondents answered that they should be highly developed, and so they did with regard to continuous training and participation in appropriate training programmes, dealing with problems directly and timely and generating culture. Finally, as for the implementation of actions with the participation of teachers and parents, the highest percentage answered positively to a large extent.

Table 6: Frequency table on the principal's skills regarding the role of mediator

	To a minimum extent	To a little extent	To a moderate extent	To a large extent	To a great extent
Developed collaboration skills	1	0	11	81	129
	0,5%	0%	5%	36,5%	58,1%
Continuous training and participation in appropriate training programmes	0	4	31	91	96
	0%	1,8%	14%	41%	43,2%
Direct and timely problem tackling	0	0	6	73	143
	0%	0%	2,7%	32,9%	64,4%
Collaborative leadership model	0	2	15	90	115
	0%	0,9%	6,8%	40,5%	51,8%
Promotion of culture	1	3	26	94	98
	0,5%	1,4%	11,7%	42,3%	44,1%
Implementation of actions involving teachers and parents	1	5	56	88	72
	0,5%	2,3%	25,2%	39,6%	32,4%

The decisiveness in taking initiatives was described as highly important by all respondents, with deputy principals agreeing with this perspective to a greater extent. What was rated as a very important communication skill by all the respondents was the ability to create a positive climate and culture in the school with the principals and deputy principals considering it quite important. For deputy principals, innovation was characterized to be highly important and so it was for principals with a slightly lower percentage, followed by executives of no position with even lower percentages. On the contrary, non-executives consider the good knowledge of educational legislation very important which is followed in this answer by the principals and with a slight difference by the vice-principals. Finally, the diligence and coordination of responsibilities are mentioned by non-executives, followed by the deputy principals and lastly by the principals.

Table 7: Relevance table and independence test on principals', deputy principals' and non-executives' views on the principal's key communication skills and strategies during the interventions

		Principal	Deputy principal	Non-executive	R	p
Ability to foster positive relationships between teachers and parents	Moderately	0	0	10	0,104	0,308
		0,00%	0,00%	6,40%		
	Quite much	17	5	50		
		35,40%	27,80%	32,10%		
	A lot	31	13	96		
		64,60%	72,20%	61,50%		
Decisiveness in taking initiatives	A little	0	0	1	0,128	0,301
		0,00%	0,00%	0,60%		
	Moderately	0	2	6		
		0,00%	11,10%	3,80%		
	Quite much	15	2	40		
		31,30%	11,10%	25,60%		

	A lot	33	14	109		
		68,80%	77,80%	69,90%		
ability to create a positive climate and culture in the school	Moderately	0	0	5	0,091	0,456
		0,00%	0,00%	3,20%		
	Quite much	13	5	30		
		27,10%	27,80%	19,20%		
	A lot	35	13	121		
		72,90%	72,20%	77,60%		
Innovation	Moderately	3	1	21	0,174	0,009 *
		6,30%	5,60%	13,50%		
	Quite much	15	5	77		
		31,30%	27,80%	49,40%		
	A lot	30	12	58		
		62,50%	66,70%	37,20%		
Good knowledge of educational legislation	Moderately	4	1	3	0,127	0,128
		8,30%	5,60%	1,90%		
	Quite much	14	6	34		
		29,20%	33,30%	21,80%		
	A lot	30	11	119		
		62,50%	61,10%	76,30%		
Organizational skills and coordination of responsibilities	moderately	1	0	2	0,122	0,158
		2,10%	0,00%	1,30%		
	Quite much	18	3	33		
		37,50%	16,70%	21,20%		
	A lot	29	15	121		
		60,40%	83,30%	77,60%		

In our inferential analysis and in attempting to determine the importance of the principal's role in the teacher-parent interpersonal relationships in relation to school location, no statistically significant differences emerged between the two groups. As far as the size of the school unit and the principals' communication skills are concerned, a significant dependency was discernible. Also, the ability to encourage good relationships between teachers and parents in small school units is considered more imperative compared to large ones.

The participants in our research effort pinpointed a statistically significant dependence between the communication skill and strategy of good educational legislation knowledge and the size of the school unit. It still emerges is that good knowledge of educational legislation in large school units is considered more important compared to smaller ones.

In order for principals to apply effective leadership in decision-making, conciliation and mediation, it is necessary, according to the vice principals, to have skills and continuous training and participation in appropriate training programmes, immediate and timely problem-solving and implementation of actions in which teachers and parents are involved. For teachers who do not hold an executive position, when it comes to the principal in the role of facilitator, it is necessary that s/he possess developed collaboration skills and implement a collaborative leadership model.

Regarding the investigation of the communication strategies followed by the principals, the sample of participants selected was the one who responded positively to the question whether the school principal is willing to listen to his/her interlocutor and is interested in him/her and they indicated that the most popular form of communication is body language, followed by eye communication.

To investigate the degree of influence regarding the application of communication skills by the principal on the response of parents and teachers, it arose that as the frequency of implementing specific actions (communication skills and the degree of willingness of parents to cooperate) increases, the response of parents and teachers decreases. On the other hand, when principals/teachers work with the parents' association in order to mediate, in cases where there is no cooperative climate between the school and parents, parents and teachers respond more positively.

In additions, the role of the principal as a mediator by means of using communication techniques and mediation skills was investigated in terms of the empowerment or disempowerment felt by the parent-teachers. It was observed that as the more frequently these mediation strategies using communication techniques and skills are implemented, the more disempowered the groups resorting to the principal/teacher for mediation feel.

In general, it is concluded that principals who take on the role of mediator perceive that their role is positively responded to be effective for both parents and teachers. In contrast, deputy principals and teachers who are recipients of the role rather than agents perceive that the response is not positive and the principal's role does not promote efficiency.

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A Teaching Note on Strict Liability in Tort

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Abstract
Before the *Greenman* decision in 1963, a plaintiff in a products liability case had to rely on the theories of negligence, breach of warranty, or misrepresentation or fraud for recovery. These theories were not specific to products cases and presented plaintiffs with certain formidable "obstacles." Because of the many issues raised in applying these theories, courts began to search for a more rational theory for determining liability which would move away from judging the conduct of an actor and instead would focus on the product itself. In Part 6 of the Series on Teaching Notes, the authors focus on the theory of strict liability in tort as the now *preferred* method of compensating parties for injuries caused by a defective product.

Keywords: Strict Liability in Tort, Product Defects, Franchising, Used Products, Leasing, Service Transactions, Misuse, Bystanders, Assumption of Risk

1. Introduction

The area of law termed *products liability* is a mixture or a hybrid of both contract law, involving either *express or implied promises, found in the law of warranties,* and tort law, based upon specific *conduct*, oftentimes reflected in a *negligence standard,* or actions based on *fraud* or *misrepresentation*. In general terms, products liability refers to the potential liability of manufacturers, wholesalers or other middlemen, or retailers/sellers, as well as other parties, to consumers, purchasers, users, and even bystanders when a product is found to be defective. No matter what the underlying theory of liability, the predicate of a suit in products liability is a *defective product*. As the Supreme Court of New Jersey stated in *Feldman v. Lederle Laboratories* (1984): "The emphasis of the strict liability doctrine is upon the safety of the product, rather than the reasonableness of the manufacturer's conduct. It is a product-oriented approach to responsibility." This defect can arise from three common sources:

1. A manufacturing or production defect—that occurs from a random and atypical breakdown in the manufacturing process (Owen, 2002).
2. A design defect—that is characteristic of a whole product line (Owen, 2008), for example, the Ford Pinto (Strother, 2018).

3. A marketing defect—involving inadequate warnings concerning risks or dangers, or inadequate instructions or labels relating to how to properly or safely use a product, with many cases in the area of a marketing defect (Ausness, 2002) involving food, drugs, venetian blinds, or more recently, children's toys, cribs (Hunter & Montuori, 2012), or car seats.

Under the common law, there were three theories under which a plaintiff could bring suit for personal injury, property damages, or economic damages caused by a defective product (Hunter, Amoroso, & Shannon, 2012b):

1. Negligence**,** an action brought in tort, focuses on the defendant's conduct or omission to act and whether that conduct or omission was *reasonable* in light of defendant's duty of due care (see generally Hunter, Shannon, Amoroso, 2023a). Negligence requires proof that a product was designed or manufactured in an *unreasonable manner*, or that the warnings or directions were inadequate under the circumstances.

   Professor Owen (2007, p. 1671) states:

   "To prevail on a claim of negligence, a plaintiff is required to prove: (1) a duty owed by the defendant to the plaintiff; (2) a breach of that duty by the defendant; (3) an injury to proximately caused by the breach. Also essential to negligence, evident from an early date, was the necessity of a causal connection between the defendant's breach of duty and the plaintiff's damage that was natural, probable, proximate, and not too remote."

   However, there were significant drawbacks relating to a negligence action which included the *doctrine of* privity, which made it difficult, if not impossible, to reach a negligent manufacturer with whom an injured plaintiff had not personally dealt (Bedi, 2022). At the same time, the doctrine of privity absolved the retailer from liability because the retailer had normally only "passed on the product"—hence the origin of the common law doctrine of "*caveat emptor*," translated as "let the buyer beware." In addition courts recognized the *defense of contributory negligence,* which at common law was an absolute bar to recovery by the plaintiff (Simmons, 1995) and which resolved the issue of liability on the basis of the sometimes tortured *standard of a "reasonable man,"* more specifically, reaching a consensus on what would be the standard of conduct required of a "reasonable manufacturer" or "reasonable designer" or of a "reasonable plaintiff" or "reasonable defendant" under the circumstances of each case (Poe, 2021).

2. Misrepresentation and fraud actions focus on proof of a *false representation of a material fact* (found in words, actions, concealment, or in some cases silence, where the common law found a "duty to speak"), upon which a plaintiff *reasonably relied* in entering into a contract. At common law, evidence of falsehood was required in order to prove misrepresentation, and proof of *scienter* ("the intent to deceive"), arising from either "knowledge of falsity or "reckless disregard of the truth," was a part of the "*prima facie*" proof required in cases of fraud. Often times, assertions of "safety" or of a "safe product" formed the basis of many allegations of fraud.

   A practical drawback to a suit based on misrepresentation or fraud was the common belief or negative expectation that all sellers would engage in a certain amount of "sales puffing" or exaggeration regarding their products (see generally Jessop, 2020), and the common notion that no matter how careful a manufacturer might be, no one could absolutely guaranty the safety of any product, thus potentially negating the requirement of reasonable reliance on the part of a plaintiff because under these circumstances, "the consumer has no expectations as to how safe it is" (see *Knitz v. Minster Mach. Co.*, 1982).

3. Warranty actions were essentially based on contract promises, either express or implied (Hunter, Shannon, & Amoroso, 2023b). Warranties, however, were subject to *disclaimers* on the part of sellers and could also be severely *limited* in their scope by severe notice requirements (that is, the injured party had to give the party causing the injury *notice* that damage/injury had occurred *within a rather limited period of time*). Warranty actions also required that the plaintiff had to prove *reliance* on specific words or promises made by a seller.

Warranties under the *Uniform Commercial Code* (UCC) were only applicable in cases involving the sale of goods, and not in the myriad of other types of transactions that resulted in goods or other property reaching the hands of a consumer—most notably *leases or bailments* (Shannon & Hunter, 2021). Under the common law, privity of contract between a manufacturer and the consumer/buyer (termed vertical privity) was often problematic, although the requirement of vertical privity was severely limited in M*acPherson v. Buick Motors* (1916). Under the common law, a manufacturer's liability was limited to the *actual purchaser* of a product and not to any other parties. This aspect of privity was greatly modified with the decision in *Henningsen v. Bloomfield Motors* (1960), which saw the expansion of liability (horizontal privity) under the warranty of merchantability to persons other than the consumer/buyer found in UCC § 2-318, which significantly expanded the range of potential plaintiffs in a warranty action.

The drawbacks inherent in the three common law forms of action led to the creation of the modern and now preferred theory of liability in products cases—the *development of strict (or absolute) liability in tort*. Strict liability focuses exclusively on the existence of a *product defect* and not on the conduct of the defendant (negligence), or on specific words or promises (warranty/misrepresentation/ fraud). Strict liability permits an injured party (broadly defined) to sue a manufacturer directly, even in the absence of privity; will permit no disclaimers of the manufacturer's duty; and is less stringent than the strict requirements of notice under warranty actions, which was often as short as three months.

2. Types of Product Defects

No matter what might be the theory of recover, a suit in products liability requires proof of a product defect.

2.1. Production or Manufacturing Defects

A production or manufacturing defect exists "*if the product differs from a manufacturer's intended result or if the product differs from apparently identical products from the same manufacturer*."

There are various formulations concerning a production or manufacturing defect:

a. A product which comes off the assembly line in a substandard condition in comparison with other identical units ("*the deviation from the norm test*") (see Traynor, 1965; *Lee v. Volkswagen of America, Inc.*, 1984).
b. Imperfections that occur in a typically *small percentage of products* of a given design as a result of a failure in the manufacturing process. If there are a large number of individual defects, this will be seen as a design defect and not an isolated manufacturing or production defect.
c. Products that do not conform to their intended design (Hunter, Amoroso, & Shannon, 2012a, p. 37).
d. Products that do not conform to the great majority of manufactured products within the design.
e. Products that are misconstructed.
f. Defects which result from a mishap in the manufacturing process or from improper workmanship, or because defective materials were used (applied to component parts, assembled, but not made, by the final manufacturer).
g. Products which do not conform to the manufacturers own specifications.

2.2. "Foreign-Natural" vs. "Reasonable Expectations"

In a large majority of manufacturing defect cases, courts will employ a simple test to determine if a product is defective: the "reasonable expectations of the buyer/consumer." There is a major "wrinkle" or exception to this test found in cases filed under a theory of breach of warranty.

In *Hunt v. Ferguson-Paulus Enterprises* (1966) (see Janes, 1976), the plaintiff purchased a cherry pie from the defendant through a vending machine owned and maintained by the defendant. On biting into the pie, one of plaintiff's teeth was broken when it encountered a cherry pit.

The *Hunt* court noted that some courts have:
> "drawn a distinction between injury caused by spoiled, impure, or contaminated food or food containing a foreign substance, and injury caused by a substance natural to the product sold. In the latter class of cases, these courts hold there is no liability on the part of the dispenser of the food."

In the leading case of *Mix v. Ingersoll Candy Co.* (1936), the court held that a patron of a restaurant who ordered and paid for chicken pie, which contained a sharp sliver or fragment of chicken bone, and who was injured as a result of swallowing the bone, had no cause of action against the restaurateur either for breach of warranty or negligence. Referring to cases in which recovery had been allowed the court said:
> "All of the cases are instances in which the food was found not to be reasonably fit for human consumption, either by reason of the presence of a foreign substance, or an impure and noxious condition of the food itself, such as for example, glass, stones, wires or nails in the food served, or tainted, decayed, diseased, or infected meats or vegetables."

The "foreign-natural" test of *Mix* which denied a remedy to a plaintiff has been applied in the following cases: *Silva v. F.W. Woolworth Co.* (1938) (turkey bone in "special plate" of roast turkey); *Musso v. Picadilly Cafeterias, Inc.* (1965) (cherry pit in a cherry pie); *Courter v. Dilbert Bros., Inc.* (1965) (prune pit in prune butter); *Adams v. Great Atlantic & Pacific Tea Co.* (1960) (crystallized grain of corn in cornflakes); and *Webster v. Blue Ship Tea Room, Inc.* (1964*)* (fish bone in a fish chowder).

However other courts have rejected the foreign-natural test in favor of what is known as the "reasonable expectation" test, among them the Supreme Court of Wisconsin, which, in *Betehia v. Cape Cod Corp.* (1960) held that a plaintiff who was injured by a chicken bone in a chicken sandwich served to him in a restaurant, could recover for his injury either for breach of an implied warranty or for negligence. "There is a distinction," the *Betehia* court in finding for the plaintiff, stated, "between what a consumer expects to find in a fish stick and in a baked or fried fish, or in a chicken sandwich made from sliced white meat and in roast chicken."

The *Betehia* court (pp. 331-332) noted that the test should be what is *reasonably expected* by the consumer in the food as served, not what might be natural to the ingredients of that food prior to preparation.
> "What is to be reasonably expected by the consumer is a jury question in most cases; at least, we cannot say as a matter of law that a patron of a restaurant must expect a bone in a chicken sandwich either because chicken bones are occasionally found there or are natural to chicken."

2.3. Design Defects

Fischer and Powers (1988, p. 57) wrote:

> "Design and warning defects present more difficult problems than manufacturing defects. For one thing, it is harder to identify when such products are defective. Some external standard is needed because these products cannot be identified as being defective by simply comparing them to the manufacturer's other products. In addition, the repercussions of declaring that a product is defective because of design or failure to warn are more serious for the manufacturer. The determination condemns all products in the line rather than an isolated few."

A design defect occurs where the design of the product makes the product unreasonably dangerous or unsafe. Courts will employ industry standards, trade customs or "trade usage," applicable manufacturing codes, or

consensus industry standards in order to determine the nature of any design defect. Design defect cases, however, will often require the introduction of expert proof, which must be authenticated. The *expert* him/herself must be qualified to give objective/fact testimony or to render a professional opinion.

2.4. Standards for Admitting Expert Testimony

As Hunter, Shannon, and Amoroso (2018b, p. 1) wrote:

> "Our American legal system often relies on the testimony of so-called expert witnesses to guide the jury in its deliberations. These experts may offer their professional opinions as to facts which will be important to a jury in understanding the nature of a claim or of a defense. Expert witnesses are often critical to both the plaintiff and the defendant, most especially in cases involving products liability, drugs and pharmaceuticals, and toxic torts. Thus, their participation in the trial process must be carefully managed and, in some cases, orchestrated."

Expert testimony often relates to the element of legal causation. Causation is a required element in a negligence case) Owen, 2007). Causation may be proved at trial through the testimony of an expert witness. Technical experts can give opinions on scientific matters that are beyond the general knowledge or competency of the jury or beyond the scope of testimony of ordinary or "fact witnesses." Because of an expert's education, training, background, or experience, an expert witness's testimony will often assist the jury to understand complex technical issues, especially relating to design questions.

Many product liability cases in the 1980s and early 1990s were characterized by the "battle of the experts" that were often confusing to the average juror (see, e.g., Gluck, Regan, & Turret, 2020). It appeared to many that expert testimony was often based on what some came to call "junk science" (Meyer, 2020) or novel scientific theories that were based on data or inferences that were not subject to scientific proof.

In an effort to reform the area of expert testimony, the United States Supreme Court in 1993 established principles for the admission of such expert testimony in *Daubert v. Merrell Dow Pharmaceuticals* (1993). The Supreme Court stated that trial judges must act as a "judicial gatekeeper" and refuse to admit testimony based on "junk science," holding that scientific evidence had to be both *relevant* and *reliable* (Young & Goodman-Delahunty, 2021). The Supreme Court listed four *standards* for admitting scientific evidence:

- Has the theory been scientifically tested?
- Has the theory been subjected to *peer review* and *publication*?
- What is the known or potential *rate of error* and are there controlling standards for the testing process?
- Does the scientific community "*generally accept*" the theory?

2.5. Determining a Design Defect

Design defect cases recognize the fact that there is a risk involved in the production of many products and then the question becomes: *Did the manufacturer take reasonable steps to correct or at least minimize the risk?*

Borel v. Fibreboard Paper Products Corp. (1973) stands for the proposition that "A dangerously defective product would be one which a reasonable person would not put into the stream of commerce if he had knowledge of its harmful character" In some cases, courts will inquire whether or not the hazard, danger, or risk could have been obviated at a slight cost. (For example, selling or manufacturing a lawnmower without a dead man's switch which could have been added or supplied for less than $5.00 (*Burch v. Sears Roebuck,* 1983)). The opposite consideration may be present as well.

In determining the existence of a design defect (Vetri, 2009), courts must necessarily balance various factors against the safety interests of the consumer. Many courts hold that the proper standard to be applied is as follows:

> *"A product is defective because of its design and unreasonably dangerous if the reasonable seller, having been made aware of the danger involved, would not sell the product."*

The State of New Jersey provides a statement of the majority view relating to determining a design defect. New Jersey courts require that the *plaintiff* must prove there is a "practical and technically feasible" alternative design that will not impair the core function of the product or unreasonably increase its cost.

2.6. "State of the Art" Evidence

In general, in order to determine if a design defect is present, a product will be judged when it is either manufactured or sold (see *Maxted v. Pacific Car and Foundry Co.,* 1974). So-called *"state of the art"* testimony will be utilized to determine the technology available at this point (CMP Law Group, 2018).

In *Turner v. General Motors* (1979, p. 746) stated:

> "… whether a product was defectively designed must be judged against the technological context existing at the time of its manufacture. Thus, when the plaintiff alleges that a product was defectively designed because it lacked a specific feature, attention may become focused on the feasibility of that feature the capacity to provide the feature without greatly increasing the product's cost or impairing usefulness. This feasibility is a relative, not an absolute, concept; the more scientifically and economically feasible the alternative was, the more likely that a jury may find that the product was defectively designed. A plaintiff may advance the argument that a safer alternative was feasible with evidence that it was in actual use or was available at the time of manufacture. Feasibility may also be shown with evidence of the scientific and economic capacity to develop the safer alternative. Thus, evidence of the actual use of, or capacity to use, safer alternatives is relevant insofar as it depicts the available scientific knowledge and the practicalities of applying that knowledge to a product's design."

2.6.1. *Boatland:* A Case Study

In *Boatland of Houston v. Bailey* (1980) the court discussed issues relating to the *feasibility of an alternate design.* The dispute between the parties concerned whether the feasibility of an alternative design for Bailey's boat was the *"state of the art"* when the boat was sold (see Buckler, 1998; Ausness, 2012). In a case alleging negligence, the *reasonableness* of the defendant's conduct in placing a product on the market is in issue. Feasibility may be shown by proving that *a safer alternative was available at the time of manufacture, or that there was evidence of the scientific and economic capacity to develop safer alternatives*. Thus, evidence of industry customs offered for the purpose of showing the "state of the art" at the time of manufacture may be offered by either party for the purpose of comparing the defendant's conduct with industry customs.

Boatland involved an alleged defect in the design of a 16-foot bass boat. The plaintiffs were the widow and adult children of Samuel Bailey, who was killed in a boating accident in May of 1973. The plaintiffs sued under a *wrongful death* statute, alleging that Bailey's death occurred because the boat he was operating was defectively designed.

> "The boat had struck a partially submerged tree stump, and Bailey was thrown into the water. With its motor still running, the boat turned sharply and circled back toward the stump. Bailey was killed by the propeller, but it is unclear whether he was struck when first thrown out or after the boat circled back toward him."

At trial, the plaintiffs put forth several reasons why the boat was defectively designed, including inadequate seating and control area arrangement, unsafe stick steering and throttle design, and the failure of the motor to automatically turn off when Bailey was thrown from the boat. They based liability under the theories of negligence and strict liability in tort.

The plaintiffs produced evidence of the scientific and economic feasibility of a design that would have caused the boat's motor to automatically shut off when Bailey fell out. As a result, the plaintiffs argued, "the boat's design

should have incorporated an automatic cut-off system or the boat should have been equipped with a safety device known as a "kill switch."" Extensive testimony was elicited from a number of parties on the question of feasibility: the president of Boatland in deposition testimony stated that there were several types of "kill switches" available, and that they were now being installed by Boatland when it assembled and sold bass boats;' a passenger in the boat with Bailey at the time of the accident stated he had not heard of automatic kill switches before the accident, but afterwards he purchased one for his own boat; the inventor of a kill switch designed for open-top carriers stated that began developing his "Quick Kill" in November of 1972 and had applied for a patent in January of 1973, and the invention required no breakthroughs in the state of the art of manufacturing or production.

A witness also stated that his "kill switch" *invention was simple*: a lanyard connects the operator's body to a device that fits over the ignition key so that if the operator moves, the lanyard is pulled, the device rotates, and the ignition switch turns off. If the kill switch were installed and the operator was thrown out of the boat, the killing of the motor would prevent the boat from circling back.

A NASA employee who worked with human factors engineering, testified that he had tested a bass boat similar to Bailey's. He concluded that the boat was deficient for several reasons and that these deficiencies played a part in Bailey's death. When the boat struck a submerged object and its operator became incapacitated, the seating and control arrangement caused the boat to go into a hard turn. If the operator were thrown out, the boat was capable of coming back and hitting him. The witness also stated that a kill switch would have cut off the engine and the motor would not have been operative when it hit Bailey.

Boatland elicited evidence to rebut the Baileys' evidence of the feasibility of equipping boats with kill switches or similar devices in March of 1973, when the boat was assembled and sold. Boatland introduced evidence to show that the kill switches were *not available* when Bailey's boat was sold. The matter was submitted to the jury. After considering the feasibility and effectiveness of an alternative design and other factors such as the utility and risk, the jury found that the boat was not defective.

In reinstating the jury verdict, the Supreme Court of Texas noted:
> "Evidence of this nature is important in determining whether a safer design was feasible. The limitations imposed by the state of the art at the time of manufacture may affect the feasibility of a safer design. Evidence of the state of the art in design defect cases has been discussed and held admissible in other jurisdictions. In this case, the evidence advanced by both parties was relevant to the feasibility of designing bass boats to shut off automatically if the operator fell out, or more specifically, the feasibility of equipping bass boats with safety switches."

The dissenting opinion of Judge Campbell (pp. 750-753) in rejecting the notion that "state of the art" should be equated with industry custom raised several important points.
> "State of the art" does not mean "the state of industry practice." "State of the art" means "state of industry knowledge." At the time of the manufacture of the boat in question, the device and concept of a circuit breaker, as is at issue in this case, was simple, mechanical, cheap, practical, possible, economically feasible and a concept seventy years old, which required no engineering or technical breakthrough. The concept was known by the industry. This fact removes it from "state of the art."

In criticizing the dismissal of the complaint against Boatland, Judge Campbell wrote.
> "The focus is on the product, not the reasoning behind the manufacturer's option of design or the care exercised in making such decisions. Commercial availability or defectiveness as to Boatland is not the test. Defectiveness as to the product is the test. If commercial unavailability is not a defense or limitation on feasibility to the manufacturer, it cannot be a defense to the seller."
> "What is this Court faced with in this case? Nothing more than a defendant seller attempting to avoid liability by offering proof that Bailey's boat complied with industry practice (which it did at that time) but not because of any limitations on manufacturing feasibility at that time. This is an industry practice case. The evidence does not involve "technological feasibility.""

2.7. Utility

In addition, courts will look at issues relating to the *utility* of a product. In *Phillips v. Kimwood Mach. Co.* (1974), the Supreme Court of Oregon stated:

> "In design cases the utility of the article may be so great, and the change of design necessary to alleviate the danger in question may so impair such utility, that it is reasonable to market the product as it is, even though the possibility of injury exists and was realized at the time of the sale. Again, the cost of the change may be so great that the article would be priced out of the market and no one would buy it even though it was of high utility. Such product is not dangerously defective despite its having inflicted injury."

In *Turner v. General Motors Corp.* (1979), the Supreme Court of Texas discussed the strict liability standard of "defectiveness" as applied in design defect cases relating to utility and noted that:

> "whether a product was defectively designed requires a balancing by the jury of its utility against the likelihood of and gravity of injury from its use. The jury may consider many factors before deciding whether a product's usefulness or desirability is outweighed by its risks. Their finding on defectiveness may be influenced by evidence of a safer design that would have prevented the injury. Because defectiveness of the product in question is determined in relation to safer alternatives, the fact that its risks could be diminished easily or cheaply may greatly influence the outcome of the case."

3. Failure to Warn

In general, in order for a warning to be adequate, it must make the product safe for both its intended and foreseeable uses, including any potential foreseeable misuse (*Barker v. Lull Engineering Company*, 1978), especially by a minor child or children (*Spruill v. Boyle-Midway, Inc.*, 1962; *Knowles v. Harnischfeger Corp.*, 1983; Kirby, 2012).

There are three criteria that are used by courts in determining the adequacy of warnings (Hunter, Lozada, & Shannon, 2019):

1. A warning must be displayed in such a way as to reasonably "*catch the attention*" of the person expected to use the product (Tiersma, 2002). This element deals with such factual questions as size, position, and even the color of the warnings (Lewandowska & Olejnik-Krugly, 2022).
2. A warning must fairly apprise a reasonable user of the nature and extent of the danger and *not minimize* any danger (*Gardner v. Q.H.S.*, 1971).
3. A warning must instruct the user how to use the product in such a manner as to avoid the danger—essentially how to *safely use* the product (see Bowbeer, Lumish, & Cohen, 2000).

The question of sufficiency of the warning is normally one for the jury (*McClanahan v. California Spray-Chemical Corp,* 1953). The *Spruill* court, quoting *Sadler v. Lynch* (1951, p. 666), emphatically stated: "*An insufficient warning is in legal effect no warning.*"

4. The Historical Development of the Theory of Strict Liability in Tort

In *Daly v. General Motors Corporation* (1978), the court referred "certain highlights" in the historical development of strict liability in tort:

> *"Tort law had evolved from a "legal obligation initially imposed without 'fault,' to recovery which, generally, was based on blameworthiness in a moral sense." Later, for reasons of social policy and because of the unusual nature of defendants' acts, "liability without fault continued to be prescribed in a certain restricted area, for example, upon keepers of wild animals, or those who handled explosives or other dangerous substances, or who engaged in ultrahazardous activities." Simultaneously, and more particularly, those who were injured in the use of personal property were permitted recovery on a contract theory if they were the purchasers of the chattel or were in privity. Subsequently, liability was imposed in negligence upon the*

manufacturer of personalty in favor of the general consumer. Evolving social policies designed to protect the ultimate consumer soon prompted the extension of legal responsibility beyond negligence to express or implied warranty. Thus, in the area of food and drink a form of strict liability predicated upon warranty found wide acceptance. Warranty actions, however, contained their own inherent limitations requiring a precedent notice to the vendor of a breach of the warranty, and absolving him from loss if he had issued an adequate disclaimer."

"General dissatisfaction continued with the conceptual limitations which traditional tort and contract doctrines placed upon the consumers and users of manufactured products, this at a time when mass production of an almost infinite variety of goods and products was responding to a myriad of ever-changing societal demands stimulated by wide-spread commercial advertising. From an historic combination of economic and sociological forces was born the doctrine of strict liability in tort."

Two cases would be pivotal in this development. The first case was *Escola v. Coca Cola Bottling* (1944) (a *res ipsa loquitur* case), in which Justice Traynor argued in his concurring opinion that traditional theories for determining liability were inadequate and that the court should adopt a *new and special theory for product cases*. "In my opinion, it should now be recognized that a manufacturer incurs an absolute liability when an article he has placed on the market, knowing that it is to be used without inspection, proves to have a defect that causes injury to human beings." Judge Traynor pointed out that a form of strict liability was already imposed on products sellers under the law of warranty ("merchantability"). The privity requirement (Green, 2023), however, rendered the remedy inadequate because most buyers could not, at that *pre-Henningsen* time, sue the manufacturer of the product directly because they were not in privity of contract with the manufacturer.

The second case was *Greenman v. Yuba Power* Products (1963), where Justice Traynor wrote:

"A manufacturer is strictly liable in tort when an article he places on the market, knowing that it to be used without inspection for defects, proves to have a defect that causes injury to a human being."

"Although…strict liability has usually been based on the theory of an express or implied warranty running from the manufacturer to the plaintiff, the abandonment of the requirement between them, the recognition that the liability is not assumed by agreement but imposed by law…and the refusal to permit the manufacturer to define the scope of his own responsibility for defective products…make clear that the liability is not one governed by the law of contract warranties but by the law of strict liability in tort."

"The purpose of such liability is to insure that the costs of injuries resulting from defective products are borne by the manufacturers that put such products on the market rather than by the injured persons who are powerless to protect themselves."

"To establish the manufacturer's liability it was sufficient that plaintiff proved that he was injured while using the Shopsmith in a way it was intended to be used as a result of a defect in design and manufacture of which plaintiff was not aware that made the Shopsmith unsafe for its intended use."

Justice Traynor makes several salient points in his opinion:

- "The notice requirement of Section 1769, however, is not an appropriate one for the court to adopt in actions by injured consumers against manufacturers with whom they have not dealt."
- "As between the immediate parties to the sale [the notice requirement] is a sound commercial rule, designed to protect the seller against unduly delayed claims for damages. As applied to personal injuries, and notice to a remote seller, it becomes a booby-trap for the unwary. The injured consumer is seldom 'steeped in the business practice which justifies the rule,' We conclude, therefore, that even if plaintiff did not give timely notice of breach of warranty to the manufacturer, his cause of action based on the representations contained in the brochure was not barred."

- "A manufacturer is strictly liable in tort when an article he places on the market, knowing that it is to be used without inspection for defects, proves to have a defect that causes injury to a human being. Recognized first in the case of unwholesome food products, such liability has now been extended to a variety of other products that create as great or greater hazards if defective."
- "Although in these cases strict liability has usually been based on the theory of an express or implied warranty running from the manufacturer to the plaintiff, the abandonment of the requirement of a contract between them, the recognition that the liability is not assumed by agreement but imposed by law * * * and the refusal to permit the manufacturer to define the scope of its own responsibility for defective products * * * make clear that the liability is not one governed by the law of contract warranties but by the law of strict liability in tort. Accordingly, rules defining and governing warranties that were developed to meet the needs of commercial transactions cannot properly be invoked to govern the manufacturer's liability to those injured by their defective products unless those rules also serve the purposes for which such liability is imposed."
- "The purpose of such liability is to insure that the costs of injuries resulting from defective products are borne by the manufacturers that put such products on the market rather than by the injured persons who are powerless to protect themselves."
- "It should not be controlling whether plaintiff selected the machine because of the statements in the brochure, or because of the machine's own appearance of excellence that belied the defect lurking beneath the surface, or because he merely assumed that it would safely do the jobs it was built to do."
- "To establish the manufacturer's liability it was sufficient that plaintiff proved that he was injured while using the Shopsmith in a way it was intended to be used as a result of a defect in design and manufacture of which plaintiff was not aware that made the Shopsmith unsafe for its intended use."

Today, courts continue to work out the details of strict liability, by addressing such issues as defenses (misuse, extension of contributory negligence, comparative negligence, assumption of risk, etc.) causation, scope of duty, and the applicability and extension of strict tort liability to particular products, sellers, and circumstances (see Hunter, Shannon, & Amoroso, 2018a).

In 1965, the American Law Institute embraced the *Greenman* principle in Section 402A of the Restatement (Second) of Torts. It states:

> *"1. One who sells any product in a defective condition unreasonably dangerous to the user or consumer or to his property is subject to liability for physical harm thereby caused to the ultimate user or consumer, or to his property, if*
> *a. The seller is engaged in the business of selling such a product, and*
> *b. Is expected to and does reach the user or consumer without substantial change in the condition in which it is sold.*
>
> *2. The rule applies although:*
> *a. The seller has exercised all possible care in the preparation and sale of his product, and*
> *b. The user or consumer has not bought the product from or entered into any contractual relation with the seller."*

The *Greenman* decision, coupled with Section 402A (originally thought to apply only to food and drink cases), has provided the intellectual basis for the transition from warranty to strict liability in tort and *represented the beginning of modern products liability law.*

As a general rule, the basic elements of strict products liability cases may be stated as follows:

1. The defendant is in the business of producing or selling the product;

2. The product was expected to and did reach the purchaser without substantial change in the condition in which it was sold;

3. The product was defective [in design, manufacture, or warnings] when it left the defendant's control;

4. The harm resulted when the product was being used in a reasonably foreseeable manner;

5. The person harmed was foreseeable [later expanded to include a bystander]; and

6. The defect was the cause in fact and proximate cause [legal cause] of physical harm to the plaintiff's person or property.

Courts, commentators, scholars and even *professors* have advanced a variety of "policy justifications" for the imposition of strict tort liability. The following are the most prevalent and are summarized briefly (see Hunter, Shannon, & Amoroso, 2018c, pp. 160-162):

1. Loss Spreading: It is fair to shift losses from an individual to all consumers of a product by imposing strict liability on manufacturers, thus, forcing manufacturers to insure against losses in order to spread such losses among all purchasers through appropriate pricing policies.

2. Deterrence/Incentive: Imposing strict liability on manufacturers provides them with an incentive to market safer products. Strict liability induces manufacturers to go beyond traditional negligence standards of a "reasonable manufacturer," especially if the cost of the added safety measures is less than the potential cost of liability for the failure to undertake measures as indicated by a cost/benefit or risk/utility analysis—most especially if the cost of any change or modification is minimal.

3. Encouraging Useful Conduct: Strict liability, based upon risk/utility while recognizing that there is some risk in all areas of human activity, will continue to encourage manufacturers to produce useful products. A plaintiff will not be compensated simply because he or she has been injured; rather, a plaintiff is still required to prove that a defect exists, thus holding out to the manufacturer that proper conduct will not result in the imposition of liability.

4. Proof Problems: Modern complexities in manufacturing make it very difficult to establish negligence, since the manufacturer is at a relative advantage in terms of access to expertise, information, and resources. Strict liability eliminates a plaintiff's need to prove negligence and may eliminate proof of identity of a defendant through the imposition of *enterprise liability* (see *FTC v. Tax Club, Inc.*, 2014; Hunter, Shannon & Amoroso, 2017).

5. Protection of Consumer Expectations: Since modern advertising and marketing techniques induce consumers to rely on manufacturers to provide them with safe, high quality products, consumers should come to expect protection from latent defects in products through the imposition of strict liability.

6. Cost Internalization: Forcing manufacturers to compensate victims of defective products through the purchase of appropriate products liability insurance (Pearl, 2001) or by making an enlightened decision to essentially "self-insure" will lead to a more efficient allocation of resources and pricing of products to include all of their true costs, including costs associated with damages caused by defective products. If financial reserves are already available from which injured parties can be compensated, manufacturers will be more apt to admit liability rather than "stonewall" the plaintiff in handling complaints of product defects.

5. Scope of Liability

There have been significant developments in cases that have considered the imposition of strict liability other than in sales transactions (see generally Hunter, Amoroso, & Shannon, 2012a; 2012b). Two questions must be asked: First, can product liability law be applied in these circumstances? Second, would the imposition of strict liability be appropriate in these circumstances? The court in *Martin v. Ryder Truck Rental, Inc.* (1976) makes an important

point relating to the development of liability and notes **"*the common law must grow to fulfill the requirements of justice as dictated by changing times and conditions.*"**

5.1. Leasing

A sale is defined as the "passing of title between a buyer and a seller." Section 402A of the Restatement, setting forth the requirements for the imposition of strict liability, would certainly apply to a sale ("one who sells a product... .") Likewise, an action based on warranty (either express or implied—especially one involving the warranty of merchantability) would apply in the case of a sale. However, the question remains: *Can areas be expanded or is a sale strictly required for liability to be applied?*

In *Martin v. Ryder Truck Rental, Inc.* (1976), the Supreme Court of Delaware heard an appeal of the order of the trial court that had granted summary judgment in favor of a defendant in a lawsuit based on strict liability in a leasing or bailment case (Shannon & Hunter, 2021). On appeal, the court reversed the judgment of the lower court, holding that in a bailment-lease of a motor vehicle, entered into "in the regular course of a truck rental business," was subject to the application of the doctrine of strict tort liability if the truck proved to have a defect that proximately caused injury or property damage to the plaintiff.

Today, courts regularly apply strict liability to a both *sale* and to *lease* (bailments) transactions (see Shannon & Hunter, 2021), holding that there is little difference in supplying products to the public in either a sale or lease transaction. However, as indicated by *Martin*, it is clear that courts will apply strict liability to a lease, but only if the lessor is "in the business" of leasing products of this kind, and where the product itself has been "introduced into the stream of commerce" through a lease entered into "in the regular course of the rental business."

Subsequent to *Martin*, liability has been expanded to a variety of other transactions (Paterson & Sicco, 2022), depending on the specific facts developed—in such cases as *product demonstration cases, supplying free samples, artificial intelligence* (Muftic, 2021) *or even in the case of a gift* where the product was defective.

5.2. Franchising

Franchising is a method of offering products and services identified with a particular trade name or trademark, which in turn may be associated with a patent, a trade secret, a particular product design, or management expertise. The franchise agreement establishes the legal and business relationship between the parties and regulates the "quality of the product" (Gomez, Gonzales, & Suarez, 2010; Glaser, Jirasek, & Windsperger, 2020), the sales territory, advertising, and other details of the relationship (see Lozada, Hunter, & Kritz, 2005; Hunter & Lozada, 2013a; 2023b).

5.2.1. *Kosters*: A Case Study

In *Kosters v. Seven-Up Company* (1979), the Sixth Circuit Court of Appeals heard an appeal in a case relating to the imposition of liability in the context of franchising in which the trial court considered whether an injured plaintiff was entitled to recover damages against the franchisor for a product that was found to be defective, which the franchisor had caused to be entered into the "stream of commerce" (see generally Morgan, 1987).

The Seven-Up Company appealed from a $150,000 jury verdict awarded for injuries caused by an exploding 7-Up bottle. The plaintiff had removed a cardboard carton containing six bottles of 7-Up from a grocery shelf, putting the carton under her arm, and headed for the check-out counter of the grocery store. The plaintiff was blinded in one eye when a bottle slipped out of the carton, fell on the floor and exploded, causing a piece of glass to strike her eye as she looked down. [The 7-Up carton was a so-called "over-the-crown" or "neck-thru" carton designed to be held from the top and made without a strip on the sides of the carton which would prevent a bottle from slipping out if held underneath.]

The carton was designed and manufactured by Olinkraft, Inc. Olinkraft sold the cartons to the Brooks Bottling Company, a *franchisee* of the defendant, Seven-Up Company. Seven-Up retained the right to approve the design of various supplies used by the bottler, including the cartons, in the course of carrying out its "quality control" obligations (see *Salazar v. McDonald's Corp.*, 2019; Glaser, Jirasek, & Windsperger, 2020; Siebert, 2021). The franchise agreement entered into between Seven-Up and the Brooks Bottling Company requires that "cases, bottles, and crowns used for 7-Up will be of a type . . . and design approved by the 7-Up Company," and "any advertising . . . material . . . must be approved by the 7-Up Company before its use by the bottler."

After securing Seven-Up's approval of the design of the packaging under the franchise agreement, Brooks packaged the bottles in cartons selected and purchased by Brooks from various carton manufacturers, including Olinkraft. Brooks then sold the 7-Up products to retail stores in various Michigan counties, including Meijers Thrifty Acres Store in Holland, Michigan, where the plaintiff picked up the carton and carried it under her arm toward the checkout counter. Plaintiff settled her claims against the bottler, the carton manufacturer, and the grocer for $30,000.

Seven-Up, however, denied liability, insisting its approval of the cartons was limited only to the "graphics" found on the cartons for the purpose of assuring that its trademark was properly displayed.

The trial judge submitted the case to the jury on five related theories of product liability, including a negligence theory, three theories relating to strict liability, and one contract theory. The Court of Appeals stated that it could not readily ascertain which of these theories the jury had accepted because it had returned a general verdict of liability. On appeal, Seven-Up argued that all of the theories were improper except the claim of negligence, arguing that the strict liability standard was inappropriate.

Seven-Up Company conceded that a franchisor, like a manufacturer or supplier, may be liable to the consumer for its negligence, without regard to privity, under the doctrine of *MacPherson v. Buick Motor Co.* (1916). Seven-Up contended, however, that it does *not* carry the liabilities of a supplier when it did not supply the product and that other theories of strict tort liability do not apply.

The question before the Court of Appeals was whether Michigan's principles of "strict accountability" extended to a franchisor who retains the *right of control* over the product (the carton) and specifically *consents to its distribution* in the form sold, but does not actually manufacture, sell, handle, supply, ship, or require the use of the product.

The Court of Appeals found that the Seven-Up Company introduced the bottles of its carbonated soft drink into the "stream of commerce." The Company also "assumed and exercised a degree of control" over the "type, style, size and design" of the carton in which its product was to be marketed. The carton had, in fact, been submitted to Seven-Up for inspection.

> "With knowledge of its design, Seven-Up consented to the entry in commerce of the carton from which the bottle fell, causing the injury. The franchisor's sponsorship, management and control of the system for distributing 7-Up, plus its specific consent to the use of the carton, in our view, places the franchisor in the position of a supplier of the product for purposes of tort liability."

The Court of Appeals laid down a rule that may be applied broadly in the context of franchising: "When a franchisor consents to the distribution of a defective product bearing its name, the obligation of the franchisor to compensate the injured consumer for breach of implied warranty, we think, arises from several factors in combination:

> (1) the risk created by approving for distribution an unsafe product likely to cause injury,
>
> (2) the franchisor's ability and opportunity to eliminate the unsafe character of the product and prevent the loss,
>
> (3) the consumer's lack of knowledge of the danger, and
>
> (4) the consumer's reliance on the trade name which gives the intended impression that the franchisor is responsible for and stands behind the product. Liability is based on the franchisor's

control and the public's assumption, induced by the franchisor's conduct, that it does in fact control and vouch for the product."

While the *Kosters* case was decided in the context a breach of the implied warranty, it is now recognized that most courts now *practically equate the implied warranty of merchantability with the application of strict liability in tort* (see Geistfeld, 2006, p. 252). Rapson (1965, p. 700) made the direct connection between the warranty of merchantability and strict liability in tort, stating that:

> "It appears, then, that the criterion for establishing that an article is 'defective' for purposes of strict liability in tort is synonymous with the fitness criterion of merchantability set forth in [UCC] Section 2-314 (2)(c)." Shanker (1979, p. 556) added: "Almost every commentator who has seriously studied the problem has concluded that there is no difference; that strict tort liability requires the seller to deliver the same quality of goods as that required under the merchantability warranty."

5.3. Used Products

As a general rule, courts have conceded that a seller "who is free from fault in the usual sense" may be held strictly liable for a defective product (see *Wights v. Staff Jennings,* 1965). As a result, over time, courts would extend liability to non-manufacturer sellers and distributors of *new* goods "in part, on the assumption that these groups would place pressure on the manufacturer to produce safe products. Courts also believed that retailers and distributors might be more accessible to suit than manufacturers" (Dept. of Commerce, 1976).

Tillman v. Vance Equipment Company (1978) addressed the question whether strict liability should be applied in cases of "used goods." The plaintiff alleged that the defendant seller was liable because of a defectively designed crane and for failing to provide adequate warnings of the danger. The trial court found for the defendant because the crane was a "used piece of equipment" and was sold "as is," holding that "a seller of used goods is not strictly liable in tort for a defect in a used crane when that defect was created by the manufacturer."

Justice Traynor, the author of the seminal opinion in *Greenman v. Yuba Power Products, Inc.* (1963) offered a rationale for the imposition of strict liability to non-manufacturers in *Vandermark v. Ford Motor Company* (1964) by noting:

> "Retailers like manufacturers are engaged in the business of distributing goods to the public. They are an integral part of the overall producing and marketing enterprise that should bear the cost of injuries resulting from defective products. In some cases, the retailer may be the only member of that enterprise reasonably available to the injured plaintiff. In other cases, the retailer himself may play a substantial part in insuring the product is safe or may be in a position to exert pressure on the manufacturer to that end; the retailer's strict liability thus serves as an added incentive to safety."

However, in cases involving used goods, would the court adopt the same rationale? The *Tillman* court stated:

> "While dealers in used goods are, as a class, capable like other businesses of providing for the compensation of injured parties and the allocation of the cost of injuries caused by the products they sell, we are not convinced that [other considerations] weigh sufficiently in this class of cases to justify imposing strict liability on sellers of used goods generally."

The *Tillman* court concluded that:

> "Holding every dealer in used goods responsible regardless of fault for injuries caused by defects in his goods would not only affect the prices of used goods; it would work a significant change in the very nature of used goods markets. Those markets, generally speaking, operate on the apparent understanding that the seller, even though he is in the business of selling such goods, makes no particular representation about their quality simply by offering them for sale. If a buyer wants some assurance of quality, he typically either bargains for it in the specific transaction or seeks out a dealer who routinely offers it (by, for example, providing a guarantee, limiting his stock of goods to those of a particular quality, advertising that his used goods are specially selected, or in some other fashion). The flexibility of this kind of market appears to serve legitimate interests of buyers as well as sellers."

In sum, *Tillman* stands for the proposition "that the sale of a used product, without more, may not be found to generate the kind of expectations of safety that the courts have held are justifiably created by the introduction of a new product into the stream of commerce."

In terms of meeting the "risk-reduction aspect of strict products liability," the position of the used-goods dealer is normally entirely outside the original chain of distribution of the product. As a consequence, the court concluded that:

> "any risk reduction which would be accomplished by imposing strict liability on the dealer in used goods would not be significant enough to justify our taking that step. The dealer in used goods generally has no direct relationship with either manufacturers or distributors. Thus, there is no ready channel of communication by which the dealer and the manufacturer can exchange information about possible dangerous defects in particular product lines or about actual and potential liability claims."

As a corollary, UCC Section 2-314 warranty actions may be applicable to the sale of used goods but "only to the extent reasonable." However, warranties can be disclaimed, and in most cases used goods will be sold "as is" or "with all faults"—essentially negating all warranties (Hunter, 2016; see also Hunter, Shannon, & Amoroso, 2019), especially the warranty of merchantability.

5.4. Property Cases

In Kriegler v. Eichler Homes, Inc. (1969), the plaintiff filed an action for physical injury sustained as the result of the failure of a radiant heating system in a home constructed by Eichler Homes, Inc. and Joseph L. Eichler. The court framed the issue as follows: Was the defendant liable to the plaintiff on the theory of strict liability"?

The *Kriegler* court noted that to this point, strict liability had been applied "only to manufacturers, retailers and suppliers of personal property and rejected as to sales of real estate" (citing *Connolley v. Bull*, 1968), stating that "the doctrine applies to any case of injury resulting from the risk-creating conduct of a seller in any stage of the production and distribution of *goods*."

In extending liability under these circumstances, the court would make an important point: "We think, in terms of today's society, there are no meaningful distinctions between Eichler's mass production and sale of homes and the mass production and sale of automobiles and that the pertinent overriding policy considerations are the same." Echoing the view that the law of products liability must reflect the "realities" of modern manufacturing, production, and advertising, the *Kriegler* court added:

> "Law, as an instrument of justice, has infinite capacity for growth to meet changing needs and mores. Nowhere is this better illustrated than in the recent developments in the field of products liability. The law should be based on current concepts of what is right and just, and the judiciary should be alert to the never-ending need for keeping legal principles abreast of the times. Ancient distinctions that make no sense in today's society and that tend to discredit the law should be readily rejected as they were step by step in Greenman and Vandermark."

The *Kriegler* court noted with approval the opinion of the Supreme Court of New Jersey in *Schipper v. Levitt & Sons* (1965). In *Schipper*, the purchaser of a mass-produced or manufactured home sued the builder-vendor for injuries sustained by the child of a lessee when the child was injured by excessively hot water drawn from a faucet in a hot water system that had been installed without a mixing valve which the court stated was a latent defect. The Supreme Court held that the builder-vendor was liable to the purchaser on the basis of strict liability, stating:

> "When a vendee buys a development house from an advertised model, as in a Levitt or in a comparable project, he clearly relies on the skill of the developer and on its implied representation that the house will be erected in reasonably workmanlike manner and will be reasonably fit for habitation. He has no architect or other professional adviser of his own, he has no real competency to inspect on his own, his actual examination is, in the nature of things, largely superficial, and his opportunity for obtaining meaningful protective changes in the conveyancing documents prepared by the builder vendor is negligible. If there is improper construction such as a defective heating system or a defective ceiling, stairway and the like, the

well-being of the vendee and others is seriously endangered and serious injury is foreseeable. The public interest dictates that if such injury does result from the defective construction, its cost should be borne by the responsible developer who created the danger and who is in the better economic position to bear the loss rather than by the injured party who justifiably relied on the developer's skill and implied representation."

Perhaps the most important reason for imposing strict liability in cases involving what are known as *development or mass-manufactured* homes was based on public policy considerations:

"Buyers of mass produced development homes are not on an equal footing with the builder vendors and are no more able to protect themselves in the deed than are automobile purchasers in a position to protect themselves in the bill of sale."

5.5. Service Transactions

Courts have been reluctant to extend the definition of a "product" beyond the actual article manufactured, distributed, sold, or supplied, and not to the *process or service* under which it is supplied.

Courts recognize the existence of two types of service transactions: pure services and hybrid transactions that involve *both* products and services. Courts will not apply strict liability *at all to pure services*, relying instead a negligence standard. Thus, a pure service transaction *where strict liability would not be applied* may best be described as follows: *The negligent installation of a non-defective product.* In the case of professionals who render services, where the issue is one of negligence, the standard of "reasonable care" will be that of a "professional under such circumstances." In practical terms, this standard of "due or reasonable care" will be higher or greater than that of the ordinary, reasonable man because of the training required of a physician, lawyer, or some other professional and the reliance of the public on that expertise (Bieber, 2022).

However, in a "mixed or hybrid" transaction, the majority rule is that the *product itself must be defective.* Some courts, however, have held that *if a service component is involved at all*, even as it relates to a defective product, strict liability is not appropriate and a *negligence standard should be applied.*

6. Theories of Damages in a Products Liability Case

What damages might an injured plaintiff expect to recover in a products liability case? (Hunter, Shannon, Amoroso, & Lozada, 2017).

In general, damages must be *foreseeable* and must not be "remote"; that is, they must "flow naturally and directly from the breach" and must be of the type and character that an ordinary and reasonable person would anticipate in the "reasonable anticipation that the harm or injury is a likely result of the product defect." A plaintiff is entitled to recover all foreseeable damages in a cause of action in tort under either a negligence or strict liability theory. In the case of a warranty action, where a plaintiff is seeking consequential damages for *lost profits*, courts require that the damages be "within the clear contemplation of the parties at the time the contract was created" (see, e.g., *Hadley v. Baxendale,* 1854).

There are two main types of damages awarded in product liability cases: damages awarded for economic losses (*economic damages*) and damages awarded for non-economic losses (HG.org, 2023). Economic damages are designed to compensate a plaintiff for financial losses caused by a defective product (Hunter, Shannon, Amoroso, & Lozada, 2017).

Damages for economic loss are ascertainable in products liability cases through proof or of an "offer of proof." Depending on the jurisdiction, economic damages are sometimes referred to as *compensatory damages* or as *general damages* and stem from an "immediate, direct, and proximate result" from the wrong. Economic damages include medical bills and expenses; loss of wages, the cost of any disability involving continuing medical expenses, and property loss for replacing or repairing property.

On the other hand, non-economic loss damages may be awarded to the plaintiff to compensate the plaintiff for non-financial losses. Non-economic loss damages include compensation for emotional suffering (Hunter & Amoroso, 2011), physical suffering, and other losses that are often difficult to quantify. Non-economic damages may also include damages for loss of consortium (also called "loss of society") which may be awarded in a situation where the injuries a plaintiff suffered has had a negative impact on a marriage or on the relationship between a wife or husband (Pirelli & DeMarco, 2022).

In the case of consequential damages for injury to the person in the case of *consumer goods* (goods purchased for "personal, family or household use"), UCC Section 2-719 states explicitly that an attempt to limit or exclude such damages would be unconscionable (thus probably not enforced by a court). However, in the case of *producer goods*, where the loss is commercial, such a limitation or exclusion is not unconscionable because the damage may be compensable either through an alternative theory or cause of action, may be compensable through business insurance, or in the case of an injury to an employee or worker, through the workers' compensation system. No such exclusion is possible in a case brought under the theory of strict liability, which is one of the advantages of filing a lawsuit under the strict liability regime.

6.1. Punitive Damages

Punitive or exemplary damages are damages awarded to a plaintiff *over and above* economic and non-economic damages, where a wrong done to the plaintiff was aggravated by circumstances of violence, oppression, or malice. For example, punitive damages may be awarded as a result of fraud, through proof of "wanton or wicked conduct" on the part of the defendant, to punish a defendant for "evil behavior," or, in certain cases, to make an example of the defendant (see Hunter, Shannon, Amoroso, & Lozada, 2017).

In general, punitive damages are not available in warranty actions, but may be available in other tort actions, where the conduct is termed "outrageous," "reprehensible and intentional," or showing "flagrant indifference to public safety." This would include cases brought under the theory of strict liability.

6.2. Case Study: Acosta v. Honda Motor Company, Ltd. (1983)

In *Acosta*, the defendants claimed that punitive damages were not appropriate because, no matter what the evidence, punitive damages were "fundamentally inconsistent with a regime of strict products liability in general, and with Section 402A in particular."
Although this question was one of *first impression* in the Virgin Islands, the court noted that "many courts, both state and federal, have already considered the issue, and the overwhelming majority have concluded:

> "That there is no theoretical problem in a jury finding that a defendant is liable because of the defectiveness of a product and then judging the conduct of the defendant in order to determine whether punitive damages should be awarded on the basis of 'outrageous conduct' in light of the injuries sustained by the plaintiff. Punitive damage awards provide a useful function in punishing the wrongdoer and deterring product suppliers from making economic decisions not to remedy the defects of the product."

The court added, "As long as a plaintiff can carry his burden of proof under Section 402A, there is no inconsistency in his also being permitted to offer proof regarding the nature of the manufacturer's conduct" that would warrant the imposition of punitive damages.

The Restatement (Second) of Torts, Section 908(2) includes a specific provision regarding punitive damages:

> "Punitive damages may be awarded for conduct that is outrageous, because of the defendant's evil motive or his reckless indifference to the rights of others. In assessing punitive damages, the trier of fact can properly consider the character of the defendant's act, the nature and extent of the harm to the plaintiff that the defendant caused or intended to cause and the wealth of the defendant."

"Nowhere in that section or the comments did the drafters suggest that these principles should not apply to strict products liability, and we concur with the considered opinion of the Court of Appeals for the Fifth Circuit that "punishment and deterrence, the basis for punitive damages . . ., are no less appropriate with respect to a product manufacturer who knowingly ignores safety deficiencies in its product that may endanger human life" than in other cases in which "the defendant's conduct shows wantonness or recklessness or reckless indifference to the rights of others."

6.1.3 Standard of Proof for Awarding Punitive Damages

In *Roginsky v. Richardson-Merrell, Inc.* (1967, p. 852), Judge Friendly's observed that "the consequences of imposing punitive damages … are so serious" that "particularly careful scrutiny" is warranted. "If one accepts the proposition that the consequences of punitive damages can be 'momentous and serious,' then justice requires increasing the burden of persuasion of the plaintiff in a punitive damages action." As a result, a plaintiff seeking punitive damages, at least in an action in which liability is predicated on Section 402A, must prove the requisite "outrageous" conduct by clear and convincing proof" (*Wangen v. Ford Motor Co.*, 1980).

The court added that for:
"Conduct to be considered reckless it must be unreasonable; but to be reckless, it must be something more than negligent. It must not only be unreasonable, but it must involve a risk of harm to others substantially in excess of that necessary to make the conduct negligent. It must involve an easily perceptible danger of death or substantial physical harm, and the probability that it will so result must be substantially greater than is required for ordinary negligence" (see also Rapp, 2008).

In *Fischer v. Johns-Manville Corporation* (1986), the Supreme Court of New Jersey detailed the circumstances under which punitive damages would be appropriate in failure-to-warn, strict products liability actions, when a manufacturer is:

(1) aware of or culpably indifferent to an unnecessary risk of injury, and
(2) refuses to take steps to reduce that danger to an acceptable level. This standard can be met by a showing of "a deliberate act or omission with knowledge of a high degree of probability of harm and reckless indifference to consequences" (see also *Berg v. Reaction Motors*, 1962).

The *Fischer* court added that punitive damages should bear some "reasonable relationship to actual injury," but the New Jersey Supreme Court declined to require a set numerical ratio between punitive and compensatory damages. Punitive damages
"Would be justified than when substantial compensatory damages are awarded. The profitability of the marketing misconduct, where it can be determined, is relevant. Other factors to be considered include the amount of the plaintiff's litigation expenses, the financial condition of the enterprise and the probable effect thereon of a particular judgment, and the total punishment the enterprise will probably receive from other sources."

7. Defenses Available in a Strict Liability Case

There are two defenses that are generally available in strict liability cases: assumption of risk (Takhshid, 2021) and misuse (Adler & Popper, 2019).

7.1. Assumption of Risk

There are two versions of assumption of risk: express or contractual assumption of risk and implied assumption of risk. The essence of the defense of assumption of risk in a products liability case can be found in the following statement: "One who voluntarily chooses to use a chattel with a complete realization, regardless of how it was acquired, of the risks to which he thus exposes himself voluntarily assumes such risks" (Hursh & Bailey, 1974).

Implied assumption of risk rests on the plaintiff's consent to relieve the defendant of the obligation of conduct toward him and to take his "chances" of harm from a particular risk. There are three general aspects of implied assumption of risk:

1. The nature and extent of risk must be fully appreciated and known;
2. The risk must be voluntarily encountered;
3. The risk is "normal and natural" and not one that could not reasonably be expected.

In *Heil v. Grant* (1976), the plaintiffs sued the defendant under a theory of strict liability for defective design of a hoist mechanism and for a failure to warn of the hazard. The defendants offered evidence of the defenses of *assumption of risk* and *misuse* by the defendant.

The *Heil* court noted that "an injured person's knowledge of a dangerous condition or defect is measured subjectively, i.e., by that person's *actual, conscious knowledge*. The fact that the injured person should have known of the danger will not support the assumption of risk defense." Whether an injured person actually knew of the danger is within the province of the jury (*Hillman-Kelley v. Pittman*, 1972). The court added:

> "The danger encountered must be both known and appreciated to raise the assumption of risk defense…. If by reason of age, or lack of information, experience, intelligence or judgment, Decedent did not understand the risk involved, he will not be taken to have assumed that risk (Restatement (Second) of Torts, Section 496D, comment c).

There is also a legal principle known as "contractual" or "express assumption of risk" where there is an agreement between the parties that one party will bear the risk of injury, even it is caused by the other party's negligence, or where limitations are placed on liability to specific dollar amounts. These contracts, limitations, or disclaimers will be enforced so long as they are both reasonable and not unconscionable and do not contravene "public policy."

In warranty actions, assumption of risk deals with the requirement of reliance and is associated with the rule that a buyer cannot sue for breach of warranty for a defect if the defect would have become known through a reasonable inspection. Thus, "One who voluntarily chooses to use a chattel with a complete realization of the risks to which he thus exposes himself voluntarily assumes such risks… ."

In strict liability cases, assumption of risk involves a plaintiff who voluntarily encounters a risk that he or she subjectively knows and appreciates. In *Heil*, the court noted that knowledge of some "general hazard" involved in operating a product will not support the assumption of risk defense. There must be "actual" or "charged" knowledge of a specific hazard by using a subjective test.

7.2. Misuse

Misuse is a well-recognized defense in a strict liability case." In *Perfection Paint & Color v. Konduris* (1970), the court noted that the defense of misuse is available when the product is used "in a manner not reasonably foreseeable for a reasonably foreseeable purpose." The court noted that "the defense of contributory negligence of the plaintiff in failing to discover a defect in a product or in failing to guard against the existence of a defect is not misuse of the product and is, therefore, not a defense to strict liability in tort" (Section 402A). The court further stated that:

> "A consumer who incurs or assumes the risk of injury by virtue of his continuing use of a product after having discovered a defect or who uses a product in contravention of a legally sufficient warning, misuses the product and, in the context of the defenses of incurred risk, is subject to the defense of misuse."

From the perspective of a manufacturer, the court categorized misuse as "… use of the product in a manner not reasonably foreseeable for a reasonably foreseeable purpose," or "in a situation in which a product is used for a purpose which is unforeseeable with that for which it was manufactured, or when used for a foreseeable purpose,

is subjected to an unforeseeable or overly harsh use" (*Greeno v. Clark Equipment Company*, 1965; see also Hunter & Solano, 2015).

However, as the court in *Dosier v. Wilcox & Crittendon Co.* (1975) stated: "In applying our rule our courts have held that it should be narrowly applied and even an 'unusual use' which the manufacturer is required to anticipate should not relieve the manufacturer of liability in the absence of warnings against such use."

In addition, misuse may be found when a product is used in "contravention of warnings and instructions" provided for the proper or correct use of the product. However, it may be foreseeable that a product would be misused (based upon the facts, market surveys, incident reports, etc.), and such "misuse" may not be considered as or qualify as "misuse" in a legal sense (Copenhaver, 2023). The defendant may have to take specific steps or precautions to guard against such "foreseeable misuse," especially where the plaintiff was unable to comprehend the inherent danger in any misuse of the product (e.g., by a child). Copenhaver (2023) writes: "Companies should therefore evaluate the potential uses to which their products may be put and decide whether and when they need to take action with respect to any such 'misuse.'"

As an element of the defense against misuse, the defendant may introduce evidence that the product was not in a defective condition when it left the seller's hands. Generally, if a product is not defective at the time of its delivery, the defense of misuse will lie and will be an absolute defense. However, "such a safe condition at the time of delivery by the seller will include proper packaging, necessary sterilization, and other precautions required to permit the product to remain safe for a normal length of time when handled in a normal manner" (Comment g to Section 402A).

Comment h to Section 402A provides some interesting examples of misuse.

"If the injury results from abnormal handling, as where a beverage is knocked against a radiator to remove the cap, or from abnormal preparation for use, as where too much salt is added to food, or from abnormal consumption, as where a child eats too much candy and is made ill, the seller is not liable. Where, however, he has reason to anticipate that danger may result from a particular use, as where a drug is sold which is safe only in limited doses, he may be required to give adequate warning of the danger, and a product sold without such warning is in a defective condition."

7.3. Is Comparative Negligence Applicable to Strict Liability in Tort Cases?

The practice of apportionment of damages based upon a theory of comparative negligence was created in order to mitigate against the harshness of the common law rule which held that contributory negligence on the part of a plaintiff was an *absolute bar* to recovery of damages. Comparative negligence standards are adopted under a statute enacted by a state legislature.

Under a comparative fault standard, damages are apportioned according to the proportion of fault attributed to each party. This apportionment is accomplished through a procedure known as a *special verdict* (Adelstein, 2023), under which a jury answers specific questions as to the *amount of damages* and the *percentage of fault* attributed to each party. Most courts will not employ a comparative negligence standard in a case where the negligence of the plaintiff was equal to or greater than the negligence of the defendant (equal to or more than 50%). Ironically, courts today have expanded this concept beyond negligence and apply comparative negligence standards to both misuse and assumption of risk, apportioning damages. The comparative negligence standard has also been applied to strict liability.

In *Daly v. General Motors Corporation* (1978), the court considered whether the principle of comparative negligence applies to actions founded on strict products liability (see Hubbard & Sobocinski, 2018). The plaintiff's theory of recovery was strict liability for damages allegedly caused by an improperly designed door. Interestingly, the court reiterated an important point:

"From its inception, however, strict liability has never been, and is not now, absolute liability. As has been repeatedly expressed, under strict liability the manufacturer does not thereby become the insurer of the safety of the product's user. On the contrary, the plaintiff's injury must have been caused by a

"defect" in the product. Thus the manufacturer is not deemed responsible when injury results from an unforeseeable use of its product."

Secondly, the *Daly* court noted that:

"Though most forms of contributory negligence do not constitute a defense to a strict products liability action, plaintiff's negligence is a complete defense when it comprises assumption of risk. As will thus be seen, the concept of strict products liability was created and shaped judicially. In its evolution, the doctrinal encumbrances of contract and warranty, and the traditional elements of negligence, were stripped from the remedy, and a new tort emerged which extended liability for defective product design and manufacture beyond negligence but short of absolute liability."

In *Li v. Yellow Cab Co.* (1975, pp. 824-825), the court stated "the defense of assumption of risk, insofar as it is no more than a variant of contributory negligence, was merged into the assessment of liability in proportion to fault. Importantly, the court continued: "The application of comparative principles to strict liability treat[s] alike the defenses to both negligence and strict products liability actions. *In each instance the defense, if established, will reduce but not bar plaintiff's claim."*

The *Li* court also commented on "A third objection to the merger of strict liability and comparative fault focuses on the claim that, as a practical matter, triers of fact, particularly jurors, cannot assess, measure, or compare plaintiff's negligence with defendant's strict liability." In response, the court stated, "We are unpersuaded by the argument and are convinced that jurors are able to undertake a fair apportionment of liability."

The court concluded "that a system of comparative fault should be and it is hereby extended to actions founded on strict products liability… ," suggesting that the term '*equitable apportionment of loss*' is more accurately descriptive of the process, nonetheless, the term '*comparative fault'* has gained such wide acceptance by courts and in the literature that we adopt its use herein" (see also McNichols, 1994).

8. Potential Plaintiffs in a Suit Based on Strict Liability

Traditionally, courts have focused almost exclusively on the purchaser or buyer in determining issues relating to who may bring suit for damages (Hunter and Amoroso, 2012a; Geistfeld, 2006, p. 198). This focus on the purchaser or buyer is based on the Restatement (Second) relating to strict liability in tort, in which a party who offers a product for sale impliedly warrants or promises that the product can safely perform its intended and perhaps foreseeable functions. Because there is a correlation between strict liability and warranty, the comments of Professor Geistfeld (2006, p. 252) may also be relevant: "The implied warranty accordingly protects the consumer's reasonable expectation that the seller has provided a non-defective product, and the frustration of this safety expectation justifies holding the seller strictly liable for the defect."

Specifically referencing the law of warranties under Section 2-318 of the UCC, the language is instructive:

> **Alternative A**
> A [seller's](#) warranty whether express or implied extends to *any natural person who is in the family or household of his [buyer](#) or who is a guest in his home if it is reasonable to expect that such person may use, consume or be affected by the [goods](#) and who is injured in person by breach of the warranty*. A seller may not exclude or limit the operation of this section.
> **Alternative B**
> A [seller's](#) warranty whether express or implied extends to any *natural person who may reasonably be expected to use, consume or be affected by the [goods](#) and who is injured in person by breach of the warranty*. A seller may not exclude or limit the operation of this section.
> **Alternative C**
> A [seller's](#) warranty whether express or implied extends to *any person who may reasonably be expected to use, consume or be affected by the [goods](#) and who is injured by breach of the warranty*. A seller may

> not exclude or limit the operation of this section with respect to injury to the person of an individual to whom the warranty extends.

It is also true that under a negligence standard, it might be possible to include a party other than the purchaser or buyer as a potential plaintiff—but only as long as the third party is "foreseeable" (see *Palsgraf v. Long Island R.R.*, 1928), either determined by a judge as a matter of law or as a question of fact by a jury.

Should such a "foreseeable party" include a bystander?

8.1. Is a Bystander Protected as a Potential Plaintiff? (Hunter, Shannon, & Amoroso, 2016)

Who is a bystander? A bystander is someone who is not directly involved in the purchase or use of the product. Bystanders are affected by the product because they are often *near* the person who purchased or used it and are injured in person by the defective product. In *Sills v. Massey-Ferguson* (1969), the U.S. District Court for the Northern District of Indiana held that bystanders may recover under strict liability. In fact, Owen, Madden, & Davis (2000, p. 269) noted that after the adoption of the Restatement, decisions in many jurisdictions have now "almost unanimously allowed foreseeable bystanders, including rescuers to recover for their injuries caused by defective products." Smith (2013, pp. 634-635) noted that the *Sills* court had offered many reasons for extending recovery to a bystander which may be extrapolated to cases decided in other states:

> "First, Indiana does not require privity in recovery for breach of implied warranty, so there was no policy reason to require privity for tort recovery. Second, the court stated that '[t]he public policy which protects the user and consumer should also protect the innocent bystander.' The court cited a Michigan Supreme Court case holding that 'it would be unjust and totally unrealistic to distinguish between the user and a bystander by saying that one could recover but the other could not.' Finally, the court looked to the standard for establishing a manufacturer's duty: whether it was foreseeable that the plaintiff would be affected by the product's defect. The court reasoned that this standard did not preclude bystander recovery because harm to a bystander could be foreseeable. However, the court specifically refrained from deciding whether the fact that a bystander would be harmed must have been foreseeable, a requirement that would bring the proof required in strict liability actions closer to what is required in negligence suits."

On policy grounds, the court noted in *Giberson v. Ford Motor Co.* (1974, p. 12), "the same precautions required to protect the buyer or user would generally do the same for the bystander" reasoning that "… there is no essential difference between the injured user or consumer and the injured bystander." (Giberson, 1974, p. 11). *Giberson* had not been decided in a policy vacuum. In addition to the *Sills* decision in 1969, the California Supreme Court had decided one of the first cases involving neither the buyer nor user of a product—in this case a plaintiff driving an oncoming vehicle involved in a crash when a drive shaft in a defective automobile buckled, causing its driver to lose control of the car on a highway. Clearly, the driver/owner/buyer would be protected under a theory of strict liability. But what about the plaintiff who was driving the "other car," who was neither a purchaser nor a user of that car, and who might thus be legally classified as a bystander?

In *Elmore v. American Motors Corp.* (1969), decided five years before the Missouri court's decision in *Giberson*, the California Supreme Court ruled that the bystander plaintiff could recover against the manufacture under a theory of strict products liability: "An automobile with a defectively connected drive shaft constitutes a substantial hazard on the highway not only to the driver and passenger of the car but also to pedestrians and other drivers. The public policy which protects the driver and passenger of the car should also protect the bystander" (*Elmore*, 1969, p. 89). Professor Geistfeld (2006) offers an expansive policy argument for the extension of strict products liability to bystanders:

> "From a practical standpoint, there is a major distinction between a consumer and a bystander: unlike a consumer or buyer of a product, the bystander is not in a position to make a product choice. It is clear that American consumers have benefitted greatly from the imposition of a general duty on the part of a manufacturer to warn, which will assure that the ordinary consumer will be provided with the material information required to make an informed decision about purchasing a product. Therefore, the fact that consumers have choices may even encompass limitation of liability provisions in certain cases where there is an availability of the relevant safety options, coupled with knowledge of the attendant risks in using a product."

However, noted Professor Geistfeld, these choices "should not necessarily limit the liability of product sellers with respect to third-party harms." (Geistfeld, 2006, p. 253). Geistfeld cites an interesting example. In *Passwaters v. General Motors* (1972), the buyer purchased an "ornamental hubcap" for an automobile which contained "protruding spinning blades" that severely injured a rider of a motorcycle. The flippers or blades only "serve[d] the purpose of aesthetic design." Because the buyer-consumer understood the nature of the product and the dangers inherent in such use, it could be argued that the hubcap did not frustrate the buyer-consumer's expectations of safety. However, did it create an unreasonable risk of harm for the plaintiff motorcycle rider – classified as a bystander – who had been severely injured by the hubcap? Indeed, the plaintiff's expert witness (a Ph.D. in agricultural engineering and theoretical applied mechanics) had testified that the "protruding blades moving at high speeds in an unshielded area constituted an unsafe design to persons who might come within their vicinity" (*Passwaters,* 1972, p. 1272).

9. Concluding Commentary

Greenman v. Yuba Power Products, decided by the California Supreme Court in 1963, marks the beginning of the recognition of the theory of strict liability in tort as the preferred vehicle for seeking damages when a product proves to be defective. Because the common law theories of negligence, breach of warranty, or misrepresentation or fraud for recovery—not specific to products cases—presented plaintiffs with certain formidable "obstacles," strict liability is now the basis of the great majority of product cases. Yet, application of these standards through case decisions will continue to evolve, particularly in response to changes in the development, manufacturing and use of products, new theories of causes of actions and defenses are being considered, and defendants are more aware than ever of their responsibilities to buyers and others to provide safe, affordable products without defects.

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Assessing the Effects of In-service Training on the Performance of Ghanaian Basic School Social Studies Teachers

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Abstract
This study investigated the effects of in-service training on Social Studies teachers' performance in Ghana. The study area was Offinso Municipality in the Ashanti Region. To achieve this purpose, the study examined the various training programmes available to teachers, the effect of training on the teachers' performance and explored ways to improve teachers training at Offinso Municipality. The study adopted a quantitative approach and research design was descriptive survey. Questionnaire was used in getting data from respondents. The population of the study consisted of 550 teachers at Offinso Municipality in the Ashanti Region. However, 232 teachers were sampled using simple random technique. Data was collected and analyzed using quantitative analysis. The study found out that external or extramural courses were prepared for teachers as well as industrial experiences. The study found out that training among Social Studies teachers at Offinso Municipality had a moderate positive significant relationship with teachers' performance. It was also found out that teachers' in-service training could be improved at Offinso Municipality when copies of training modules were given to teachers after training to serve as reference materials. The study concluded that in-service training is statistically significant and positively related to Social Studies teachers' performance. Finally, the study recommends that Ghana Education Service should improve upon its in-service training and development policy to be consistent with the needs of teachers in general.

Keywords: Performance, In-Service Training, Social Studies Teachers, Effects, Ghanaian Basic Schools.

1. Introduction

Teachers are specially educated and trained to acquire the needed knowledge and skills that will make them effective in their work as teachers. Obviously, regular engagement with teachers to be current in new trends of teaching helps to endow them with both pedagogical and content knowledge that will impact positively in their performance.

The entire education process is designed by many significant agents, and the teacher plays an integral role in these agents. The teacher is requested to play a central role in education as he assumes the role as the implementer of the school curriculum (Tay & Wonkyi, 2018). Teacher preparation is therefore pivotal in realizing the aims of education in so far as the school system is concerned. Preparing teachers for the teaching profession is conceived as being a higher priority in any country since this profession is considered as being challenging and critical and may lead to nations' rising and progress in the different domains.

As a huge agency, education has great importance in building strong and developed societies, and the teacher is one of the primary agents for achieving that (Edens & Suzanne, 2013). For such reasons, it is always an urgent educational need that teachers should receive adequate educational and professional training to possess adequate knowledge and teaching skills and to be able to dedicate themselves to the teaching profession. Training has become the most significant factor in the organisational world today, because it upsurges the efficiency and the effectiveness of both employees and the organisation (Raja, Furqan & Khan, 2011). Teachers having gone through preparations at their college levels need to continuously upgrade their skills and knowledge to enable them to play their roles well.

Shaheen, Naqvi, and Khan (2013) defined training as a systematic development of the knowledge, skills and behaviour required by employees to do adequately on confirmed task or job. According to Amin, Aziz, Halamek and Beran (2013) in-service training is simply learning that is provided in order to improve performance on the present job. In-service training presents a prime chance to extend the learning base of all employees. Most employees have a few shortcomings in their working environment aptitudes and require regular interaction through training to help them overcome such shortcomings (Tay & Wonkyi, 2018).

The in-service training makes a strong working environment (Tabassi, Ramli, & Bakar, 2012). Workers may access training they would not have generally thought about or searched out themselves. Workers who feel acknowledged and tested through training may feel more fulfillment toward their occupations (Daily, Bishop & Massoud, 2012). In-service training projects builds communication between different levels of an organisation. Any deficiency in processes and jobs is eliminated and those close to production processes become involved in the management (Tabassi, Ramli, & Bakar, 2012). Staff empowerment will only be successful when proper training is provided to those empowered.

In the fast pace changing world of education and technological advancement and environmental uncertainty, it is imperative for educational players to realize the limitations of dealing with new challenges and should therefore invest in training and retraining programmes to make their employees competent enough to face uncertainties and take effective decision in time and remain competitive in the market (Tai, 2016).

In-service training can simply be defined as the relevant courses and activities in which a serving teacher may participate to upgrade his or her professional knowledge, skills, and competence in the teaching profession. Therefore, it encompasses all forms of education and training given to a teacher who is already on the job of teaching and learning (Osamwonyi, 2016). According to Billing (1976 cited in Osamwonyi,2016) in-service education is staff development which is a deliberate and continuous process involving the identification and discussion of present and anticipated needs of individual staff for furthering their job satisfaction and career prospects and of the institution for supporting its academic work and plans, and implementation of programmes of staff activities designed for the harmonious satisfaction of these needs.

Generally, the teachers are regarded as the hub of educational development. Therefore, in-service education is concerned with the activities and courses in which a serving teacher may participate for the purpose of upgrading his or her professional skills, knowledge and interest, subsequent to initial training. In this case, in-service education is designed to fill the gap of professional inadequacies of a serving teacher. As Fisher (2003) has rightly pointed out the skill appropriate for generations ago might no longer prepare students for the world beyond school. Students are being tasked to be more creative and thoughtful in their daily activities.

In-service education is also referred to as continuing education that is designed for the retraining, reskilling and updating the knowledge of manpower. According to UNESCO (1985) continuing education can be regarded as the entire body of educational processes whatever the content level and method, whether formal or otherwise, whether they prolong or replace initial education in schools, colleges and universities as well as in apprenticeship, whereby persons regarded as adults by the society to which they belong develop their abilities, enrich their knowledge, improve their technical or professional qualifications or turn them in a new direction and bring about changes in their attitudes or behaviour in the two-fold perspective of full personal development and participation on balance and independent social, economic and cultural development.

Papay, Taylor, Tyler and Laski (2016) see the teachers' role in education as very vital and identify some basic qualities and indicators of the teacher's performance such as good knowledge of the subject matter, ability to understand the student differences, ability to develop student competence, resourcefulness, good leadership capacity, self-discipline, and these qualities have significant impact on the teachers' job performance. This probably warranted Amaele (2010) to see teachers as prominent actors that interpret and transmit the desirable knowledge, skill, attitudes and values in the society. The implication is that the capacity of the teachers' knowledge and skill affect the teachers' job performance.

Empirically, studies conducted by Hervie and Winful (2018) and Antwi, Anderson and Abagali (2016) in Ghanaian Senior High Schools, revealed that lack of frequent in-service training, lack of teaching and learning materials, lack of incentives and motivation, and improper supervision have direct influence on science teachers' performance.

However, there is no fundamental study that has been conducted to investigate the effects of in-service training of teachers of Social Studies in the Basic School on their performance in the Offinso Municipality of the Ashanti Region of Ghana. Therefore, this study sought to fill the gap in examining the effects of in-service training of Social Studies teachers in the Basic School on the teachers' performance in the Offinso Municipality.

1.1. Objectives of the study

Specifically, the study sought to:
1. examine the effects of in-service training on the Basic School Social Studies teachers' performance.
2. explore ways to improve teachers in-service training at Offinso Municipality

1.2. Research Questions

To achieve the research objectives, the following questions were set to guide the study.
1. What are the effects of in-service training on the performance of basic school Social Studies teachers' performance?
2. In what ways can the in-service training of teachers can be improved to equip them with the requisite skills that will enable them to perform effectively on their work?

2. Methodology

This aspect virtually looked specifically into areas such as research approach, research design, population, sample and sampling techniques, instrumentation and procedure for data collection and data analysis.

2.1. Research Approach

The research approach was quantitative. This approach to research is specific, well structured, has been tested for their validity and reliability, and can be explicitly defined and recognised (Gefen, Rigdon & Straub, 2011, Creswell, 2018).

2.2. Research Design

The study adopted the descriptive research design. This was adopted because it is a scientific method which involves observing and describing the behaviour of a subject without influencing it in any way. It involves gathering data that describes events and then organises, tabulates, depicts, and describes the data collection (Xiaodan & Deepark, 2019). The descriptive research design was chosen mainly because it comprises a cross-sectional design in relation to which data are collected predominantly by questionnaire or by structured interview (Buchanan & Bryman, 2007). It also provides evidence concerning an existing situation or current conditions; hence surveys provide a more accurate picture of events and seek to explain people's perception and behaviour based on data gathered at a point in time. Further, it has the advantage of producing good responses from a wide range of people and it involves accurate and objective collection of data to describe an existing phenomenon (Amaratunga, Baldry, Sarshar & Newton, 2002).

2.3. Population of the Study

Babbie, Halley and Zaino (2007) posit that study population is the group or community that a researcher intends to carry out research on for the purpose of generalisation. Kotzab (2005) refers to a study population as the entire group of respondents or elements relevant to research. Umair (2018) adds that population refers to the target group that research intends to study or treat. The population for this research constitutes five hundred and fifty (550) Social Studies teachers at the Primary and the Junior High levels in the Offinso Municipality.

2.4. Sample and Sampling Procedure

Hair (2000) defines sampling as selecting a group of people or object from a targeted population for a study. Similarly, Sarantakos (2007) pointed out that sampling is a process of choosing the units of the target population which are to be included in a study. Crews and Creswell (2018) posit also that sampling procedures deal with the various approaches of getting the exact number of the study group out the target population. This refers to the individuals of which the research is conducted. A sample assist a researcher to study a relatively smaller percentage of the larger target population in which the results may be a representation of the larger group. It hence reduces the challenge of having to include the whole population in the study. Using Yamane (1967) sample size formula with a margin of error of 5% and 95% confidence interval, sample size of 232 was used. Respondents were randomly selected to participate in the study.

$$n = \frac{N}{1 + N\,(e)^2\}}$$

Where: n = Desired Sample Size   N = Total Population   e = error limit   1= A constant

$$n = \frac{550}{\{1 + 550\,(0.05)^2\}}$$

$$n = \frac{550}{\{1 + 550\,(0.0025)\}}$$

$$= \frac{550}{\{1 + 1.375\}}$$

$$= \frac{500}{\{2.375\}}$$

$$= \quad 232$$

2.5. Study Area

The study area for this research was the Offinso Municipality. Ghana Education Service (GES) often organize training workshops for Teachers at the Municipality to boost their skills in delivery and knowledge base.

2.6. Data and Sources

The study made use of primary and secondary source of data collected from Social Studies teachers at Offinso Municipality using questionnaires. Some of the data collected from the field were the socio-demographic characteristics of respondents, training programmes and performance level of the respondents. The secondary data included journals, books, articles.

2.7. Data Collection Instruments

A self-administered questionnaire was used in the data collection. The questionnaire had three sections (A, B and C). Section "A" dealt with the demographic characteristics of respondents. The Section "B" focused on training programmes available for teachers including Social Studies teachers at Offinso Municipality. Section "C" focused on the performance of respondents. The questionnaire comprised close ended questions. Close-ended questions were relevant because they were easy to ask and quick to answer. Another reason was that analysis of closed-ended questions was easy and straight forward.

2.8. Data Collection Procedure

After formal permission for the data collection was granted by management of the various schools, the questionnaires were self-administered to the respondents to participate in the study. The purpose of the study was to be explained to them to pave way for retrieval of the questionnaires from the respondents without difficulty. This mode of primary data collection provided the opportunity for the researcher to establishing rapport with the respondents, thereby ensuring higher recovery rate (Leedy & Ormrod, 2010).

2.9. Data Analysis

Collected questionnaires must be managed properly if decision-making is to be made of it. Consequently, it is important that raw data is handled properly to transform it into information for the purpose of decision-making. The questionnaires that were retrieved would first be sorted out to find out those that were not answered and to check for consistency, clarity, and accuracy of recording. Each of the questionnaires was given an identification number to avoid double entry or data loss. The questionnaires would be coded using the SPSS Version 25.0 template. The SPSS aided in the analysis of the data collected. For all the objectives, one and two descriptive statistics such as frequencies and percentages were used in making the analysis. Regression analysis would be used to analyse the objectives three.

3. Discussion

3.1. Teachers' Performance

It was imperative to assess the level of teachers' performance before examining how training regresses on performance. Nine (9) indicators (items) were used to measure the level of job satisfaction and the measurement of this was done using mean and standard deviation to measure their level of agreement where SD = strongly disagree, D = disagree, N = neutral, A = Agree and SA = Strongly Agree.

The mean showed the average responses to each item whereas the standard deviation showed the variation in the responses to each item. Also, on a scale of 1 to 5, the accepted midpoint is 2.9 such that any mean score below 2.9 is regarded as disagreement and mean score above 2.9 is regarded as agreement. According to Wan, Wang, Liu & Tong (2014), anytime measures of central tendencies are computed, there is the need to also compute the measure of variation. However, there is no threshold for acceptable variation, but each variation can be compared with the variations of other items under the same construct. Table 4 therefore present the results of the level of teachers' performance as at Offinso municipality.

Table 4: Level of Teachers' Performance

Statement	Mean	Std. Deviation
I have improved on my leadership qualities	3.11	.88
I understand the values of my job	3.03	.66
I now have positive attitude towards work	3.06	.709
I have improved on my classroom management	3.15	.60
I am able to motivate students to study	3.16	.61
I have also been very effective in my job	3.12	.73
I have improved in skills in teaching	3.03	.48
I counsel my students	3.08	.60

3.2. Effect of In-Service Training on Social Studies Teachers' Performance

The objective one looked at the effect of in-service training on social studies teachers' performance at Offinso Municipality. Regression analysis was done where the linearity and the relationship between the two variables were analyzed with in-service training as the independent variable and teacher performance as the dependent variable. **Table 4** gave the model summary of the output, and it displays the R, R squared, adjusted R squared, and the standard error. R is the Pearson product moment correlation coefficient which indicates the strength and direction of the linear relationship between the dependent variable (teachers' performance) and the independent variable (in-service training). Hence from **Table 4**, training and employees' performance are positively correlated, and the strength of the relationship is strong at 0.641.

The R Square explains the amount of variation that exists in the dependent variable (teacher performance) caused by the independent variable (in-service training). Therefore, the result further indicates that 41.0% variation in the teachers' performance (as dependent variable) is explained by the independent variable (in-service training) and the remaining 59.1% is explained by the residual (other factors not captured by the model). The implication is that an increase in in-service training programs would result in a moderate increase in social studies teachers' performance and as such, in-service training alone cannot influence the teachers to perform well.

Table 4: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.641[a]	.410	.408	3.47335

a. Predictors: (Constant), TRP

Table 5 is the ANOVA table which provides the test significance for R and R^2 using the F-statistic. The F statistic is the regression mean square (MSR) divided by the residual mean square (MSE). If the significance value of the F statistic is small (smaller than say 0.05) then the independent variables do a good job explaining the variation in the dependent variable. In this analysis, the ρ-value is well below .05 (ρ = .000). Therefore, it can be concluded that, the R and R^2 between in-service training and employees' performance is statistically significant.

Table 5: ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	1930.267	1	1930.267	160.001	.000[b]
	Residual	2774.750	230	12.064		
	Total	4705.017	231			

a. Dependent Variable: Employee Performance
b. Predictors: (Constant), TRP

The Table 6 also provides information that is useful for understanding the regression equation. Under the column marked unstandardized coefficient and sub-column B, the numerical value for the first row, labelled (constant), is the value for the intercept (a) in the regression equation. The numerical value on the second row, labelled as training in this case (representing the independent variables), is the value for the slope (b) for the regression equation. Based on these results, the researcher can report the following regression equation, predicting employees' performance based on the available training program.

Y (Employees' performance) = 19.234 + 0.446X (Training)

Hence, taking the values for the slope and the intercept in the resulting regression equation, the following assertions could be made. According to the intercept, when there is no training program for employees, thus, when training is zero, employees' performance will be at 19.234, and according to the slope, for any training given to employees (teachers), there will be an increase in employees' performance by (26.6%). Therefore, training at Offinso Municipality has a moderate significant influence on employees' performance.

Table 6: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	T	Sig.
1	(Constant)	19.234	1.217		15.807	.000
	INT	.446	.035	.641	12.649	.000

a. Dependent Variable: Employee Performance

This finding is in line with a study by Macleani (2018) whose study revealed that there were positive and significant relationships between teacher learning, teacher growth, teacher needs, teachers' collaboration and job performance in public senior secondary schools in Rivers State in NIgeria. Hervie and Winful (2018) for instance, revealed that, poor performance of teachers was due to lack of frequent in-service training, lack of teaching and learning materials, lack of incentives and motivation, and improper supervision. As such training teachers enhanced their performance.

Further, the findings were in line with Antwi, Anderson and Abagali (2016) whose study revealed that science teachers had initial low self-efficacy beliefs but developed high self-efficacy beliefs after the in-service training. Okoye and Onuoha in Okolie (2015) also found that teachers' quality through regular training enhanced the teachers' teaching quality and the development programmes. Lastly, the findings corroborate with Essel, Badu, Owusu-Boateng and Saah (2009) whose study result also showed that more than 60% of the teachers were in favor of getting more training, acquiring new attitudes and skills in order to help them excel in their teaching profession and sharing their gained information with other colleagues and pupils/students they teach.

3.3. Ways Training of Teachers can be Improved at Offinso Municipality

The last research objective sought to determine from respondents the ways training of teachers can be improved at Offinso Municipality. The question was open-ended, and respondents were made to suggest ways of improving the training of teachers. Their responses were grouped into themes. The majority of the respondents mentioned that training modules are collected back immediately after the program, and they hardly remember everything learnt. As such their suggested that the copies of the modules be given to them after training to serve as a reference material. Also, others suggested that there should be frequent check-ups by trainers to various schools to verify

the progress of teachers after training. This, most asserted that would urge teachers to be mindful of the teaching behaviour.

The respondents, especially the female counterparts, averred that there should be equal opportunities for both sexes with respect to teachers training at the municipality. They stated that most of times, there is gender discrimination where the males are in the realm of affairs of training in the Metropolitan and Municipalities. In other to improve training of teachers, the respondents suggested that apart from training program organized for the municipality, each school should have a trainer so that periodically, that person could train the teachers based on the conditions presented at each school. Others suggested that they were either late or unable attend to training because of transportation constraints. Some indicated that they were from far places and others complained about fare charges.

Similarly, the respondents suggested that starting time for training program should be on time to enable prospective trainees in the hinterland go back home on time since transportation to some areas were difficulty. The respondents claimed that adoption of modern technology should be inculcated in the training of the teachers in the municipality. To them, the use of these modern gadgets would help a long way in promoting easy understanding of the outlines of the training program.

These suggestions by respondents were somewhat in line with recommendations of many studies (Salimans, Goodfellow, Zaremba, Cheung, Radford & Chen, 2016; Gulrajani, Ahmed, Arjovsky, Dumoulin & Courville, 2017; Hervie & Winful; 2018; Antwi, Anderson and Abagali (2016; Essel, Badu, Owusu-Boateng and Saah (2009). For instance, Hervie and Winful (2018) recommended that Ghana Education Service should improve upon its in-service training and development policy to be consistent with the needs of teachers. More so, periodic learning needs assessments should be conducted before training programmes are designed for teachers. Again, Antwi, Anderson and Abagali (2016) and Essel, Badu, Owusu-Boateng and Saah (2009) also training should time bound, and conscious effort be made to allow trainees to reflect on the training.

4. Conclusions

This study has provided an overview and relevant discussion on the relationship between training and teachers' performance at Offinso municipality. The study concluded that among others, extramural courses industry experience, coaching, job instructions, job rotation, conference and simulation are training programmes that could be offered to Social Studies teachers to enhance their skills, knowledge, and competencies in the teaching profession.

The study further concludes with confirmation to other studies and assertions that training is statistically significant and positively related to teachers' performance at Offinso Municipality. However, the effect on employee's performance at the Sub-metro is moderate.

Lastly, the study concludes that copies of training modules should be given to teachers after training to serve as a reference material. Correspondingly, there should be recurrent check-ups by trainers to various schools to substantiate the progress of teachers after training as well as equal opportunities to both sexes with respect to teachers training at the municipality.

5. Recommendations

Based on the study's conclusions, the following recommendations were hereby made.

1. The study recommended that Ghana Education Service should improve upon its in-service training and development policy to be consistent with the needs of teachers. More so, periodic learning needs assessments should be conducted before training programmes are designed for teachers.

2. Also, since the effect was moderate, the study recommended that Ghana Education Service should adhere to suggestions made by the respondents (teachers) in the form of copies of training modules, regular check-ups, and equal opportunities to both sexes to boost morale, hence performance.

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Voices of Tourism-Related Personnel Regarding Their Problems and English Language Needs: A Case Study of the Tourism Industry in Phang Nga, Thailand

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Abstract
English is widely used in Thailand's tourism industry by tourism-related personnel for communication, negotiation, and transactions with foreign tourists. This study aimed to examine the problems and needs relating to improving English language skills among 150 tourism-related personnel in Phang Nga province and the communication problems experienced by 50 foreign tourists. The researchers employed questionnaires and interviews to collect the data and analyzed the collected data using percentages, means, standard deviations, and content analysis. The findings indicated moderate English-language problems among tourism-related personnel in Phang Nga (Mean = 3.39, S.D. = 1.04) and confirmed by foreign tourists (Mean = 3.40.S.D. = 0.68). The most problematic area was writing skills (Mean = 3.57, S.D. = 1.18), followed by reading skills (Mean= 3.42, S.D. = 1.04). However, it was also observed that tourism-related personnel in Phang Nga province needed to enhance their listening skills (Mean = 3.60, S.D. = 1.09), followed by speaking skills (Mean = 3.53, S.D. =1.08). The majority of personnel (83.3%) expressed a desire to attend English training. The study suggests developing an English training program tailored to the specific needs of tourism-related personnel to enhance their English proficiency for effective communication at work.

Keywords: English Language Need, English Problems, Tourism-Related Personnel, Tourism Industry

1. Introduction

Tourism is a crucial sector that significantly contributes to socio-economic development and employment (Hassan, 2017). In Thailand, it is one of the fastest-growing industries, ranking second in terms of income among service sectors. Approximately 20 percent of Thailand's GDP comes from tourism revenues (WTTC, 2020), highlighting its vital role in the country's economy. The popularity of Thailand as a tourist destination is attributed to its natural attractions, cultural heritage, delightful cuisine, traditional customs, and excellent service.

Located near Phuket in southern Thailand, Phang Nga is a breathtaking tourist destination known for its beautiful beaches, cultural attractions, exceptional dining choices, and peaceful national parks. The tourism offerings in Phang Nga have generated substantial profits, positioning the province as an economically significant area in Thailand. It ranks eighth among Thailand's top provinces in tourism revenue, showcasing consistent growth (TAT Newsroom & TAT Newsroom, 2019). Enhancing the English language skills of tourism personnel in Phang Nga is essential for improving the industry's quality, impressing tourists, and showcasing the country's tourism potential.

Effective English communication plays a crucial role for tourism personnel in various sectors across Thailand (Piriyasilp, 2014). Despite efforts to enhance the tourism industry, concerns about English proficiency among tourism-related employees persist (Piriyasilp, 2014). Many studies have demonstrated that strong English skills are essential for interacting with foreign visitors and leaving a positive impression (Chaichana et al., 2017; Kaewkasi & Hetthong, 2019; Promwatcharanon & Chatreepinyo, 2018; Pulket et al., 2015; Yomyao, 2017). These studies also emphasize the need to improve language skills in different tourism-related roles (Chaichana et al., 2017; Kaewkasi & Hetthong, 2019; Promwatcharanon & Chatreepinyo, 2018; Pulket et al., 2015; Yomyao, 2017).

Phang Nga was chosen as the primary focus of this study due to recognized challenges in English proficiency within the local tourism industry (The Office of Strategy Management, Andaman, n.d.). Phang Nga's tourism sector plays a substantial role in Thailand's economy, attracting an increasing number of foreign tourists and generating significant revenue (Tourism Authority of Thailand, 2020). Despite the adverse effects of the pandemic, it is imperative to persist in efforts to strengthen Thailand's tourism industry as a vital economic force. Enhancing the competitiveness of tourism-related personnel, particularly in Phang Nga, holds great importance. Proficient English communication among tourism-related personnel can enhance business management, boost personnel confidence, and create a favorable impression on foreign tourists, ultimately bolstering Thailand's tourism potential.

To adapt to the changing demands and direction of the tourism industry, this study aims to investigate the English communication problems and needs of tourism-related personnel in Phang Nga Province. Specifically, the study seeks to identify the specific English skills needed to enhance work efficiency and explore the problems related to English communication with foreign tourists. The valuable findings from this study can be utilized to develop effective strategies and techniques to equip tourism-related personnel to support tourism growth in Thailand. These insights aim to enhance the preparation of personnel to accommodate the increasing number of tourists, thereby contributing to the overall progress of Thailand's tourism industry. Moreover, the results of this study can be utilized to design English training programs tailored to the specific needs of tourism-related personnel, enabling them to utilize English in their careers effectively.

2. Literature Review

According to statistics from Phang Nga Provincial Tourism and Sports Office (2020), the number of foreign tourists visiting Phang Nga Province is increasing. Therefore, to cater to the growing number of tourists, tourism-related personnel in Phang Nga must be able to communicate effectively in English. The English used in tourism-related services differs from everyday English and requires a specialized structure based on the service's purpose. This difference highlights the importance of ESP (English for Specific Purposes) in the present study.

2.1 English for Specific Purposes

English for Specific Purposes (ESP) can be defined in various ways, but this study encompasses viewpoints from different ESP scholars. Hutchinson and Waters (1987) perceive ESP as a type of language instruction that considers learners' motivation to learn when determining the content and delivery. According to Richards and Schmidt (2010), ESP involves using English in language courses or instructional programs that are tailored to the specific needs of a particular group of learners. Dudley-Evans (1998) distinguishes ESP from general English by stating that it primarily targets adult learners at the tertiary level or in professional settings, aiming to address their specific needs. Additionally, Dudley-Evans and St. John (1998) argue that ESP is built upon the foundation of

need analysis, and its successful implementation leads to a focused course. Albakrawi (2013) supports this perspective by highlighting that accurately identifying needs makes learning objectives more attainable and enhances the appeal of the language course.

Based on these definitions, the focus of ESP in this study is to examine the actual English language problems and needs of tourism-related personnel in Phang Nga province, Thailand. When studying problems and needs, need analysis is a method used to identify the learners' goals, requirements, and challenges. Therefore, need analysis is considered critical in designing an ESP course that suits the learners' needs, and all educational programs should be based on a needs analysis to ensure effectiveness (Albakrawi, 2013).

2.2 Need Analysis

Needs analysis is a comprehensive process for gathering information about learners' needs. Graves (2000) defines it as a systematic and ongoing process of collecting information about learners' needs and interests, analyzing and interpreting the data, and making curriculum decisions to meet their needs for success. Similarly, Fatihi (2003) suggests that needs analysis is used to identify learners' necessities, needs, and gaps. Jordan (1997) emphasizes its importance in course development, stating that it is the first step in creating courses, syllabi, materials, and educational activities. According to Richard (2001), needs analysis serves three primary purposes: providing input into the content, design, and implementation of a language course; helping develop goals, objectives, and content; and evaluating existing programs. Widdowson (1990) argues that needs can be expressed as objectives and relates to what learners need to accomplish to master the language effectively. Hutchinson and Waters (1987) classify needs into two types: target needs and learning needs. Target needs encompass necessities, lacks, and wants, while learning needs refer to how learners acquire the foreign language in terms of the skills or strategies they prefer.

Based on these definitions, needs analysis can be utilized to identify the language skills necessary for learners to perform specific jobs, such as language learners, educators, officers, or staff. The information gathered from the needs analysis enables course designers to develop English for Specific Purposes (ESP) courses or materials that cater to the learners' interests and needs, select the most effective language instruction method, and ensure the relevance and applicability of the ESP course and materials. Additionally, the data obtained from the needs analysis can be utilized to develop English training courses or materials that meet their needs and enable them to use English more effectively in the workplace. Therefore, researching the problems and needs of tourism-related personnel in Phang Nga in using English is beneficial to prepare them for supporting the growth of Thailand's tourism industry.

2.3 Previous Studies

Several studies have investigated the problems and needs that arise when tourism-related personnel communicate in English in their workplaces. Scholars such as Ahmmed, Sinha, Khan, & Islam (2020), Bach (2015), Chan (2019), and Yi-Ling Lu (2018) have conducted studies on this topic. This issue has also been recognized in Thailand, with several researchers investigating the problems and needs of tourism-related personnel in various parts of the country. For example, Thinrat (2020) investigated the difficulties and needs of Buriram airport staff in developing English communication skills for interacting with foreign passengers, while Pulket, Supakavanich, & Wimuktanon (2012) focused on the English communication abilities of villagers in homestay village communities. Chaichana, Chiewcharn, & Thongnern (2017) examined hotel personnel's English communication problems when dealing with foreign guests. Yomyao (2017) studied the English language proficiency of registered nurses, while Kaewkasi and Hetthong (2019) analyzed the English communication problems encountered by tour guides. Phongpichitphoom (2017), Charoensuk, Chuai-in, & Wate cho (2018) investigated the English language problems experienced by travel agents, while Chomchuen and Rattanasak (2018) examined the English communication needs of public vehicle drivers. Thongsai and Sitipragan (2019) investigated the problems and solutions for improving English communication in local tourism businesses. Praesrisakul, Chaibunruang, & Purisarn (2019), Promwatcharanon and Chatreepinyo (2018), and Rungsavang and Clarke (2016) examined how tourist police officers dealt with English-speaking tourists. In a study conducted by Namtapi (2022), the researcher investigated the requirements, limitations, and preferences of tourism personnel who utilize English in their job in Ayutthaya province. Despite these studies, a limited number of research studies have investigated other tourism-

related personnel's communication problems and needs when using English. Piriyasilp (2014) conducted a large-scale study on the English language needs of tourism personnel in various settings in Khon Kaen, a northeastern province in Thailand. She collected data from 300 participants through questionnaires and interviews with a selected group. Her findings indicated how needs analysis could be used to develop ESP courses or materials that meet the learners' interests and needs. However, there has yet to be comprehensive research on how English is used by tourism-related personnel in Phang Nga, one of Thailand's most beautiful tourist destinations. As a result, the present study aims to address this gap.

3. Research Questions

This study aimed to investigate the English language-related problems faced by tourism-related personnel in Phang Nga province. To achieve this, the study aimed to answer the following research questions:
1. What are the problems tourism-related personnel faces in Phang Nga province when using English in their workplace?
2. How do foreign tourists' attitudes towards the English skills of tourism-related personnel affect their work in Phang Nga province?
3. What are the English language learning needs of tourism-related personnel in Phang Nga province to perform effectively at their work?

4. Method

The current study employed a mixed-methods approach, utilizing quantitative and qualitative research methods. Specifically, a survey research design was used to collect data from participants.

4.1 Participants

The research participants were divided into two groups for this study.

The first group included 150 participants purposively selected from tourism personnel working in Phang Nga Province. These participants were chosen from three districts (Takua Pa, Thai Mueang, and Muang) where English is commonly used for communication due to the presence of tourist attractions. A stratified purposeful sampling method was employed to account for the variation in tourism organizations' definitions and the difficulty in accurately predicting the number of tourism personnel in the province. Participants were selected from three types of tourism organizations: governmental organizations, private organizations, and community members, with 50 participants from each category. Each of the 150 participants completed a questionnaire, and 20 were further selected for semi-structured interviews.

The second group consisted of 50 foreign tourists visiting Phang Nga Province. These tourists were chosen using convenience sampling to provide insights into the English language problems faced by tourism-related personnel in Phang Nga province.

4.2 Instruments for Data Collection

Questionnaires

There are two questionnaires in this present study, including:

Questionnaire for tourism-related personnel:

The questionnaire used in this study was derived from previous studies conducted by Piriyasilp (2014) and Pochakorn, Chantarangkul & Sermsook (2018). It consisted of five sections:
  1. General information
  2. English skill problems encountered at work

3. Need for English skills at work
4. Need for English communication training to improve skills
5. Other comments

The first and fifth sections required participants to provide brief responses or select options. In contrast, the second, third, and fourth sections utilized a five-point Likert scale for participants to indicate their agreement or disagreement.

Questionnaire for foreign tourists:

The questionnaire used in this research consisted of three parts:
1. General information
2. Difficulties with English skills encountered by tourism workers in Phang Nga Province
3. Open-ended comments about the English skill problems faced by tourism-related personnel in Phang Nga Province

The original questionnaire was initially written in Thai, translated into English, and validated by experts to ensure clarity and eliminate potential content ambiguity. In the first part, participants were required to choose from given options, while the second part used a five-point Likert scale for participants to express their opinions. The third part included open-ended questions that allowed participants to freely share their perspectives on the English skill problems experienced by tourism-related personnel in Phang Nga Province.

Before distribution, the two questionnaires underwent a pilot test with 20 tourism-related personnel and 20 foreign tourists who were not part of the study. The questionnaires were evaluated by three experts, one from the tourism industry and two English lecturers, using the Index of Item-Objective Congruence (IOC), which ranged from -1 to 1. Items with an IOC score below 0.5 were excluded, while those above 0.5 were retained.

Semi-Structured Interview

The researchers utilized semi-structured interviews to gather detailed information for this study. The interview questions were created and tested with ten tourism-related personnel working in southern Thailand. After receiving feedback from these individuals and confirmation from three experts, five interview questions were selected for the study. The questions are as follows:
- How significant do you believe English is in your job?
- What English language skills are required for your work?
- What problems do you experience when utilizing English at work?
- Would you like to improve your English skills through training?
- How should English training be organized?

4.3 Data Collection Procedure

The data collection for this study was conducted in two stages.

In the first stage, the researchers obtained permission from 150 participants who were purposefully selected from the population of tourism-related personnel working in Phang Nga and 50 foreign tourists. The researchers then distributed the questionnaires to each participant and collected them after completion.

In the second stage, with their consent, 20 tourism-related personnel were purposefully selected to participate in interviews. The interviews were conducted in Thai and lasted approximately 20 minutes, depending on the participants' responses. The interviews were recorded with the participants' consent for transcription, translation, and analysis.

4.4 Data Analysis

The collected data from the questionnaires underwent analysis, including the utilization of the Cronbach Alpha coefficient to assess the questionnaire's reliability. A 5-point Likert scale was used to rate the English skill problems encountered by the participants at work, the need for English skills at work, and the need for English communication training to improve skills. The mean and standard deviation (S.D.) were used to calculate the average level of English skill needs, with higher mean scores indicating more significant levels of English skill problems and a higher need for English skills at work among tourism-related personnel and foreign tourists, as well as a need for English communication training among tourism-related personnel. The distribution of participants based on their general information was analyzed using frequency and percentage, while the standard deviation (S.D.) was used to measure the dispersion of scores among participants.

Finally, the information from the open-ended style questions in the fifth part of the questionnaire for tourism-related personnel and the third part for foreign tourists, as well as the semi-structured interview, was analyzed through a content analysis involving categorization, interpretation, and analysis.

5. Results and Discussion

Of the 150 participants, 95 were female, and 55 were male. The highest percentage of participants fell between the ages of 21-30. The majority of participants (60%) had obtained a bachelor's degree. A significant number of participants (23.3%) reported using English daily at work. When asked to self-evaluate their proficiency in English communication, most participants (56.7%) rated themselves as being fair in their English communication skills. The information collected from these 150 participants was analyzed and presented in alignment with the research objectives as follows:

5.1 Problems Faced by Tourism-Related Personnel in English Language Skills

Table 1: Tourism-related personnel's problems in using the four skills of English

English Skills	Mean (S.D.)	Level of Problems
Listening	3.31 (0.95)	Moderate
Speaking	3.29 (1.01)	Moderate
Reading	3.42 (1.04)	Moderate
Writing	3.57 (1.18)	High
Total	3.39 (1.04)	Moderate

According to the data analysis from Table 1, tourism-related personnel in Phang Nga encountered moderate English problems in their work, with a mean score of 3.39 (S.D. = 1.04). This moderate English problem extended to all skills, with writing being identified as the most challenging skill, with a mean score of 3.57 (S.D. = 1.18). These findings aligned with Kaewkasi and Hetthong's (2019) study, which reported similar difficulties in writing among tourist guides in the southern Gulf of Thailand. Limited opportunities for writing practice in the workplace contributed to a lack of confidence and increased fear of making mistakes. Interviews with a government officer and a barber in the community revealed that participants felt more confident in speaking English than writing due to apprehension about grammatical errors and limited education, respectively. However, both participants recognized the importance of communication skills in their work, emphasizing speaking and listening more than writing. These findings differed from Namtapi's (2022) study, which identified listening as the most problematic skill for tourism-related personnel. Nevertheless, the study highlighted the significant writing challenge for tourism-related personnel in Phang Nga. Addressing this problem could enhance overall English proficiency and improve their ability to communicate effectively with foreign tourists.

Upon examining the data for each skill, the findings suggested that the biggest challenge in listening skills for tourism-related personnel in Phang Nga was understanding idioms and slang words related to services, with an average score of 3.67 (S.D. = 0.94). This result indicated a moderate level of difficulty in comprehending these language aspects. These findings aligned with previous studies conducted by Charoensuk et al. (2018), Namtapi

(2022), and Phuyathip (2019), and where participants also reported problems in understanding slang words, unfamiliar vocabulary, and technical terms used by foreign tourists.

According to the participating personnel in the present study, the difficulty in understanding idioms and slang words led to misinterpretation or misunderstandings during communication, resulting in a loss of confidence in their English-speaking ability. One participant shared their experience, stating, "I could not understand my customers' specific needs due to the use of slang words, and it made me hesitant to engage in further conversation. I felt embarrassed when my colleagues explained the meaning to me later." This highlighted the practical implications of the problems, as it can hinder effective communication and potentially impact customer satisfaction.

Interestingly, listening to complaints was the least problematic aspect of listening skills, with an average score of 3.03. This finding contradicted the results of Phuyathip (2019), who reported that logistic staff needed help comprehending problems that might arise during work. However, an interesting comment from a private staff member shed light on a different aspect of this issue. He highlighted that different accents used in complaints could also cause difficulties in understanding and create problems in the workplace. This observation was consistent with the research conducted by Polsombat (2016), which indicated that participants encountered difficulties associated with accents, obstructing the efficiency of mechanics employees in performing their tasks. Overall, the results indicated that tourism-related personnel in Phang Nga faced problems with their listening skills, particularly in understanding idioms and slang words. These problems can lead to miscommunication and a loss of confidence. While listening to complaints was relatively less problematic, different accents still needed help understanding. These findings emphasized the importance of addressing these listening problems to improve the English proficiency and communication effectiveness of tourism-related personnel in Phang Nga.

The analysis revealed that tourism-related personnel in Phang Nga faced problems using English in their work, particularly in listening, speaking, and writing skills. Regarding speaking skills, introducing and providing details about tourist attractions was identified as the most problematic aspect (Mean = 3.61, S.D. = 0.90), followed by explaining the causes of problems during service (Mean = 3.60, S.D. = 1.04). However, greeting, welcoming, and saying goodbye were the least problematic aspects (Mean= 2.83, S.D. = 0.96), as these skills were considered fundamental and frequently used in communication with foreign tourists.

The interviews conducted for this study supported the finding that greeting, welcoming, and saying goodbye in English pose no problem for most participants. One private company employee stated, "I can greet and talk with my foreign customers about their everyday life. I don't see greeting foreigners and asking them about their daily life as my problem." Basic English communication skills, such as greeting or saying goodbye, are crucial for tourism-related personnel to perform their job effectively, as noted by Piriyasilp (2014). Ahmmed et al. (2020) also found that everyday communication activities, such as greetings and responses, were frequently observed and considered ordinary, with participants not perceiving them as problematic.

Regarding reading skills, the study found that the most challenging aspect for tourism-related personnel in Phang Nga was reading announcements and news in English (Mean = 3.57, S.D. = 0.85), followed by reading information about travel documents (Mean = 3.54, S.D. = 1.04). However, reading advertisements in English was manageable. Phuyathip's study (2019) supported the importance of reading skills in the tourism industry, with participants in her study also struggling with reading and comprehending news updates or announcements in English. The interviews conducted for this study revealed that participants needed help with unfamiliar vocabulary, mainly when dealing with academic or lengthy texts with complex grammar. One participant expressed, "I find it challenging to read news in English. The vocabulary and grammar are quite complicated, and I struggle to understand them. If I want to comprehend it, I might rely on an application to assist me." These findings highlighted the specific problems faced by tourism-related personnel in Phang Nga, emphasizing the need to address these problems to improve their English proficiency and effectively communicate with foreign tourists.

Moving on to writing skills, writing a report was identified as the most challenging problem for the participants (Mean = 3.93, S.D.=1.35), followed by writing letters, emails, or important notes to interact with foreign tourists.

This finding aligned with a study by Charoensuk, Chuai-in, & Wate cho (2018), which found writing tour trading documents from customer messages obtained through telephone conversations problematic. However, in contrast, Namtapi (2022) found that tourism personnel in Ayutthaya needed help with note-taking. Writing directions to tourist attractions was this study's least challenging aspect (Mean = 3.42, S.D. = 1.28). Participants explained their writing difficulties, with one stating, "I struggle with writing reports because I do not have much experience with it. It takes me much time to organize my thoughts and express them clearly in English." Another participant added, "I find writing emails to customers difficult because I need to be careful with my wording and tone. However, writing directions is not a problem for me because it is mostly about giving straightforward instructions."

In essence, while the English language proficiency of tourism-related personnel may be considered moderate, there was still a pressing need to improve their efficiency and achievements in their respective roles. This highlighted the significance of addressing the need to utilize the four essential English language skills in the workplace, as examined in this study.

5.2 Needs for Using the Four Skills of English at the Workplace

Since Phang Nga is a frequently visited destination for foreign tourists, tourism-related personnel must have English proficiency in their workplace. Table 2 presents findings from the questionnaires that support this claim.

Table 2: Tourism-related personnel's needs for using the four skills of English

English Skills	Mean (S.D.)	Level of Needs
Listening	3.60 (1.09)	High
Speaking	3.53 (1.08)	High
Reading	3.47 (1.13)	Moderate
Writing	3.42 (1.09)	Moderate
Total	3.50 (1.09)	High

This study found that tourism-related personnel in Phang Nga had a high need to use English at work, encompassing all four skills of English. This corresponded with previous research conducted by Chaweewan (2019), Kaewkunha (2021), Piriyasilp (2014), and Poonket, Supakwanit, & Wimonnkanon (2012), which also emphasized the importance of all four English skills for tourism-related personnel serving foreign tourists.

Listening skills emerged as particularly important among the four English skills, consistent with the findings of Kaewkunha (2021) and Kalasin and Charumanee (2015). Poonket, Supakwanit, & Wimonnkanon (2012) also identified listening and speaking skills as crucial for individuals in the homestay village community. The interview results in this study supported these findings, with a tourism-related staff member in a governmental organization highlighting the significance of practicing listening skills to understand and address the needs of foreign tourists. Similarly, a local seller emphasized the importance of strong listening skills for effectively selling food to foreign customers.

Upon analysis, it was found that the most critical aspect of listening for the participants was listening to the service needs of foreign tourists, with an average score of 3.76 (S.D = 0.98). This finding aligned with the ideas presented by Shen, Qian, & Chen (2020), who emphasized the significance of listening skills in face-to-face interactions, particularly for understanding customer needs and enhancing customer satisfaction. Additionally, the research conducted by Kalasin and Charumanee (2015) uncovered that listening to customers' demands emerged as the paramount proficiency essential for hotel staff across different travel destinations in Thailand, including Phuket, Koh Samui, and Hatyai.

The results of the study indicated that among tourism-related personnel, the skills of listening to various accents (Mean = 3.57, S.D. = 1.05), engaging in general conversation (Mean = 3.56, S.D. = 0.93), handling customer complaints (Mean = 3.54, S.D.= 1.22), and understanding slang words (Mean = 3.46, S.D.= 1.10) were perceived as less essential. This suggested that effective communication in the hospitality industry may emphasize the specific purpose and context of communication, as supported by previous research (Shen, Qian, & Chen, 2020).

The analysis of participants' English language needs revealed that the most critical need in terms of listening skills was listening to the service needs of tourists, with an average score of 3.76 (S.D.= 0.98). This was closely followed by the need to take notes or gather information about the tourists, with an average score of 3.69 (S.D.= 1.24). Interestingly, listening to idioms or slang words, the most challenging area in English skills was perceived as the least necessary aspect of listening (Mean= 3.46, S.D.= 1.10). These findings aligned with the research conducted by Shen, Qian, & Chen (2020), which emphasized the significance of listening skills in face-to-face interactions for understanding customer needs and enhancing satisfaction. Additionally, the study by Kalasin and Charumanee (2015) found that listening to customers' needs was the most vital skill required by hotel staff in various travel destinations in Thailand.

Overall, the study results suggested that while specific listening skills may pose challenges for tourism-related personnel, it was crucial to prioritize active listening to understand and cater to the service needs of tourists. By focusing on the essential aspects of listening identified in this study, professionals in the hospitality industry can improve their communication effectiveness and enhance customer satisfaction.

Regarding speaking skills, the essential aspect for tourism-related personnel was the ability to ask for information and needs from tourists, with an average score of 3.94 (S.D.= 0.87). The majority of the participants emphasized that communication confidence and negotiation skills were more critical during communication with customers. This finding was consistent with the study conducted by Phonsomboon (2020), which found that Thai vendors on Khaosarn Road identified difficulties in appropriate expressions, negotiation, and apologizing during communication with customers as their primary areas for improvement. Additionally, explaining the causes of mistakes during the service was considered necessary, with an average score of 3.76 (S.D.=1.03), followed by the need to say apologies, with an average score of 3.72 (S.D.=1.01). Correct intonation based on the situation was deemed the less necessary aspect of speaking skills, with an average score of 3.29 (S.D.=1.26). The need for speaking with correct grammar was the least essential aspect, with an average score of 3.07(S.D.= 1.36). These findings aligned with Phonsomboon's (2020) study, which showed that although Thai vendors faced challenges when communicating with foreign customers, they perceived speaking with correct grammar tenses to be a minor difficulty.

The study's findings revealed that the overall need for reading skills among tourism-related personnel was moderate, with an average score of 3.47 (S.D.= 1.13). However, when examining specific aspects, the need for reading tourist information and travel documents emerged as the most crucial skill, with an average score of 3.69. This highlighted the significance of comprehending and interpreting relevant travel documents for effective communication and customer service in the tourism industry. This finding was consistent with previous research by Poonket, Supakwanit, & Wimonnkanon (2012), who identified the importance of reading skills for individuals in the homestay village community. Their study emphasized the need to read various information related to tourism activities and services. Similarly, Kaewkunha (2021) found that reading skills were essential for tourism personnel to access and understand information to meet customer needs.

On the other hand, reading emails and business letters was identified as the least necessary aspect of reading skills among tourism-related personnel, as indicated by the lower average score of 3.26. While these skills may still be relevant for specific job roles within the tourism industry, they were considered less critical than other reading skills. Overall, the results suggested that while reading skills were essential for tourism-related personnel, the specific aspects of reading skills that hold the highest importance may vary depending on the nature of the job. Understanding and effectively utilizing tourist information and travel documents were crucial areas of focus to enhance communication and customer service in the industry.

The study's findings suggested that writing skills were essential for Phang Nga tourism personnel. However, among the four English skills examined, the participants rated writing skills as the least essential skill, with an average score of 3.42 (S.D.= 1.09). This indicated that while writing skills were necessary, they may be perceived as less critical than others. Further analysis revealed that filling in English forms was the most crucial aspect of writing skills, with an average score of 3.73(S.D.= 0.94). This finding was supported by the study conducted by Poonket, Supakwanit, & Wimonnkanon (2012), which highlighted the importance of filling in various forms

related to tourism activities and services for individuals in the homestay village community. Accurately completing forms was essential for efficient communication and proper documentation in the tourism industry.

On the other hand, writing emails and letters in English was considered the least critical aspect of writing skills among tourism-related personnel, with an average score of 3.14 (S.D.= 1.16). While this skill may still be relevant in specific job roles, it was deemed essential compared to other writing skills. These findings suggested that there may be variations in the specific aspects of writing skills that were deemed essential among tourism-related personnel in Phang Nga. Professionals in the tourism industry can utilize this information to identify the specific areas of writing skills that require improvement and tailor their training programs accordingly.

In conclusion, English language skills are indispensable for tourism-related personnel, but the importance of different skills may differ. Ensuring that tourism professionals possessed the necessary English language proficiency for their specific roles was crucial for their professional growth and success. By addressing the specific areas of writing skills that require improvement, professionals in the tourism industry can enhance their overall competence and effectively communicate with tourists and stakeholders.

5.3 Language Problems of Tourism-Related Personnel in Foreign Tourists' Perspectives

The researchers also collected data from foreign tourists to investigate the problems in English communication faced by tourism-related personnel in Phang Nga. The questionnaire responses revealed that 78% of the participants were male and 22% were female, with the majority aged between 41 and 50. Most tourists (52%) reported visiting Phang Nga to be with family.

Table 3: Language Problems of Tourism Personnel in Foreign Tourists' Perspectives

English Skills	Mean (S.D.)	Level of Problems
Listening	3.33 (0.64)	Moderate
Speaking	3.18 (0.71)	Moderate
Reading	3.44 (0.66)	Moderate
Writing	3.65 (0.73)	High
Total	3.40 (0.68)	Moderate

The findings presented in Table 3 shed light on the communication difficulties faced by tourism-related personnel in Phang Nga, specifically regarding their writing skills. The data revealed moderate problems (Mean = 3.40, S.D. = 0.68) when using English to communicate with foreign tourists, with the task of accurately documenting important information from direct conversations being the most challenging (Mean = 4.08, S.D.= 0.72). This contrasted with the findings of Chaichana, Chiewcharn, & Thongnan (2017), who reported that foreigners perceived a high level of communication problems in English at work, with speaking and phone conversations being the most problematic for tourism personnel. Writing announcements, notices, or regulations in English was also identified as a significant obstacle (Mean = 3.90, S.D.=0.82). An enlightening comment in response to an open-ended question emphasized that difficulties arise from the similarity in sounds between Thai and English, which could lead to potential misunderstandings when processing announcements. Additionally, writing to give directions to different locations (Mean = 3.90, S.D.= 0.82) posed a challenge, while filling out English forms was considered less problematic (Mean = 3.08, S.D.= 0.77) according to foreign tourists' perceptions. This difference may be attributed to the familiarity with writing patterns used when completing forms, as revealed in a comment from an open-ended questionnaire question.

The consistency between the perspectives of tourists and tourism-related personnel regarding the problems in writing skills supported the findings presented in Table 3. This suggested that the limitations in writing skills among tourism-related personnel in Phang Nga may be influenced by time constraints that limit opportunities for practice and usage. Additionally, the problems encountered in writing can be attributed to challenges in understanding unfamiliar vocabulary and grammar, leading to an inability to construct coherent sentences with correct grammar usage. The unique nature of writing, compared to other language skills, further compounded the

problems faced by personnel. These observations aligned with the research conducted by Phuyathip (2019), which also emphasized the difficulties faced by tourism staff in employing correct grammar when writing.

In summary, the findings highlighted the importance of addressing the writing skills of tourism-related personnel to enhance their communication abilities with foreign tourists. Training programs and interventions that focus on improving writing skills, particularly in terms of documenting information accurately and effectively, may be beneficial in addressing the identified challenges.

5.4 Needs for Engaging in English Communication Training

The study's findings highlighted the importance of improving the English language proficiency of tourism-related personnel to address their specific language-related problems and need effectively. By implementing a questionnaire, the researchers acquired a valuable understanding of the participants' eagerness and enthusiasm toward English communication training. The results revealed that most participants (83.3%) demonstrated a strong interest in participating. Among those interested, a notable proportion (62.4%) preferred weekend training sessions, typically lasting 1-2 days (34.4%). Additionally, participants expressed a preference for 3-4-hour training sessions, with a majority (78.4%) desiring the involvement of both Thai and foreign instructors.

These findings corresponded with previous studies by Prayaongkul (2021) and Piriyasilp (2014), which similarly documented participants' preference for training replicating real-life English situations. This agreement further underscored the importance of prioritizing practical English usage outside the conventional confines of classroom settings, as Walker (1995) advocated in his promotion of English for Specific Courses.

Nevertheless, it was essential to recognize the problems faced by participants in attending English training conducted in traditional classroom settings due to inflexible work schedules, as highlighted in studies by Prayaongkul (2021), Promwatcharanon & Chattreepinyo (2018), and Su-ya-ai (2018). In light of these challenges, participants expressed a significant demand for portable English pocketbooks that include Thai pronunciation and translation, complemented by accompanying CDs. These resources enable them to engage in English practice conveniently, at their own pace and convenience.

Overall, these findings highlighted the significance of creating customized English training programs that cater to tourism-related staff's particular preferences and limitations. By incorporating the favored training techniques and tackling the identified obstacles, these programs can effectively boost personnel's English language skills and provide exceptional experiences for foreign tourists exploring the area.

6. Conclusion

In summary, this study shed light on the problems encountered by tourism-related personnel in Phang Nga when communicating in English with foreign tourists. The results underscored the significance of improving writing skills, which emerged as the most problematic area for personnel. Additionally, problems in giving directions, comprehending slang and accents, and reading announcements and travel documents were identified. These challenges underscored the importance of addressing and enhancing the English language proficiency of tourism-related personnel to facilitate effective communication with foreign tourists. The study also revealed participants' preferences for English communication training, including weekend sessions, interactive teaching methods, and the involvement of both Thai and foreign teachers. The need for self-study materials for practicing English at home was also emphasized. By incorporating these preferences and developing customized training programs, tourism-related personnel can enhance their professional competence and contribute to a positive experience for foreign tourists visiting Phang Nga.

7. Suggestions

1. Effective English proficiency training is crucial for all tourism-related personnel, regardless of their specific roles within the tourism industry. It is vital to equip them with the necessary English language skills tailored to

their job needs. Ensuring that every tourism-related personnel possess strong English communication abilities significantly increases the potential for success in the tourism industry.

2. Tailoring training programs and providing self-study materials to tourism-related personnel improves their effectiveness and professional competence. This, in turn, enhances communication and service quality when interacting with foreign tourists in Phang Nga.

3. Increasing the number of participants, both tourism-related personnel and foreign tourists, is advisable to enhance generalizability. A larger sample size would offer a more comprehensive exploration of the problems and needs regarding English skills in the tourism industry, leading to a more vital understanding and reliable conclusions about English proficiency in this sector.

4. Besides questionnaires and semi-structured interviews, the researchers suggest incorporating other data collection methods, such as focus groups or observations. These methods can provide richer insights into the problems faced by tourism-related personnel and foreign tourists' perceptions regarding English communication.

5. To gain valuable insights and promote English proficiency in the tourism industry, it is recommended to compare research findings across different regions in Thailand, as this could reveal regional disparities in English usage and provide valuable best practices for skill enhancement.

6. The researchers advise longitudinal studies to evaluate the enduring effects of English training programs on the language proficiency of tourism personnel, sustainability, and emerging challenges.

Acknowledgments

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The Effects of Charismatic Aspects of Transformational Leadership on Personal Outcomes: An Empirical Literature Review

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Abstract
Idealized influence, combined with inspirational motivation, constitutes the charismatic-based aspect of transformational leadership. However, few researchers examined the influence of these two traits exerting on the employee's personal outcomes in the workplace and more research should be conducted. The goal of this paper turns to identify and analyze empirical articles on the effect of the charismatic aspect of transformational leadership on personal outcomes from the year 2013 to 2022. Such online databases like Google Scholar, ERIC, Web of Science and ProQuest were used to collect the literature. Induction analysis, narrative synthesis was utilized to analyze the articles and three conclusions can be drawn: 1) A positive impact of Idealized influence and inspirational motivation on related personal outcomes like job performance, job satisfaction and the job engagement was confirmed but the impact on job performance seems having received more concerns than the influence on job satisfaction and the engagement. 2) Most of the research are conducted in countries like Kenyan, Indonesia, Yemen, Jorden. Industries mainly involved in business sector like state-owned enterprises and private businesses, so the research context should be expanded to other places and countries and include more industries. 3) Future researchers are advised to concentrate more on the influence of idealized influence and inspirational motivation on personal outcomes such as job satisfaction, job engagement, job commitment, and the explanatory mechanism need to be more creative and innovative when supporting with a new theoretical foundation.

Keywords: Idealized Influence, Inspirational Motivation, Personal Outcomes, Empirical Review

1. Introduction

Idealized influence and inspirational motivation are two important subunits of transformational leadership and were considered as the charismatic-based aspect of the transformational leadership. Just like what the majority of

transformational theorists, such as Avolio, Bass, Deluga and Howell, hold that charisma is the primary ingredient in the transformational process. Charisma is the capacity of a leader to inspire admiration. Idealized influence , accompanied by inspirational motivation, composes charisma behavior within transformational leadership (Cicero & Pierro, 2007). When leaders are good role models and have personalities that inspire followers to enthusiastically imitate their behaviors and activities, they are said to have idealized influence (Groves, 2014; Northouse, 2021). Therefore, leaders with idealized influence behaviors inspire their followers to put the team's needs before their own and go above and beyond in terms of personal sacrifice and service. While inspirational motivation is a kind of leadership that leaders will employ it to promote a sense of pride. When a follower feels inspired or touched by the leader, inspirational motivation is utilized.

There is an increasing number of research exploring the impact of transformational leadership on outcomes like OCB, task performance, organization level and personal performance. Both individual follower results (Arnold et al., 2001; Bakker et al., 2022; Kehr et al., 2022) and group/organizational outcomes (Boerner et al., 2007; Purwanto et al., 2021; WANASIDA et al., 2021) have been linked to transformational leadership. And the capacity of a transformation leader is also confirmed to have effect on satisfaction of followers (Allozi et al., 2022; Bushra et al., 2011) and dedication (Chen & Cuervo, 2022) to the organization. Additionally, employee's self-motivation and commitment to organizational change and organizational conditions (Adnan & Azar, 2023; Herold et al., 2008; Ramos-Maçães & Román-Portas, 2022) are also affected by transformational leadership. Organizations of any kind require transformational leadership because it can positively affect success of the individual and the organization (Sharma & Jain, 2022). There is accumulating evidence demonstrating that transformational leadership is associated with positive outcomes like increased individual and collective efficacy of teachers (Gkolia et al., 2018; Windlinger et al., 2020); increased organizational citizenship behavior (Handayani, 2018); increased employee well-being (Donohoe & Kelloway, 2016; Kelloway et al., 2012; Sharifirad, 2013). But when we key idealized influence, inspirational motivation, charisma, and charismatic with the words of leader, leadership, and follower, by using key terms, titles, and abstracts to search databases like Papers First, Google Scholar, ProQuest Dissertations and Theses, and the Web of science to search for the related research as to their impact on employees' personal outcomes. The research is comparatively inadequate than transformational leadership and further specific research on these two dimensions should be carried out.

This literature review aims to identify and classify the recent literatures on how this charismatic aspect of transformational leadership predicts the personal outcomes, to draw literature-based conclusions and then the direction for future study is also figured out.

2. Literature Review

2.1 Idealized Influence

Idealized influence, meaning being influential about ideals, encompasses influence both over ideology and "bigger-than-life" issues, is the very first dimension of transformational leadership (Avolio et al., 1991). It refers to a transformational leader's capacity of exhibiting themselves as role models, high levels of idealized influence can enhance subordinates' confidence and respect in leaders (Eberly et al., 2017; Money, 2017). Ogola et al. (2017) figured out that transformational leaders with high degrees of idealized influence inspire followers' admiration and dedication. Idealized influence promotes a follower's desire to imitate a leader, allowing the leader to socialize with the followers. Bodla and Nawaz (2010) identified two perspectives of idealized influence: leaders' actions and those aspects of the leader's personality that are associated with the leader's supporters. Similarly, Loon et al. (2012) investigated idealized influence from a more detail aspect through two elements: "idealized influence-attributed" and "idealized influence-behavior". While "idealized influence-behavior" is understood as the specific behavior of leaders, "idealized influence attribution" relates to how followers and/or employees perceive and consequently experience leaders. Leaders with idealized influence possesses the qualities of being strong, charismatic, and self-assured and these qualities can be felt by their subordinates (Aydogdu & Asikgil, 2011).

According to Sosik and Godshalk (2000), idealized influence is a necessary and laudable quality in a leader. Such leaders are often held up as examples to follow or entrusted with coaching responsibilities. When acting as a role

model, characteristics of idealized influence are exhibiting and the followers are inspired to achieve goals, and the subordinates are encouraged to get involved to advance their careers (Sorkin & Rook, 2004).

2.2 Inspirational Motivation

"Although inspirational motivation has been seen as an essential ingredient of transformational leadership"(Rafferty & Griffin, 2004), this concept has been conceptualized in a variety of ways. According to Bass and Bass Bernard (1985), charismatic leaders encourage the people they lead to prioritize the organization's needs over their own through a combination of inspirational words and emotional appeals. The use of emotional components and emotional appeals in the workplace is a key part of the process by which inspirational leadership impacts employees. Later in 1999, Bass confirmed that a leader possesses charisma and inspirational motivation when they foresee the future, plan for its realization, set an exemplary example, demand excellent performance, and demonstrate conviction. According to Downton (1973), inspirational motivation is the capacity to evoke thought and feeling. There is a similar idea proposed by Keskes (2014) that the meaning of "inspiration" refers to the degree that a leader stimulates enthusiasm amongst their subordinates and the words they say to build confidence in subordinates in their ability and then perform better to accomplish assignments successfully and attain group objectives.

Superior performance outcomes are associated with higher levels of staff engagement and effectiveness, both of which are the direct result of a leader's use of inspirational motivation, a recognized contributor to employee dedication(Gallup, 2017). Leaders appeal to their followers' sense of inspiration to win them over and secure their backing for a plan of action or desired outcome. Motivating leaders encouraged their teams to think about the bigger picture and how their efforts could make a difference (Bass & Riggio, 2006). By mutual communication of fresh ideas, leaders with inspirational motivation behavior win enthusiastic supporters and the devoted supporters also accept leader's idea with grace and optimism (Bass, 2008). When devotees realized the rationale behind their devotion, they could better see the big picture and were more likely to give their all to the cause thus being more engaged. Employees may have more confidence in their leaders and their ways of leadership if leaders are able to communicate effectively with their subordinates and form close bonds with them. By articulating organization's future vision, leaders can enable employees understand the organizational goal better and accept it willingly thus can motivate them to work devotedly to achieve the goal (Podsakoff et al., 1990). The combination of these characteristics can strengthen workers' commitment to the company, which in turn will boost their job satisfaction and productivity.

2.3 An Empirical Literature Review of the Charismatic Perspectives of Transformational Leadership

There is a large number of research papers related to transformational leadership constructs, nonetheless, the literature often fails to adequately explore the specific facets of the construct and lead to a limiting clarity of how the dimensions impact organizations(Kariuki, 2021). A key aspect of transformational leadership is charisma, which manifests itself in the form of idealized influence and inspirational motivation. Studies are identified when we search for these two factors in google scholar and ProQuest to learn more about their effect on the engagement of employees.

Sahibzada et al. (2016) looked at how leaders' idealized influence and inspirational motivation affected workers' happiness, namely job satisfaction at the workplace. A well-established questionnaire survey was conducted among 330 employees from ten different private universities in KPK to explore the connection between the idealized influence, inspirational motivation and employee satisfaction in the job. It is found that both of these two variables exert significant impact on employee's job satisfaction. The study produced significant findings that will result in behavioral improvements in the education sector's leadership style, which will eventually increase employee job satisfaction levels.

Different from the research of Sahibzada et al. (2016) on job satisfaction of employees, Ngaithe et al. (2016) utilized these charismatic traits of idealized influence and inspirational motivation to delve into the influence of these trait factors on the productivity of employees at Kenyan state-owned businesses. It is concluded in the

research that these two traits of transformational leadership increased employee's performance in Kenyan State-owned businesses positively and significantly.

Also in Kenyan, the study of Nyokabi et al. (2017)was to determine the impact of Kenyan CEO's charismatic leadership traits on the performance of the senior managers in private businesses. It was discovered that both CEO's idealized influence and CEO's inspiring motivation were found to be significant predictors of senior manager performance in a multiple linear regression analysis. What's more, as a moderator, goal orientation was also tested and found that it significantly moderates the relationship between the idealized influence, inspirational motivation and senior managers' performance.

Applying only dimension of idealized influence, Change et al. (2019) investigated the impact of idealized influence having on employee engagement in energy sectors in Kenya. This research also aimed to determine how inspirational motivation impacts the link between idealized influence and staff engagement. Statistical analysis shows a strong correlation between employee engagement and charisma, ethical leadership, and teamwork.

Low-level managers across Kenyan insurance companies were invited to participated in quantitative research by Langat (2019a) to analyze the link between transformation leadership and employee performance, with a focus on the moderating role played by employee work value congruence. According to the results of the study, idealized influence is a strong predictor of workers' actual performance on the job. Results also showed that among lower-level managers in Kenya's insurance industry, work value congruence significantly moderated the connection between transformational leadership and employee job performance.

Collecting information from two manufacturing groups in Australia and Iran. Afshari (2021) seeks to understand the connections between the idealized impact aspect of transformational leadership and employee organizational commitment in two distinct cultural settings. Based on the analysis, two idealized influence dimensions (attributed and behavioral) were found to be significantly associated with organizational commitment among workers in Iranian sample. Among the Australian sample, however, only idealized influence behavior was found to significantly affect employee commitment. Another key conclusion was drawn that identified motivation acts as a positive mediator between idealized influence behavior and organizational commitment.

Also specific in dimensions, Le and Le (2021) investigate the link between knowledge sharing (KS) and the innovation performance of businesses by focusing on the role of idealized influence and inspiring motivation. The results demonstrate the importance of employee KS activities in enhancing business innovation performance and as a moderator in the impacts of TL on innovation performance. Furthermore, comparing the effect of idealized influence and the effect of individualized consideration on innovation performance, the latter is found to be more significant.

In a research by Alzoraiki et al. (2018)，researching goal was to investigate how different aspects of transformational leadership affect teachers' classroom performance in public schools in Yemen. A total of 374 respondents including staff and teachers were chosen as the sample to get responses and positive effects on teacher performance were observed across all these four dimensions of transformational leadership.

Using a quantitative research design, according to research conducted by Sutanto et al. (2021) in Indonesia, who examined the effects of all four dimensions of transformational leadership on HR performance, it is found that inspirational motivation, individual consideration, and intellectual stimulation all have a positive and significant effect on HR performance. HR performance is also positively related to idealized influence. However, this correlation is not strong enough to be considered statistically significant.

Using transformational leadership and perspective theory, ALmahasneh et al. (2022) studied the impact of idealized influence and inspirational motivation on the culture of the organization in Jordanian information businesses. Using a quantitative design, data were gathered from the managers at three levels, the results indicate that idealized influence and inspirational motivation have a constructive effect on the culture of an organization.

Culture in the workplace has a mediation effect on the dynamics between idealized influence and organizational performance, and inspirational motivation and organizational performance as well.

In order to have a clearer picture of these empirical studies, a matrix table of these two factors is made as follow:

Table 1: The Present Study of Idealized Influence and Inspirational Motivation on Personal Outcomes

Personal outcomes	Methodology	Research context	Authors and years	Findings
Employee job satisfaction	Quantitative	Pakistan private universities	Sahibzada et al. (2016)	Non-zero relationship is found
Staff performance	Quantitative	Kenyan state-Owned Enterprises	(Ngaithe et al., 2016)	Staff performance can be predicted significantly by inspirational motivation
Performance of senior managers	Quantitative	Kenyan private businesses	Nyokabi et al. (2017)	Can predict CEO's performance significantly
Employee engagement	Quantitative	Kenyan parastatals	Change et al. (2019)	Statistically significant effect
Employee job performance	Quantitative	Insurance companies in Kenyan	Langat et al. (2019b)	A positive effect exists
Employee organizational commitment	Quantitative Comparative Research	Manufacturing organizations in Australia and Iran	(Afshari, 2021)	Having a positive effect
Knowledge sharing innovation performance	Quantitative	Firms in Vietnam	(Le & Le, 2021)	Idealized influence brings motivation to knowledge sharing
Teacher performance	Quantitative	Yemeni public schools	Alzoraiki et al. (2018)	A positive effect exists
HR performance	Quantitative	Indonesia	Sutanto et al. (2021)	A Positive and noteworthy effect exists

Bank employee's performance	Quantitative	Tanzania	Magasi (2020)	The effect is significantly positive
Bank employee's performance	Quantitative	Sub-Saharan countries	(Magasi, 2022)	The effect is significantly positive

3 Discussion

The above review summarizes the findings of the current study on the effects of idealized influence and inspirational motivation on individual outcomes like job performance, organizational commitment and satisfaction. The chosen research methodology is quantitative, and the research context focuses primarily on business sectors. And the following sector will present some discussions in detail.

Firstly, although research on transformational leadership does exist, study digging into the specific aspects of transformational leadership did not begin until a very late stage in comparison with research on transformational leadership conducted over the course of the past four decades and has only recently begun.

Secondly, the employee's performance is the main concern of researches when considering the impact of idealized influence and inspirational motivation, examples like performance of the staff (Ngaithe et al., 2016), manager performance (Nyokabi et al., 2017), work performance of employees (Langat et al., 2019a), knowledge sharing innovation performance (Le & Le, 2021), teacher performance(Alzoraiki et al., 2018), HR performance (Sutanto et al., 2021) well supported the idea. Only few literature explored their impact on other aspects, such as employees' job satisfactions(Sahibzada et al., 2016) and employees' engagement (Change et al., 2019).

The third point figures out that most of these researches is conducted in few countries like Kenyan, Indonesia, Yemen, Jorden. The industries involved only in some state-owned enterprises and some private sectors, some non-business organizations like universities and schools at all levels are not covered, so the research context should be expanded to other places and countries and include more industries.

Fourthly, the above-mentioned empirical literature shares the common of lacking a new theoretical explanatory angle. They share a similar conceptual framework, with an emphasis on evaluating whether or not assumptions regarding the connection between idealized influence, inspirational motivation, and individual outcomes are valid.

Finally, very few of these new studies have looked into the mediating role that exists between idealized influence, inspiring motivation and the dependent variables such as performance, satisfaction, and engagement.

Based on the above discussion, the future researchers are suggested to focus more on the influence of idealized influence and inspirational motivation on the personal outcomes like job satisfaction and job engagement or job commitment and the explanatory mechanism needs to be creative and innovative when supporting by new theoretical basis. And more research from various regions and countries is encouraged to investigate the correlations between this charismatic aspect of transformational leadership and personal outcomes.

4 Conclusion

In this empirical review, the recent literature related to the effect of the charismatic aspect of transformational leadership have been sorted out and analyzed. It is well literature-supported that positive effects on employee outcomes are greatly enhanced by idealized influence and inspirational motivation and this significant impact of transformational leadership is highlighted. However, when considering the research theoretical basis, research

context and research design, the gaps in the empirical study on influencing components of transformational leadership, namely, idealized influence and inspirational motivation, can be filled by expanding supported theory, research context and research design.

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Program Development for Enhancement of Teachers' Supervisory Competency of Dual Vocational Education System in Educational Institutions under Vocational Education Commission

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Abstract
Teachers with good supervision skills can help bridge the gap between academic and practical, ensuring that students will gain the skills and knowledge which they need to succeed in their chosen fields. At the same time, it helps them understand how these skills are applied in real-life settings. Overall, teacher supervision competencies are critical to the success of dual education systems. It ensures that students are educated and have high-quality training and are ready for future careers Therefore, the design of this research and development study on the teacher's competency components, the needs and program development for enhancement competencies of Teachers' Supervisory Competency of Dual Vocational Education System in Educational Institutions under Vocational Education Commission. The method of research and development was divided into 4 phases. The tools used were questionnaires, assessment forms, teacher-supervisor competency-building programs, and a semi-structured interview. The statistics used were percentage, mean, and standard deviation. The results of the research were as follows: The competencies of training experience supervisors were categorized as follows: a) Curriculum administration and learning management b) Personal and Professional Development c) Innovation and information technology in education d) Ethics and professional ethics of teachers e) Educational research. These findings imply that the implemented program effectively contributed to the professional development of teachers' supervisors, leading to improved supervisory skills and competencies.

Keywords: Teacher Supervisory Competency, Dual Vocational Education System, Program Development

1. Introduction

The development of the country in various fields should be developed in education as the priority since education is a process that enables human beings to develop their quality of life to be able to live in society happily. The

quality of learners is an important aspect that is defined in every level of education curriculum and is the ultimate goal of education management that wants to happen to the students after they have studied in the course. After the National Education Act of 1999 was promulgated, educational reform was a national agenda. There are a total of 9 categories in which every category in the National Education Act aims to maximize the benefit of the learners. Especially in Category 4, the educational management approach is a learning reform that is considered the heart of educational reform for the 21st century. The contents of this category cover principles, content, and educational management processes that are open to participate, to create new visions of teaching and learning both inside and outside the school system. Information about learning at "The learner is the most important" by the definition of the learning process that the learner is the most important. Aiming to maximize the benefit of the students. for students to develop to their full potential, and have skills in acquiring a variety of knowledge The learning method can be applied in real life, and all parties are involved in every step to develop learners. The teacher must pay attention to and let the learners develop the relationship between the brain (head), mind (heart), hand (hand), and overall health (health) diversity of intelligence. Organizing the learning process should provide a variety of activities to enhance the potential of each learner (Wiroj Sararattana, 2005).

The National Education Plan (2017-2036) of the Ministry of Education has established a production strategy and developed research and innovation manpower to build the country's competitiveness to allow educational institutes and educational institutions to produce graduates with expertise and excellence in specific areas of study. that corresponds to the needs of the job market, and developing countries increase the percentage of education institutions. dual system education and cooperative education, school curriculum in the factory according to the specified standard has increased, (Office of the Education Council, 2017). The National Education Act of 1999 and its amendment (No. 2) of 2002 have set provisions in various categories related to the management of vocational education in Chapter 3 of the Educational System, Section 15. There are three forms of education: formal education, non-formal education, and informal education. Article 20 Management of vocational education, vocational training shall be provided in public educational establishments. private educational institution establishment or by cooperation between educational institutions and business establishments This shall be under the law on vocational education and related laws and Chapter 5, administration and Management of Education. Part 1 Administration and Management of State Education, Section 34, the Vocational Education Commission is responsible for proposing development plans and policies. standards and vocational education courses at all levels that correspond to the needs of the development plan national economy and society and national education plans; promotion and coordination of public and private vocational education management, a resource supporting, monitoring, and evaluating the results of vocational education management taking into account the quality and professional excellence Vocational Education Act B.E. 2551, in terms of vocational education management, Chapter 1, General, Section 6 stipulates that the management of vocational education and vocational training must be educational. in professional areas in line with the National Economic and Social Development Plan and the National Education Plan to produce and develop manpower at professional, skilled, technical, and technological levels including raising the level of vocational education to be in line with the needs of the labor market by bringing knowledge in theory that is universal and Thai wisdom to develop the learners to have knowledge and ability in practice and have the competency to the extent that they can be used for a career in the form of a practitioner or a self-employed person. vocational education and institutions as provided in this Act. (Vocational Education Act, 2008)

Dual vocational education management is one way of vocational education management that arises from agreements between vocational schools or institutes and enterprises, state enterprises, or government agencies in terms of curriculum teaching measurement and evaluation that students take part-time in a vocational school or institute and take practical lessons in the workplace, state enterprises or government agencies for the benefit of manpower production and development, vocational education institutes or institutes can manage many forms of education in combination. Or that institution must focus on the management of the dual education system is important. (Vocational Education Act, 2008) From research on manpower planning to develop Industry and administration of Thailand Development Research Institute, it was found that the quality of vocational labor had weaknesses in 3 areas: knowledge about writing skills and reporting preparation, occupational expertise found that there was still a lack of professional skills and expertise, and morality and ethics found that lack of responsibility, not punctual, lack of love and being honest with the agency. In addition, management of vocational education is

limited to management of education, in cooperation with the private sector or establishments Associated with direct experience in a career, the key point is that practical training is ineffective as it should be due to the shortage of training materials and tools modern machinery and equipment, Effective career teaching requires practical training. Professional skills in the workplace were the actual workplace, the Department of Vocational Education at that time had set policies since the year 1990. Training in the workplace, in addition to having a trainer in the workplace to take care of the training, there must also be a teacher from an educational institution to supervise the training by supervision principles. It is a process that is correlated with assessing, developing, and supervising skills as if it were a guard (Bernard and Goodyear, 2004).

Therefore, supervision It is very important. It is necessary to have a complete supervision process according to the elements, able to supervise closely, consistently, and continuously. The characteristics of important supervisors are: (1) Willing to represent the organization in motivating the supervised to work On their own, (2) can properly exercise the authority of the superintendent. (3) Be a good example to be a role model for the supervision recipients. (4) Accept the change of roles. Most supervisors must be practitioners before they become supervisors. (5) Necessary skills of supervisors must have technical skills, interpersonal skills, and management skills. as well as decision-making and problem-solving skills, etc. Supervision has been used to assist teachers and administrators in vocational instruction as well as other educational arrangements. Therefore, when the process is properly supervised, it will support the internship to achieve its objectives and It is smooth with students working in real situations upon graduation they can work and have qualifications that are desirable to the needs of the workplace. Internships are an important aspect of vocational training. It encourages students to increase their skills. Enhance the experience and professional development according to the real situation after training on the basics of working in educational institutions. Internships allow students to gain hands- on experience. and can work have the opportunity to work and use tools A real working machine. In addition, it is to learn the problem conditions and how to solve problems that arise during the internship rationally, as well as to train students to be responsible, disciplined, and work with others to have a good attitude. to work and to be proud of the profession (Office of the Vocational Education Commission, 2008)

Besides, an internship in the workplace also solves the problem inefficient of education and training systems. Effective and not linked, the academic working group determines the direction of potential development of vocational education in the public and private sectors and discussed the problems with the vocational education system that Education and training do not respond to the needs of entrepreneurs. Therefore, emphasis is placed on teaching and learning at the vocational level, emphasizing the integration of theory and practice, and application. By emphasizing learning from real practices in the workplace and the real world of work. (Ministry of Education, 2013). Internship supervision is a process that goes hand in hand with internships. internships to be effective must be supervised or supervised by professionals, with internship supervision being a reciprocal process. while those who have experience in working to help the inexperienced in assessing, developing skills, supervising until being able to achieve the student internship objectives, Management of internships in the workplace, suitable persons for supervision are trainers, also known as supervisors from the workplace. and supervisors from educational institutes. A supervisor plays a pivotal role in driving the management of the dual education system. Therefore, supervisors responsible for internships or vocational internships must possess knowledge, skills, and attitudes related to internship supervision in order to consistently provide effective and efficient vocational training experiences. Considering the origin and significance of the issue, it has been identified that the production of skilled workforce aligned with the requirements of enterprises and national development is imperative. This is particularly important in the field of vocational education and technology, where emphasis is placed on producing manpower with vocational certificates, high vocational certificates, and bachelor's degrees in technology or operations. Such qualifications ensure the quality and value of vocational education, catering to the needs of both the labor market and enterprises.

Therefore, the researcher is interested in developing a program to enhance teacher supervisors, vocational training, management of vocational education in the dual system in educational institutions, under The Office of the Vocational Education Commission to be a guideline for educational institutions to form a program for enhancing the competency of supervising teachers for vocational training. Management of the dual vocational education system in educational institutions under the Office of the Vocational Education Commission and those involved

have components of the development of programs to enhance teacher competency and vocational experience training. Management of dual vocational education system in educational institutions under the Office of the Vocational Education Commission that can apply the management method of the dual vocational education system in educational institutions under the Office of the Vocational Education Commission for further quality.

2. Research objectives

1. To study the components of teachers' supervisory competency of the dual vocational education system in educational Institutions under the Office of the Vocational Education Commission.
2. To study current conditions desirable conditions and the need for enhancement of teachers' supervisory competency of the dual vocational education system in educational Institutions under the Office of the Vocational Education Commission.
3. To design and development a program for the enhancement of teachers' supervisory competency in the dual vocational education system in educational Institutions under the Office of the Vocational Education Commission.
4. To study the results of implementing the program for enhancement of teachers' supervisory competency of the dual vocational education system in educational Institutions under the Office of the Vocational Education Commission.

Conceptual framework of Program Development for Enhancement of Teachers' Supervisory Competency of Dual Vocational Education System in Educational Institutions under Vocational Education Commission

The components of teachers' supervisory competency of the dual vocational education system in educational Institutions under the Vocational Education Commission
1. Curriculum administration and learning management
2. Personal and Professional Development
3. Innovation and information technology in education
4. Ethics and professional ethics of teachers
5. Educational research

How to Develop Teachers' Supervisory Competency of Dual Vocational Education System in Educational Institutions under Vocational Education Commission
1. Training
2. Self-improvement
3. Workshop
4. On-the-job training
5. Study trip

Program for enhancement of teachers' supervisory competency of the dual vocational education system in educational Institutions under Vocational Education Commission.

The component of the program
1. Principle
2. Purpose
3. Forms and methods of development
4. Program content
5. Program Evaluation

Program development for enhancement of teachers' supervisory competency
1. Study basic information
2. Planning
3. Setting objectives
4. Create a program
5. Implementing the program for trial and evaluate the results of the program
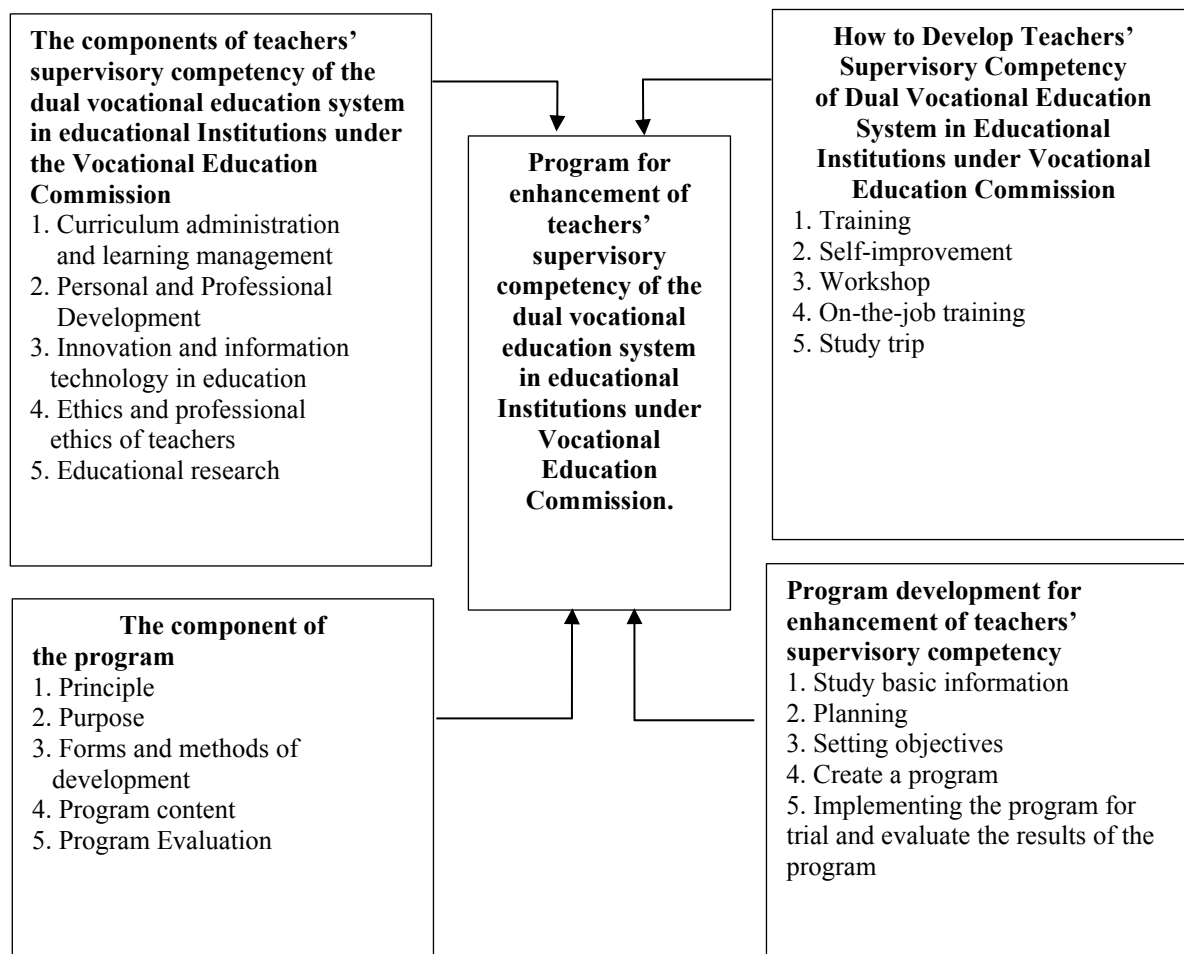
Figure 1.1 presents the concepts and theories used in drafting the Program for the enhancement of teachers' supervisory competency in the dual vocational education system in educational Institutions under the Vocational Education Commission.

3. Method of conducting research

Program Development for the Enhancement of Teachers' Supervisory Competency of Dual Vocational Education Systems in Educational Institutions under the Office of the Vocational Education Commission is research and development. The researcher has divided the research methods into 4 phases as presented in the following .

Phase 1 A study of the components of teachers' supervisory competency of the dual vocational education system in educational Institutions under the Office of the Vocational Education Commission, The informant group consisted of 5 experts by purposive sampling.

Phase 2 A study about current conditions desirable conditions and the need for enhancement of teachers' supervisory competency of the dual vocational education system in educational Institutions under the Office of the Vocational Education Commission.

2.1 Population: school administrators Head of Vocational Education Division, Bilateral System and Teacher Supervisor for Vocational Training Experience management of vocational education in a bilateral system of 429 educational institutions under the Office of the Vocational Education Commission

2.2 The sample group is school administrators, heads of the vocational education division of the dual system, and teacher supervisors for vocational training experiences management of vocational education in a bilateral system There were 429 educational institutions under the Office of the Vocational Education Commission. The sample size was 234 students using the stratified random sampling method. The sample group was determined using the ready-made tables of Krejcie and Morgan (Boonchom Srisa-at). , 2011).

Phase 3 Design and development program for enhancement of teachers' supervisory competency of the dual vocational education system in educational Institutions under the Vocational Education Commission. Informants in group discussions for the development of teacher competency-building programs for vocational training. management of vocational education in a bilateral system namely, 5 experts, obtained according to the specified criteria and a group of informants who are responsible for evaluating the program. (By evaluating suitability/feasibility/benefit), namely, 9 experts, obtained according to the specified criteria.

Phase 4 A study of the results of implementing the program for enhancement of teachers' supervisory competency of the dual vocational education system in educational Institutions under the Office of Vocational Education Commission, the informant group Including supervising teachers, vocational training experiences in educational institutions under the Office of the Vocational Education Commission that applied for the program, 1 place, 15 people.

4. Conclusion

Program Development for Enhancement of Teachers' Supervisory Competency of Dual Vocational Education System in Educational Institutions under the Office of the Vocational Education Commission, The results of the research can be summarized as follows:

1. The results of the study of the components of the competency of a dual vocational education management coaching professional experience training system Educational institutions under the Office of the Vocational Education Commission consist of 5 components: 1) Curriculum administration and learning management 2) Self-professional development 3) Innovation and information technology in education 4) Teacher professional ethics and ethics 5) Educational research

2. Results of the study of current conditions desirable condition and the need for teacher competency, vocational training experience management of vocational education in a bilateral system Educational institutions under the Office of the Vocational Education Commission Current condition, teacher competency, vocational training experience management of vocational education in a bilateral system Educational institutions under the Office of the Vocational Education Commission. Overall, the average level is moderate. The desirable condition for teachers' competencies, vocational training experiences management of vocational education

in a bilateral system which overall was at the highest level and needed competency of teachers, vocational training experience management of vocational education in a dual system Educational institutions under the Office of the Vocational Education Commission can be sorted as follows; they are innovation and information technology in education, curriculum administration and learning management, ethics and professional ethics of teachers, self-development, and professionalism. and the last one is educational research.

3. The results of the development of a program for enhancing the competency of teachers, vocational training experience management of vocational education in a bilateral system Educational institutions under the Office of the Vocational Education Commission The results of the development of a competency-building program for supervising vocational training management of vocational education in a bilateral system under the jurisdiction of the Office of the Vocational Education Commission It can be summarized as follows.

3.1 Components of the teacher competency building program for vocational training experience management of vocational education in a dual system, There are 3 parts under the vocational education institutes under the Office of the Vocational Education Commission, namely, part 1 introduction, part 2, manual for using the program to enhance the vocational experience supervisor competency. management of vocational education in a bilateral system Under the educational institutions under the Office of the Vocational Education Commission and Part 3 Measurement and Evaluation Details are as follows:

Part 1 Introduction consists of the principles, and objectives of the program. Program content, development methods, and program evaluation,

Part 2 Manual for the use of the teacher competency building program for vocational training experience management of vocational education in a bilateral system Under the vocational education institutes under the office of the vocational education commission consists of principles, objectives, and development methods. Preparation of materials, equipment, media, and knowledge content and activities consisting of 5 modules.

Part 3 Measurement and Evaluation consists of measurement and evaluation methods. and measurement and evaluation criteria

3.2 The content of the development activities of the program consists of the learning content of the program consisting of 5 modules with the following components; Module 1 Curriculum Administration and Learning Management, Module 2 Self-Development and Professionalism, Module 3 Innovation and Information Technology in Education, Module 4 Ethics. and professional ethics and Module 5 Educational Research. Each Module has 5 development methods; 1. Training, 2. Self-study, 3. Self-development, 4. Study visit, 5. Practical Training Form and Method of Development Using a development period of 105 hours, there was a method to develop the competency of teachers, coaches, and vocational training experiences in the management of vocational education in a bilateral system under the Office of the Vocational Education Commission. By adhering to the development principle 70: 20: 10, i.e. learning from the program 10% learning from others 20% and 70% experiential learning to build knowledge, understanding, and deep and sustainable learning skills so that the trainees can apply it as a principle for continuous self-development (Continuous Self Development). There are a total of 4 development stages: Step 1, Pre-Development Assessment 2 hours. Step 2, Development 15 hours, Step 3, Integration with Operation 86 hours, and Step 4, A 2-hour post-development assessment, in which various methods used to develop the program include 1) training, 2) workshops, 3) self-improvement, 4) study visit and 5) on-the-job training and program evaluation, consisting of 1. Knowledge assessment before and after participation in the program 2. Evaluation during the development of program participants and 3. Evaluation of participant satisfaction in the follow-up and evaluation program after development.

4. Study the results of implementing the program for enhancement of teachers' supervisory competency of the dual vocational education system in educational Institutions under the Office of Vocational Education Commission, The research results can be summarized as follows:

4.1 Assessment before and after joining the supervisor competency program Develop teachers' competencies, supervising teachers, vocational training experiences management of vocational education in a bilateral system Udon Thani Polytechnic College. The results of the individual test scores of the vocational training supervisors Management of vocational education in a bilateral system, schools under the Office of the Vocational Education Commission found that the teacher supervisors had an average score before the development of 16.95 out of a full score of 30, representing 56.52% and the score after development was 24.64 out of 30, representing 83.10%, showing that the supervisors of Udon Thani Polytechnic College The post-development scores were higher than the pre-development scores. and passed the criteria of 80% of all.

4.2 Satisfaction evaluation results of the program for enhancing teachers, experience training Profession Vocational education management, dual system, educational institutes under the Office of the Vocational Education Commission Satisfaction level of the program for enhancing professional experience supervisors Management of vocational education in a bilateral system, schools under the Office of the Vocational Education Commission found that satisfaction with the Teacher Supervisor Training Professional Experience Program Management of vocational education, a bilateral system, educational institutions under the Office of the Vocational Education Commission Overall, it was at the highest level. The considering each item, 9 items were at the highest level and 3 items were at the high level, sorted by the average from the highest to the lowest 3 order, namely, measurement and evaluation, introduction, and media/learning resources, respectively. The components of teachers' supervisory competency of the dual vocational education system in educational Institutions under the Vocational Education Commission

5. Discussion

From the research results on program development for enhancement of teachers' supervisory competency of the dual vocational education system in educational institutions under the Office of the Vocational Education Commission, There were interesting issues that the researcher brought to discuss the results. can continue as follows

1. The components of teachers' supervisory competency of the dual vocational education system in educational Institutions under the Vocational Education Commission, confirmed by experts Overall, it was at the highest level. This is consistent with the research of Pongsak Duangtha (2014) on the development of teacher professional competency in private schools under the Phitsanulok Educational Service Area Office of all 7 core competencies, the highest performing aspect is good service performance, The second place is discipline, morality, ethics, and professional ethics, The third place is teamwork. And the last one is self-development and work performance, it was found that the highest performance was the learning management and classroom management competency, the second place is learner-centered development and the third place is subject knowledge, And the last one is curriculum development competency. Analysis of teacher professional competency component structure model by analytical method The affirmative element corresponds to empirical data based on the teacher professional competency measurement model in 7 components of core competency found that the component weight Sorted from most to least as follows: 1) Psychology for Teachers 2) Teacher hood 3) Self-Development 4) Achievement Orientation 5) Teamwork 6) Good Service 7) Discipline, Morality and Ethics in Teaching Profession and Professional Competency Measurement Model Teachers in the competency of the line of 9 components found that the weight of the components, sorted from most to least as follows: 1) Teacher Leadership 2) Curriculum Development 3) Community Collaboration 4) Analysis, Synthesis and Educational Research for Learner Development 5) Educational Measurement and Evaluation 6) Language Technology for Teachers and Technology Innovation educational information 7) knowledge in subject content 8) learner-centered development 9) learning management and classroom management guidelines for the development of teacher professional competency.
2. Current condition, desirable condition and the need assessment for the program development for enhancement of teachers' supervisory competency of the dual vocational education system in educational institutions under the Office of the Vocational Education Commission, The current state of competency of vocational training supervisors management of vocational education in a dual vocational education system under the Office of the Vocational Education Commission, according to the competency components of

the vocational coaching professional experience training in a bilateral system Overall, the current condition is at a moderate level. The desirable condition of the vocational training supervisor's competency. management of vocational education in a dual system Educational institutions under the Office of the Vocational Education Commission Overall, the desirable condition was at the highest level and the need for teacher competency, professional experience training management of vocational education in a dual system educational institutions under the Office of the Vocational Education Commission, sort the needs assessment from most to least: innovation and educational information technology, curriculum administration and learning management, and ethics and professional ethics of teachers, respectively. Due to the creation of a questionnaire on current conditions and desirable conditions about building teachers' competencies for vocational training experiences management of vocational education in a dual system educational institutions under the Office of the Vocational Education Commission, study the concepts, principles, and methods of constructing questionnaires. It covers the components according to the teacher competency- building program for vocational training. management of vocational education in a dual system of educational institutions under the Office of the Vocational Education Commission. and the questionnaire was presented to the experts for their opinions. which is accurate in terms of content and appropriateness, consistent with the research of Opas Sukwan (2019) has studied and researched the study of teacher competency of vocational teachers in Bangkok. It was found that the competencies of vocational education teachers should be promoted. It was found that the competencies of vocational education teachers should be promoted by; 1) Curriculum development and teaching and learning management for vocational teachers that promote professional competency development and 2) permanent teacher development to enhance the competencies of vocational teachers as needed by vocational teachers and there are many ways to develop competency, such as training, and enhancing experience in the workplace.

3. The results of the program for enhancement of teachers' supervisory competency of the dual vocational education system in educational Institutions under the Office of Vocational Education Commission, components of the program for enhancing teacher competency, professional experience training management of vocational education in a dual system Educational institutions under the Office of the Vocational Education Commission have 3 parts: Part 1 Introduction consists of principles, objectives of the program. Program content, development methods, and program evaluation, Part 2 Manual for the use of the teacher competency building program for vocational training experience management of vocational education in a dual system Under the vocational education institutes under the office of the vocational education commission consists of principles, objectives, development methods. Preparation of materials, equipment, media, and knowledge content and activities consisting of 5 modules. Part 3 Measurement and Evaluation consists of measurement and evaluation methods. and measurement and evaluation criteria The content of the development activities of the program consists of the learning content of the program consisting of 5 modules, consisting of the following components: Module 1 Curriculum Administration and Learning Management, Module 2 Personal and Professional Development, Module 3 Innovation and Information Technology in Education, Module 4 Professional ethics and ethics and Module 5 Educational research. Each Module has 5 development methods: 1. Training, 2.Self-study, 3. Self-development, 4. Study visit, 5. Practical Training Form and Method of Development Using a development period of 105 hours, there was a method to develop the competency of teachers, coaches, and vocational training experiences in the management of vocational education in a dual system under the Office of the Vocational Education Commission by adhering to the development principle of 70: 20: 10, which is 10% program learning, 20% learning from others, and 70% experiential learning to build knowledge, understanding and learning skills that are profound and sustainable. The development students can use as a principle for continuous self-development. There are 4 steps of development as follows: step 1, pre-development assessment, 2 hours; Step 2, development, 15 hours; Step 3, integration with operations, 86 hours; and Step 4, post-development assessment, 2 hours. Various methods used to implement the development of the program include 1) training, 2) workshops, 3) self-development, 4) study visits, and 5) practical training and program evaluation. It consists of 1. Assessment of knowledge before and after participation in the program, 2. Assessment during the development of program participants, and 3. Assessment of program participant satisfaction, monitoring, and evaluation after development (Follow Up and Evaluation) consistent with the research of Yod Anong Jomhongpipat (2010) research The development of the teacher development program for learning management leaders according to the educational reform approach found

that 1) Teacher Leadership Development Program, Evaluation, Evaluation, which are vision, principles, objectives, content, process, structure and evaluation evaluation. The process of the program is divided into 2 phases: Phase 1: Management Teacher Development Program; learn in simulation Which is a workshop with steps, namely the exploration of the previous experience joint planning stage The knowledge and understanding stage for conceptualization, the concept application stage. Phase 2: Field Learning Leadership Development Program It is a continuous development of teacher-leadership skills from Phase 1 in real situations for 1 semester. The steps are implementation, supervision, follow-up, feedback, and reinforcement. The strengthening seminar which consistent with the research of Chanokphon Juthasong (2016) has researched the development of a program to enhancement the learning management competency of teachers under the Office of the Promotion of Non-Formal and Informal Education found that the learning management competency of the teachers under the Office of the Promotion of Non-Formal and Informal Education developed with program components, namely; 1) Principles and concepts of the program 2) Objectives of the program 3) Format and method of development 4) Structure of the program 5) Content and essence of the program, consisting of 6 modules: 1) Creating and developing a curriculum for adult learners. 2) Knowledge based on learning content 3) Learning design for adult learners 4) Organizing a variety of learning processes 5) Media use and media development innovation in learning management and 6) measurement and evaluation, It took 180 hours. Development methods were 1) training/workshop training, 2) field trips, 3) coaching, 4) self-study, 5) brainstorming, and 6) group meetings. small The development process has 4 steps: Step 1 Pre-Development Assessment, steps 2 Development, step 3 Knowledge Integration, and Step 4 Assessment after the development of assessment results by qualified experts found that the usefulness, feasibility, appropriateness, and accuracy were at the highest level.

4. A study of the results of implementing the program for enhancement of teachers' supervisory competency of the dual vocational education system in educational Institutions– had an average score before the development of 16.95 out of 30, representing 56.52 percent, and after development, an average score of 24.64 out of 30, representing 83.10 percent. The post-development scores were higher than the pre-development scores and passed the criteria of 80% of all. This is because The researcher used both quantitative and qualitative data to determine the guidelines for the program for enhancing the competency of professional experience supervisors. management of dual vocational education and inviting knowledgeable and capable speakers who have experience in enhancing teacher competency, vocational training management of vocational education in a bilateral system Let's exchange knowledge in getting developed. The vocational training supervisors who are under development have the knowledge and understanding of the vocational training supervisors consistent with the research of Kamol Riengthaisong (2017). The development of a vocational training program in the workplace to enhance professional competency. For students in the field of automotive technical work. The research results can be summarized as follows: Conditions for vocational training in the workplace. automotive technical field according to the opinions of vocational training instructors, the suitability was at a high level with an average of 3.69. According to the opinions of trainers in the workplace, suitability was at a high level with an average of 3.99 and according to the opinions of the alumni who graduated from the bilateral system, the suitability was at a high level with an average of 3.85 automotive technical field according to the opinion of the Vocational Training Supervisor There was a high level of suitability with an average of 3.71 according to the opinions of trainers in the workplace. The suitability was moderate with an average of 3.33, and according to the opinions of alumni who graduated from a bilateral system, The suitability was at the middle level with an average of 3.35. Vocational training programs in enterprises to enhance professional competence for students Automotive technical field consists of 4 main components: 1) roles and responsibilities of personnel in vocational training practices in the workplace 2) Operating budget 3) Qualifications of establishments accepting bilateral students 4) joint management between educational institutes and enterprises by cooperation between educational institutions and enterprises to the process of vocational training in the workplace by cooperation between educational institutions and enterprises to the process of vocational training in the workplace of students under the bilateral system of vocational education management standards t, students who graduated from the bilateral system automotive technical field have professional competency according to the specified curriculum, possibility of an in-house vocational training program to enhance professional competencies for students Automotive technical field

found that overall the probability was at the highest level with an average of 4.80, consistent with the research of Kitti Chantra (2015). Training curriculum for the development of a participatory performance assessment system of vocational teachers Research results summarized as follows: 1) The developed participatory performance assessment system of vocational teachers. 5 experts, it was found that the overall picture of the system was at a high level. 2) Efficiency of the training program, in which the researcher has applied the CIPP model, the results are summarized as follows: the notification of the results of the competency assessment has the greatest need for training. 2.2) Results of preliminary factor assessment Efficiency of theoretical training courses For the trial, it was 84.65%/82.96% and for the practice, it was 85.79%. 2.3) Evaluation of the efficiency of the training course from theory for the actual implementation of the training course, the value was 84.93/83.58 percent and the practical value was 86.89 percent, which was higher than the specified criterion. The result of the product evaluation found that the satisfaction of the supervisors and the assesses about the overall use of knowledge was at a high level, and consistent with the researched Chanokporn Juthasong (2016) researched the development of a program for enhancing the competency of learning management of teachers under the Office of Promotion. Non-formal education and informal education found that the results of the implementation of the competency building program manage teacher learning under the Office for the Promotion of Non-formal Education and Informal Education, it was found that (1) the results of the knowledge test on teachers' learning management competency The pre-development score was 16.95, representing 56.52 percent, and the post-development score, receiving an average score of 24.64, representing 82.12 percent. The results of the assessment of teachers' learning management competency before the overall development are moderate after development overall was at the highest level and (3) satisfaction assessment results of overall program participants in all aspects were at the highest level.

6. Suggestions for applying research results

Considering the research on the program for enhancement of teachers' supervisory competency of the dual vocational education system in educational Institutions under the Office of Vocational Education Commission. The key points for development were found as follows:

1. The development of information technology innovation teacher advisors should be given priority in applying knowledge to supervising vocational training experiences. management of vocational education in a bilateral system of Educational institutions under the Office of the Vocational Education Commission.
2. Should provide training and curriculum development on teaching and learning in a dual system for supervisors. Educational institutions under the Office of the Vocational Education Commission continuously will result in the organization's greatest success.
3. Supervisors should apply the knowledge gained from self-development. applied to work in supervision, vocational training experience in educational institutions under the Office of the Vocational Education Commission

7. Suggestions for further research are as follows:

1. A participatory action research study for enhancement of teachers' supervisory competency of the dual vocational education system in educational Institutions under the Office of Vocational Education Commission.
2. Study the model of enhancing the competency of teachers, vocational education management professional experience and dual system that affects the quality of vocational schools in the digital age.

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Agriculture Teachers' Perceptions on the Inclusion of Indigenous Technical Knowledge in Secondary School Agriculture Curriculum, Nakuru County, Kenya

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Abstract

Purpose: This paper explores agriculture teachers' perceptions of the inclusion of indigenous technical knowledge in secondary school curriculum. Design/methodology/approach: This study used a cross-sectional research design to determine the perceptions of agriculture teachers on the inclusion of indigenous technical knowledge in secondary school agriculture curriculum. Findings: The findings of the study indicate that more than 50% of the agriculture teachers were aware of the different indigenous practices that are carried out in both crop and livestock production, also more than 50% of the teachers agreed that ITK is; cheap, reliable, enriches students with a wide range of knowledge, is friendly and easy to use. 82% of the teachers agreed that ITK should be included in secondary school agriculture curriculum because of its values, 18% were of the opinion that agriculture curriculum is already bulky and the knowledge is outdated hence it should not be included in the curriculum. Practical implications: This study highlights the essence of including indigenous technical knowledge in secondary school curriculum, little of the said knowledge has been taken into consideration by the curriculum developers yet the knowledge can equip the learners with diversified agricultural knowledge which is crucial in crop and livestock production, the knowledge is cheap and readily available. Theoretical implications: The results of the study reveal that most of the teachers were positive about taking ITK into consideration while teaching agriculture. Based on the values of ITK the researcher suggests to curriculum developers to research on ideas and practices related to ITK that could be beneficial to learners and develop learning materials to suit their needs. Originality/value: There are limited studies that highlight the value of indigenous knowledge and its inclusion in secondary school agriculture curriculum.

Keywords: Perceptions, Indigenous Technical Knowledge, Agriculture Curriculum

1. Introduction

Indigenous technical knowledge (ITK) refers to the local knowledge that is unique to a given culture or society and is acquired by local people through the accumulation of experiences, informal experiments, and intimate understanding of the environment in a given culture. These are practical, personal and contextual units which cannot be detached from individuals, their community or the environment (Chikaire, Ejiogu-Okereke, Ihenacho, Oguegbuchulam, Obi & Osugwa 2012). Agricultural indigenous technical knowledge includes but is not limited

to the following areas; climatology, local soil and taxonomy, soil fertility, intercropping, agronomic practices, irrigation & water management, plant & animal protection and post-harvest technology (Nyong et al., 2007).

Indigenous technical knowledge is a significant subject which is recognized worldwide. For many years, indigenous knowledge has been used by local people of Asia, Latin America and Africa to sustain them and to maintain cultural identity (Kyasiimire, 2010). The first deliberation on ITK took place during the World Commission on Environment and Development (WCED) in the period between the years 1984 and 1987. The report of this commission unveiled the value of indigenous technical knowledge in the sustainable development process (Cincin-Sain & Knetch, 1995).

Studies show that for a long time, farmers in the developing world have depended on ITK for improved agricultural produce. The applicability of ITK takes place during different farming seasons and periods, and this knowledge spans from land clearing, tilling of the land, selecting seed varieties for planting, harvesting and storage, and identifying weather patterns (Lwoga, Ngulube, & Stilwell, 2010). Indigenous technical knowledge is vital in preserving biodiversity, through World Bank, gene banks have been established to preserve genetic information of indigenous crop and animal species, such species may prove instrumental in future breeding programs to introduce resistance against pests, diseases or endurance to harsh climatic conditions (Nyong et al., 2007).

In Kenya, the government through the Ministry of Agriculture in conjunction with Kenya Agricultural Livestock and Research Organization (KALRO) has embraced ITK by establishing Farmers Training Centre for Indigenous knowledge in some parts of the country, for instance in Turbo Township in Uasin Gishu district (Chebutuk & Kiplangat, 2008). Farmers converge in the centers and are taught how to apply ITK in their farming activities. Through this training farmers learn various uses of ITK which includes; use of animal and compost manure, sprinkling of hot pepper on vegetables to control pests, drying of selected seeds for planting, alternating of livestock and crops on a field portion to restore fertility and soaking of seeds in water before planting to hasten germination (Chebutuk & Kiplangat, 2008).

According to Msila (2016), the rapid and constant changes in the society necessitate a different kind of student who will respond to the current and future challenges. Mauley (2001) observes that since independence, education reform has been political rather than professional in developing countries like Kenya and South Africa. In South Africa a major curriculum reform was undertaken after dismantling of apartheid and the establishment of the black majority government (Howie, 2002). The new curriculum (C 2005) which was developed through an extensive process of participation and consultation was released in 1997. The C 2005 curriculum was driven by principles of outcome-based education, learner-centered education and the critical outcomes of the National Qualifications Framework unlike the former curriculum which primarily consisted of teacher "chalk and talk" and was heavily dependent on text books and rote learning (Howie, 2002).

The current system of education in Kenya is the 8-4-4 structure, the 8-4-4 system entails eight years of primary education, four years of secondary (form 1-4), and four years of university. This system was introduced in 1985 to promote man-power capable of performing white collar jobs (Kaviti, 2018). The proposal to scrap the 8-4-4 system was first contained in a 2012 report by a task force which recommended a 2-6-3-3 education system that would, amongst other factors ensure that learners acquire competencies and skills to meet the human resource aspirations of Kenya's vision 2030 blueprint for development (Kaviti, 2018). The Director of Kenya Institute of Curriculum Development (Jwan, 2017) in his report points out that the proposed 2-6-3-3 education system is expected to produce responsible citizens who are equipped with skills and knowledge. A cross examination of the proposed education system (2-6-3-3) shows that it has only embraced production of indigenous crops while leaving out ITK on crop protection, livestock production and soil conservation.

Curriculum reform is a planned sequence in which curriculum specialists (teachers inclusive) assist in; conducting needs assessment, identifying a problem, finding a solution, conceptualizing the required curriculum, pilot testing the revised curriculum on a small-scale basis then implementing it nationally (Kenya National Union of Teachers, 2017). The quality of curriculum reform on its own doesn't guarantee a successful reception by teachers, teachers'

beliefs, values, and experiences play a vital role in the acceptance of the reform (Bantwini, 2010). Neglect of these issues creates frustrations and sends out a message that the Education Department lacks concern about its teachers and can widen the gap between conception and implementation of the curriculum (Lemon, 2004).

The government of Kenya has always continued to reform the country's formal curriculum in order to incorporate the indigenous knowledge into the school system (Owuor, 2007). According to Shizha (2013) inclusive perspective in knowledge production and mediation should be the aim of curriculum transformation. Formal education in Africa is still characterized by the dominance of Western systems coupled with unwillingness to represent and apply indigenous knowledge within formal education and socio-economic contexts (Shava, 2016).

One of the challenges facing the integration of ITK in the Kenyan agriculture curriculum arises from teachers' lack of faith that such a curriculum can actually contribute significantly in addressing the socio-economic needs of the country (Mwenda, 2003). Teachers' perception on the integration of ITK in the agriculture curriculum determines how they integrate this form of knowledge in the school curriculum (Gachanga, 2007).

Indigenous Technical Knowledge and practices plays a key role in crop and livestock production. In crop production it entails control of crop pests and diseases using locally available materials, production of traditional crops which are resistant to drought, pest and diseases and it can adapt to a wide range of soil characteristics among other practices. In livestock production the knowledge has been exploited in coming up with high performing breeds which are resistant to harsh climatic conditions, parasites and diseases. Despite the importance of ITK, less of it has been captured in the Kenyan secondary school curriculum. For many years education in Kenya has been based mainly on Western values, this has contributed to the fact that many learners from disadvantaged backgrounds cannot see the connection between the education they receive at school and their everyday experiences. Education is viewed as a tool through which the society can be changed for the better, if ITK is included in the secondary school curriculum learners who are future potential farmers will be equipped with diversified agricultural knowledge ranging from indigenous technical knowledge to scientific knowledge. This may boost agricultural production and in the long run improve the living standards of the society. This study will focus on perceptions of agriculture teachers in Njoro Sub-county on the inclusion of indigenous technical knowledge on crop and livestock production in secondary school agriculture curriculum.

This investigated the perceptions of agriculture teachers on the inclusion of indigenous technical knowledge on crop and livestock production in secondary school curriculum. The study addressed the following research questions;

   i.What is the agriculture teachers' level of awareness on ITK pertaining to crop production in Njoro Sub-county?

  ii.What is the agriculture teachers' level of awareness on ITK pertaining to Livestock production in Njoro Sub-county?

 iii.What are the perceptions of Agriculture teachers in Njoro Sub-county on the inclusion of ITK pertaining to crop and livestock production in secondary school agriculture curriculum?

2. Materials and methods

A semi-structured questionnaire was used to collect data from the respondents. The instrument was developed by the researcher. The instrument was developed guided by the objectives of the study. The questionnaire was divided into three sections numbered A to C. Section A captured the respondent's personal information and consisted of closed -ended questions. Section B captured information on teachers' conversance with ITK pertaining to crop and livestock production, this section consisted of a four point Likert scale in which the respondent was required to respond to statements as High, Moderate, Low and None. Section C captured data on perception of secondary school agriculture teachers on ITK and its inclusion in secondary school agriculture curriculum, this section consisted a five-point Likert scale in which the respondent was required to give statements as Strongly Agree (SA), Agree (A), Undecided (U), Disagree (D), and Strongly Agree (SA). Section B consisted of closed ended questions while C had both closed ended and open-ended questions.

3. Data Analysis

The data collected was cleaned first to identify the errors made by the respondents. Once the data had been cleaned, the questionnaires were coded and the data entered into the computer using Statistical Package for Social Sciences (SPSS). Data was analyzed using descriptive statistics i.e. frequencies and percentages were used to analyze the results. The data was presented using tables and pie charts.

4. Results and Discussion

4.1. Agriculture Teachers' level of awareness on ITK pertaining to Crop Production Practices

This section discussed the Agriculture teachers' level of awareness of ITK pertaining to crop production practices, the respondents were asked to indicate whether they were familiar with ITK on crop production practices provided. The results were as indicated in table 1.

Table 1: Teachers' Level of Awareness on ITK pertaining to Crop Production Practices

Crop production practices	Moderate to high	low	None	Total
	pc	pc	pc	pc
Observing sprouting and flowering of certain plants which indicate onset of rain	74%	22%	4%	100%
Storing healthy seedlings above fireplace to preserve them for planting	74%	15%	11%	100%
Storing seeds in the kitchen ceiling for proper drying of the seeds	70%	23%	7%	100%
Selecting seeds (e.g. harvested maize seeds, beans peas etc.) of good size and shape	93%	7%	0%	100%
Use of ash on vegetables to control aphids	74%	20%	6%	100%
Dusting granaries with ashes to control weevils.	64%	29%	7%	100%
Use of pepper and ashes to control maize stalk borer.	54%	34%	12%	100%
Use of Mexican marigold and Lantana camara to control storage pests	41%	35%	24%	100%
Intercropping crops with tobacco in order to control crop pest	41%	28%	31%	100%
Use of scarecrows to control crop pests like birds	93%	6%	1%	100%
Winnowing crops to remove thrush before storage	99%	1%	0%	100%
Use of basket granaries which are well aerated to prevent a dumpy environment.	70%	19%	11%	100%
Soaking seeds in water overnight to bring forward the germination date.	78%	18%	4%	100%

The findings presented on table 1 indicate that 74% of the respondents had moderate-high familiarity with farmers' indigenous way of predicting the onset of rains by observing the sprouting and flowering of certain plants while 4% were not familiar with the practice. In the past indigenous people predicted the onset of rainfall using various environmental and astronomical indicators such as; fruit production of certain trees at the onset of the rainy season, behavior and movement of birds, animals as well as insects (Chang'a et al. 2010). Environmental indicators that farmers use to predict the coming rainy season became available for observation at different times of the year, beginning immediately after harvest and continuing into the new rainy season (Ingram et al. 2002). Though the majority of the teachers were familiar with this practice, research shows that the practice is under threat of disappearing due to lack of systematic documentation of the knowledge and lack of co-ordinated research to investigate the accuracy and reliability of forecasts (Kijazi, et al. 2013).

From the data collected, 89% of the respondents were conversant (low to high level) with the practice of how farmers select seeds for planting, 97% were conversant with farmers' practice of storing the selected seeds on kitchen ceiling in order to preserve them and lastly 96% of the teachers were conversant with soaking of seeds to bring forward germination. Traditionally rural subsistence farmers store their maize cobs (containing seeds) over the fireplace in their huts; this causes the seeds to come into contact with large quantities of smoke. Modi (2002) in his study of using two traditional maize varieties showed that the seeds exposed to smoke had a higher germination rate and final germination than untreated seeds. The smoke treated seeds produced significantly more vigorous seedlings than untreated seeds. According to Chebutuk & Rotich (2008), farmers prepare seeds for planting by selecting seeds which are of good health and size for planting. The selected seeds were then placed in baskets and hanged on kitchen ceilings so that smoke and heat would dry and preserve them. Prior to planting some indigenous farmers soak seeds overnight in order to bring forward germination. Indigenous farming practices for protection of seeds as well as grains by using various plant parts, ash; oils etc. are very old and based on some scientific principles.

On dusting of granaries to control weevils 93% of the teachers had a high level of familiarity with the practice while 7% were not aware of the practice. Research shows that ash from wooden and cow dung is used to control pests because of its silica content which deters egg formation and larva feeding (Metha et al. 2012). A research carried out by Lodhi, and Mikulecky (2010) indicates that Indigenous Knowledge on insect pest control is perceived as important because it was witnessed as useful in food security and survival of the users long before the invention of synthetic pesticides, this could be the reason why majority of the respondents were well conversant with this practice.

On the use of pepper and ashes to control maize stalk borer 88% of the respondents were conversant with the practice while 12% were not conversant with the practice at all. The use of various plant parts emits a pungent type of smell because of the availability of essential oil in them. The emission of the pungent smell acts as a repellent of insects and thus deters their survival (Methal et al. 2012).

On the use of *Lantana camara* and *Mexican marigold* to control pests 76% of teachers were aware of the practice while 24% were not aware of the practice. Research shows that *Lantana camara* has toxicity effects to animals and it is also a noxious plant that has been cited as invasive and it needs monitoring (Baars & Nesser, 1999). Literature also reports that *Lantana camara* causes less mobility, dehydration and constipation, congested heart and lung nephrosis, and teratology in pests like mice (Mello et al, 2005). Further research indicates that *Lantana camara* has been used for the control of insect pests in stored grains (Rajashekar et al, 2013). Other than using *Lantana camara* to control field pests, farmers can also use cats to control pests like birds and rodents as well as use of scarecrows to scare away pests like porcupines and birds. On the use of scarecrows 99% of the teachers were well conversant with the practice.

Further; 42% of the teachers had knowledge of control of crop pests by intercropping crops with tobacco. Crop pests can also be controlled by intercropping crops with tobacco. Intercropping refers to the practice in which two or more species or genotypes grow together at the same time in the same field, it can either be done where the second crop is cultivated before the earlier matures or the two crops are grown together in strips (Brooker et al. 2015). The results indicate that the majority of the teachers had not interacted with the practice, Chota et al. (2010) suggests that all Indigenous Knowledge Systems related to Agricultural practices which have something to do with plant and animal production should be protected and continued to be used since they a lot of advantages over the Western practices.

The findings of the study also indicate that 99% of the respondents agreed that they were conversant with ITK on winnowing of crops before storage while 89% were conversant on the practice of storing farm produce using basket granaries which are well aerated to prevent dumpy environment. One of the post-harvest practices in crop production is threshing; this is carried out on cereal crops like maize. The purpose of threshing is to detach the grains from the panicle. The cleaning process is performed after threshing to separate whole grains from broken grains and other foreign materials such as straw, stone, chaff and weed seeds. Winnowing is one of the most

common methods used for cleaning farm produce in developing countries (Kalita & Kumar, 2017). Once the farm produce is cleaned it is then ready for storage. Traditionally rural subsistence farmers store their produce using traditional storage structures which are made up of bamboo. The woven bamboo mat-like structure is rolled into a cylinder form and is first smeared with mustard seed cake to make it pest repellent; the structure is made air tight by plastering it with rice cow dung, mud or mustard cake (Kafle et al. 2021). On average more than 50% of the agriculture teachers are conversant with different ITK practices carried out in crop production.

4.2. Agriculture Teachers' level of awareness on ITK pertaining to Livestock Production Practices.

The findings of the study in table 2 shows 29% of the respondents were conversant with ITK on the use of traditional brew to control worms (internal parasites). Research shows that most traditional farmers practice a free range system whereby farm animals are allowed to graze freely in the field, they are left to graze on shrubs and herbs which are medicinal in nature. To control internal parasites, cows are dewormed using traditional brew which is prepared by the farmers who believe that the brew has the ability to clear worms in the digestive system (Chebutuk & Rotich, 2008). The brew is given to animals whose droppings are observed to be having eggs, larval stages of parasites or even the adult parasites.

Table 2: Teachers' Level of Awareness on ITK pertaining to Livestock Production Practices.

Livestock production practices	Moderate - High	Low	None	Total
	Pc	Pc	Pc	Pc
Use of traditional brew to control worms	29%	46%	25%	100%
Controlling ticks by extracting blood from an animal heavily infested with ticks in order to make the skin hard	20%	31%	49%	100%
Use of guard/calabash kept in cold places to preserve milk	79%	18%	3%	100%
Preserving meat by smoking	72%	22%	6%	100%
Keeping boiled meat in honey containers for long storage	48%	25%	27%	100%
Use of fire place to hatch and brood chicks	59%	30%	11%	100%
Rearing of hatched chicks near the fireplace for sometimes (fireplace provides warmth).	75%	20%	5%	100%
Extracting juice from aloe vera plant and adding to water to control coccidiosis in poultry	84%	10%	6%	100%
Choosing of a bull from a highly productive mother in order to get a good quality calf	93%	7%	0	100%
Borrowing a bull from another village for breeding.	85%	10%	5%	100%

On controlling ticks by extracting blood from an animal which is heavily infested, 51% of the respondents were aware of the practice while 49% were not aware; this reveals that the practice is not widely practiced among the different Kenyan communities. Due to scarcity of veterinary services in many developing countries, farmers depend on ITK to control ticks (Byaruhanga et al., 2015). This is done by extracting blood from the neck region of an animal heavily infested with ticks in order to make the animal skin hard, this makes the ticks to fall off and hence discourages ticks from invading.

Fermentation is one of the oldest methods of food processing to make naturally fermented and cultured foods worldwide, according to Van Hylckama Vlieg (2011). Fermented foods and beverages are estimated to make up approximately a third of the human diet. Fermentation process represents a food preservation technique particularly well suited to the climate of arid and semi-arid areas. Fermentation is an important food processing technology usually developed by women in most African countries (Methal, 2011). Research shows that the traditional food processing techniques are very important in preventing growth of microorganisms that cause food to decay, hence food can be kept at ambient temperature for long periods. Processing and preservation of food products helps in increasing the value of perishable foodstuffs by making them available for longer periods of time (Osumbi et al. 2000). Fermentation also enhances the nutritional quality of foods and it contributes to food safety

particularly where refrigeration and other processing facilities are not available (Motarjemi, 2002). In addition, some fermented foods like fermented milk contain high concentration of probiotics which have health benefits, some of the beneficial effect of lactic acid bacteria consumption includes; improvement of intestinal tract health; enhancement of immune system reduced symptoms of lactose intolerance and lastly reduced risk of certain cancers (Parvez et al. 2006). In conclusion, processing techniques such as soaking and fermentation have been found to significantly reduce the levels of phytates and tannins by exogenous and endogenous enzymes formed during processing (Nuha, et al. 2010). Most of indigenous food processing and preparation methods are well known to most households in rural and urban areas alike (Metha et al. 2012) this could be the reason why majority of the teachers (97%) were well conversant with the different methods of food preservation methods.

The data collected also indicates that 79% of the respondents were conversant with the practice of preserving meat by smoking while 5% were not aware of the practice. Research shows that in some African communities, meat from slain animals like sheep, goats, cattle and camels is first cut in long pieces, smeared with salt and then dried for about a week (Methal et al. 2012).

The traditional methods of hatching and rearing of chicks as well as control of poultry diseases such as coccidiosis seemed to be well understood by majority of the respondents since 89% of them agreed that they were conversant with traditional way of brooding and rearing chicks, and 94% were conversant with the practice of treating poultry against coccidiosis using aloe-Vera juice. Some farmers apply ITK in poultry production by hatching of eggs and subsequently rearing them near the fireplace. This technology involves the use of traditional hatchery (near the fireplace) which make use of fireplace heat to brood and hatch chicks and subsequently rear the chicks using the same fireplace until they are of age to be transferred to a different location. Once the chicks have grown they are treated against coccidiosis in case of an attack by using aloe-Vera juice which is extracted from the aloe-Vera plant (Chebutuk & Rotich, 2008).

Lastly the data collected revealed that most of the respondents seemed to be well conversant with ITK on selection and breeding of livestock, more than 90% responded positively. Research shows that indigenous farmers choose a healthy bull with desirable physical features to be used for siring. In order to avoid in-breeding, bulls with desirable traits may be brought from other villages for breeding purposes (Chebutuk & Rotich, 2008). On average 86% of the respondents were well conversant with different ITK practices carried out in livestock production.

4.3. Agriculture Teachers' Perceptions on ITK on Crop and Livestock Production and its Inclusion in Secondary School Agriculture Curriculum

Teachers are at the forefront in implementation of the agriculture curriculum, to investigate their perception they were required to indicate whether they strongly agree, agree, disagree or strongly disagree to various statements pertaining to ITK. Their responses are as indicated in table 3.

Table 3: Agriculture Teachers' Perceptions on ITK and its Inclusion in Secondary School Agriculture Curriculum

Statements about ITK	SA Pc	A Pc	U Pc	D Pc	SD Pc	Total Pc
Control of crop pests using ITK methods is cheap	35%	58%	7%	0%	0%	100%
Control of livestock parasites using ITK methods is cheap	30%	53%	13%	5%	0%	100%
Indigenous technical knowledge and practices are reliable	12%	49%	25%	18%	3%	100%
Inclusion of ITK in secondary school curriculum will enrich students with a wide range of knowledge	47%	49%	3%	1%	0%	100%
ITK is friendly and easy to use	34%	51%	10%	6%	0%	100%
ITK on crop production should be included in agriculture curriculum	31%	48%	10%	10%	1%	100%
ITK on Livestock production should be included in agriculture curriculum	27%	47%	14%	11%	1%	100%

The findings in table 3 show that more than 93% of the respondents agreed that the use of ITK practices in both crop and livestock production is cheap, reliable and easy to use. Research shows that despite the increased influence of modernization and economic changes, a few traditional agricultural management and knowledge systems are predominant in many African countries (Akullo et al, 2007). Many small-scale farmers in Kenya utilize Indigenous Knowledge Systems because it is cheaper as compared to modern techniques, they are also available locally and are easy to adapt and use (Chebutuk & Rotich, 2008). Chandola et al. (2011) also reports that Indigenous practices of pest management are effective without having a deteriorating effect on the environment; they also indicate that the practice is quite cheap. Further; Emeagwali (2003) in his research observes that Indigenous Knowledge Systems is cost effective and relevant and therefore it should be noted that the basic component of any country's knowledge system is its indigenous knowledge.

According to the data collected, the majority of the respondents (96%) agreed that ITK enriches the learners with a wide range of knowledge. This is in agreement with Msila, (2007) who argues that there is great knowledge of wealth in the local Indigenous Knowledge System.

The findings also indicate that 79% of the respondents agreed that ITK in crop production should be included in secondary school curriculum while 74% of the respondents agreed that ITK on Livestock production should be included in secondary school curriculum. Reid et al. (2004) indicates that Indigenous knowledge goes hand in hand with old age and the loss of the accumulated knowledge through death hinders the perpetuation and passing on of the knowledge from generation to generation. Such sentiment strongly supports the inclusion of ITK in the Kenyan secondary school agriculture curriculum in order to maintain its continuity from one generation to another. The result shows that 82% of the teachers were positive about the different statements concerning ITK.

4.4. Teachers' Perceptions about Including ITK in Agriculture Curriculum for Secondary Schools

Respondents were required to give (with a reason) their opinions on the inclusion of ITK on crop and livestock production in secondary school agriculture curriculum; their responses are as indicated in the figure below.
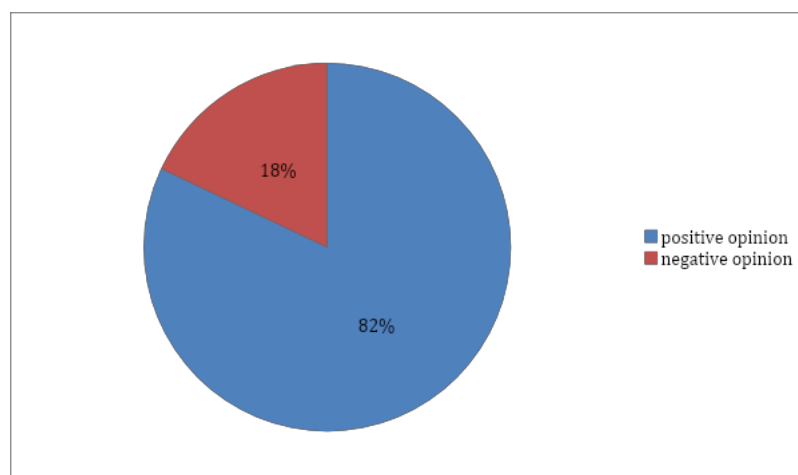

Figure 1: Teachers' Opinion about Including ITK in Agriculture Curriculum for Secondary Schools

The practice of including ITK into secondary school agriculture curriculum is a way of empowering the indigenous people through the learners and the future generation since ITK is a resource that provides a firm foundation of sustainable and sound approaches to agriculture. Despite the fact that Indigenous Africans had their own sustainable agricultural practices before colonization, Western agricultural practices still dominate the school agriculture curriculum in Kenya (Mapara, 2009). ITK provides an opportunity to bring forth an inclusive approach to education (Msila, 2016) and thus it is important that ITK be recognized and valued in the level of the school curriculum and that it should be incorporated in teaching and learning process (Semali & Kinchebe, 1999). From the research, the majority of the teachers (82%) are of the opinion that ITK on crop and livestock production should

be included in secondary school agriculture curriculum. Agriculture teachers' opinion on the inclusion of ITK in secondary school agriculture curriculum is very relevant since they are the implementers. Shizha, (2006) reports that the top down approach in which the curriculum is designed and implemented seems to underrate teachers' role in curriculum planning and implementation. Shava, (2016) also indicates that knowledge dissemination to learners through the curriculum shapes and guides the practice, perceptions, and value system of the learners' lifetimes long after it has been taught and thus education stakeholders (teachers inclusive) should be concerned about the kind of knowledge learners receive, its value and relevance to their contextual challenges. When teachers fail to take account of their students' diverse cultures, the students often fail to learn (Hewson, 2015). Therefore, it is very clear that time has come to rethink the local content of the subject area and by changing the curriculum in order to accommodate agricultural indigenous technical knowledge.

The negative attitude of some teachers towards ITK (n=18%) that the practices are out of date and unreliable is also amplified by Sibanda, (1998) who observed that many young people might view Indigenous knowledge as being obsolete and out of date when compared with Western Agricultural practices. Ogunyi, (2007) in his research discovered that teachers oppose indigenization and contextualization of Euro-centric curriculum due to the historical and traditional preparation of teachers who were schooled in western curriculum and hence are more familiar with that worldview than that of indigenous knowledge. 18% of the teachers were of the opinion that ITK should not be included in secondary school agriculture curriculum because of such reasons as; the knowledge is out of date, new farming technologies should be invented, ITK methods are not reliable among other reasons. This study was therefore viable since the majority of the respondents agreed that there is ITK that could be integrated in teaching of Agriculture in secondary school

5. Conclusions and Recommendation

5.1. Conclusion

Current literature highlights how ITK has been greatly neglected at the curriculum implementation level despite curriculum Policy documents providing for it (Gumbo, 2016). Motivated by the belief that agriculture teachers have a significant influence on agriculture curriculum implementation, this study focused on investigating the perception of agriculture teachers on the inclusion of ITK in secondary school agriculture curriculum. From the study findings the researcher concluded that;

1. Most of the agriculture teachers were conversant with Indigenous Technical Knowledge applied in crop production
2. Most of the agriculture teachers were conversant with Indigenous Technical Knowledge applied in livestock production.

3. A greater percentage of the teachers had a positive attitude towards the integration of ITK in secondary school agriculture curriculum.

5.2. Recommendations

This study was able to explore the perception of agriculture teachers on the inclusion of ITK on both crop and Livestock production in secondary school agriculture curriculum by using a questionnaire. Despite the fact that there is a wide range of agricultural indigenous technical knowledge on both crop and livestock production, it has not been included in secondary school agriculture curriculum yet it can enrich learners with a wide range of agricultural knowledge which is cheap, accessible and easy to use. The study therefore recommends the following;

1. Curriculum developers to research on ideas and practices related to indigenous technical knowledge that could be beneficial to learners in particular geographical and social contexts.
2. Curriculum developers should rethink revising the secondary school agriculture curriculum to include Indigenous Technical Knowledge
3. Curriculum developers to develop learning materials which integrate Indigenous Technical Knowledge.

5.3. Recommendations for Further Research

This study is not fully exhaustive and in order to achieve greater understanding, the researcher recommends the following for further research:

1. Similar research to be done in other counties of Kenya to determine the perception of Agriculture teachers in other countries on the inclusion of ITK in secondary school agriculture curriculum
2. Further research to be done on other relevant stakeholders like curriculum developers.
3. Research to be done on the perceptions of learners who are the recipients of the inclusion of ITK in secondary school curriculum.

Acknowledgements

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Raising of Tolerance Consciousness Through Multicultural Education in Post-Conflict Regions of Indonesia

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Abstract
As a country full of natural resources, Indonesia has a long-term responsibility to synergize with human resource development. This study aims to see efforts to raise awareness of the younger generation's tolerance for diversity through multicultural education in the post-conflict area of West Kalimantan, Indonesia. This study was reviewed using Paulo Freire's theory of Educational Dehumanization supported by the concept of Social Identity and Vita Cotemplativa Hannah Arendt. This study uses a qualitative approach with case study methods and data collection using in-depth, focused interviews with figures related to the process of multicultural education in West Kalimantan. This study found the importance of multicultural education as social capital for the younger generation to form awareness in understanding diversity tolerance. Furthermore, through multicultural education, the younger generation is expected to be able to minimize and break the chain of ethnic conflicts in the future so that attention is needed from various parties such as parents, schools, communities, governments, and relevant stakeholders, considering that the Kalimantan region is the center for the construction of the new and new Indonesian capital city government. Therefore, sustainable development is needed to start by increasing the capacity of the young generation from an early age.

Keywords: Multicultural Education, Social Capital, Tolerance, Younger Generation, West Kalimantan

1. Introduction

1.1 Introduce the Problem

The service sector has dominated West Kalimantan's economic sector since 2014 by 23% and agriculture by 21.95%. Even though there is a shift in agricultural development, the Natural Resources sector will have the potential to dominate, considering a large number of unused land (Achmad, 2016). Moreover, natural damage can potentially hinder the improvement of the green economy sector and sustainable development (Rany et al., 2020).

The green economy will continue to grow considering that West Kalimantan includes the "Heart of Borneo" forest area, which is famous for the most extensive biodiversity, including Kalimantan, Malaysia, parts of Brunei Darussalam managed jointly based on the principles of conservation and sustainable development (Yuniarti et al., 2018).

In early 2022, the Indonesian central government decided to move the State Capital to the island of Kalimantan, known as IKN. The vision of moving IKN into a bright, green, beautiful, and sustainable city encourages Kalimantan to improve strategic governance in understanding potential such as the green economy. Futhermore, Kalimantan is responsible for preserving nature, hence the development of IKN should be based on a green economy to be a mainstay in every region (Ardian, 2018).

The natural potential of human ecological capacity should be balanced for the younger generation to contribute to regional development. Since West Kalimantan is becoming unique with its rich culture and history, cultural identity should be strengthened to reduce potential conflicts. The result of collective memory and inter-ethnic stereotypes in the younger generation makes it vulnerable to ethnic conflicts in the future. Therefore, there needs to be a discussion room in the form of participatory development communication, which has an important role, especially seeing the intercultural communication in the younger generation, which becomes social capital in development.

Conflicts hinder intercultural understanding and negatively influence children. The research conducted (Fernando et al., 2019; Fernando & Marta, 2019; Marta & Fernando, 2020) is the occurrence of collective memories such as stereotypes, past stories, and exposure to media content (Chinmi et al., 2020; Marta et al., 2021) that contains past ethnic conflicts. This collection becomes an obstacle for the young generation of West Kalimantan to carry out intercultural communication.

Globally, there are programs initiated by the United Nations, namely the Sustainable Development Goals (SDGs). The 16th point discusses the importance of harmonization in coexistence that results in peace, justice, and strong institutions, as well as the importance of maintaining a healthy society (Barbier & Burgess, 2017). As a diverse country, Indonesia is responsible for providing adequate space for all institutions at all social levels.

Table 1: The History of Kalimantan's Ethnic Conflict

Ethnic	Place	Cause	Description
Dayak and Madura	Sanggau Ledo, West Kalimantan spread to Sampit Central Kalimantan (Hadiyanto, 2016; Prayudi, 2004a)	The loss of Customary Forests as Economic Lands (Economic Competition	It has happened thirteen times in the period 1950-1999 (Supriyadi, 2011)
Malay and Madura	Sambas, West Kalimantan	Indications of Murder	Occurred in 1997-1999 and caused about 48,000 people to evacuate around Pontianak City and Pontianak Regency (now Kubu Raya Regency) (Subro, 2011)

Source: Authors

Ethnic conflicts can occur due to personal problems involving two or more people who have harbored feelings of dislike, competition, disadvantage, and other issues (Prayudi, 2004b). Social life between cultures often experiences a lot of friction due to a lack of understanding between both parties (Hadiyanto, 2016).

A climate of understanding needs to be created to promote sustainable peace, such as through education. Meanwhile, there are various perspectives in carrying out peace education programs, including international, environmental, development, conflict resolution, and human rights education. Conflict resolution education is of

concern at the individual and interpersonal levels. Therefore, developing skills and qualities related to the peace process is vital, starting from the family, school, and conflict-affected communities.

The younger generation must recognize and appreciate cultural diversity and different cultural identities. Qualified interpersonal skills are needed to become a complex multicultural society so that the younger generation can be aware of differences which do not always mean conflict and encourage tolerance. One way to minimize stereotypes and collective memory in the younger generation is by teaching the history and culture of various ethnic groups so that the younger generation can better understand the different backgrounds that shape the identity of these ethnic groups.

By studying the history of ethnic conflict and its impact on the ethnic groups involved, students can better understand the root causes and complexities of the competition. This can help students appreciate the importance of peace and tolerance in a multicultural society and strengthen efforts to minimize the possibility of ethnic conflict in the future.

This study reviews the multi-ethnic young generation of West Kalimantan through multicultural education as social capital to increase understanding of the importance of understanding diversity in society. The perspective of peace education in eastern regions such as Indonesia is packaged in multicultural education. A typical example is West Kalimantan, initiated by the Institute of Dayakology and the Alliance for Peace and Transformation (ANPRI) to encourage the younger generation to understand differences and live in harmony.

1.2 Critical Consciousness

The concept of consciousness in development communication is based on Paulo Fiere's (2016) thoughts, where humans can understand and be aware of various conditions and perceive reality as a causal relationship. Paulo Freire (2001) proposed an anthropological cultural-based education concept that distinguishes between the natural and cultural worlds. Culture is the result of continuous human work where there is a process of creating and reproducing creations. It is a systematic achievement of human experience that processes information and takes creative actions (Manullang et al., 2021).

The raising of consciousness conceptualized by Paulo Freire understands that the oppressed should be aware of the situation and desire to change the existing conditions. Furthermore, humans can determine their destiny through critical thinking. Fiere criticized the traditional education system in Brazil, which is only based on teaching and memorizing (Fadli, 2020). Freire's thinkers focused deeply on seeing power as an oppressor, leading to society's thought. There were three levels of consciousness proposed in the form of semi-intransitive, naive, and transitive critical, which are further explained (Moenawar et al., 2019):

Semi-intransitive awareness describes the level of individual attention with acceptance based on external explanations of the condition of individuals or groups. The association between the scenario and the power of external agents is that they have no control over the circumstances. This awareness is fatalistic in that individuals or groups are forced to live under dependence on the authority of others.

Naive consciousness considers problems as coincidences, and the individual can question and recognize the reality of life. However, the resulting attitude is still primitive and naive at this stage. A simple example is identifying the individual concerned as an elite, turning back time, being willing to embrace the elaboration that has been planned, and having solid emotional behavior.

The last stage of awareness is called transitive critical, where one does not see the problem as a coincidence but as a more structured challenge. The characteristics are those who review the root of the belief problem into discussion and can accept the conditions of the problem. This dialogue leads to a two-way conversation based on the ability to determine quality relationships.

1.3 Social capital of identity in Peacebuilding

Individual investment is encouraged when engaging in social interactions. Furthermore, social capital in individuals can be conducted by strategically negotiating situations. The two assets required for individual investment are 1) Sociology, where individuals are seen socially, such as in education, community membership, and the appearance of personal behavior, and 2) Psychology, which tends to be intangible such as ego strength, exploratory commitment, self-monitoring, self-efficacy, moral reasoning abilities, critical thinking, and other character attributes enhancing an individual's capacity to negotiate and understand various social work (Yu & To, 2019).

Sociological assets are seen when children involve themselves in cultural, ethnic, and religious communities and are interested in an issue. Multicultural education allows West Kalimantan children to learn about different ethnicities, cultures, religions, and backgrounds to accept differences and minimize past conflicts. Multicultural education is essential to minimize friction and cooperate in future regional development. The potential of rich natural resources will not be optimal when human resource managers do not collaborate well. Psychological assets are formed from children's ability to interact with peers, and different cultural backgrounds, engage consistently and convey critical thinking through the recommendations of children's voices.

A person's identity capital is directly proportional to the strength of the interaction and social situation ability (Sundar, 2008). The daily interactions show that identity capital can strengthen the exchange between subjects and encourage acquiring identity capital as a reference for future success (Sundar, 2008).

The strengthening of interactions by identity capital can encourage the emergence of a pluralistic society to unite and understand diversity. It can also establish a relationship where there are forms of expression through communication between individuals who move freely. Awareness is needed when there is a communication process for diverse individuals. Diversity is needed to avoid misunderstandings in actions, hence the ability to see from various perspectives is important in joint communication actions (Indah, 2016).

Discuss the relevant related literature, but do not feel compelled to include an exhaustive historical account. Assume that the reader is knowledgeable about the basic problem and does not require a complete accounting of its history. A scholarly description of earlier work in the introduction provides a summary of the most recent directly related work and recognizes the priority of the work of others. Citation of and specific credit to relevant earlier works are signs of scientific and scholarly responsibility and are essential for the growth of a cumulative science. In the description of relevant scholarship, also inform readers whether other aspects of this study have been reported on previously and how the current use of the evidence differs from earlier uses. At the same time, cite and reference only works pertinent to the specific issue and not those that are of only tangential or general significance. When summarizing earlier works, avoid nonessential details; instead, emphasize pertinent findings, relevant methodological issues, and major conclusions. Refer the reader to general surveys or research syntheses of the topic if they are available. Demonstrate the logical continuity between previous and present work. Develop the problem with enough breadth and clarity to make it generally understood by as wide a professional audience as possible (Beck & Sales 2001). Do not let the goal of brevity lead you to write a statement intelligible only to the specialist.

1.4 Vita Cotemplativa

Hannah Arendt put forward this term where every human being can believe things through the perspective of common sense. More profoundly, Vita Cotemplativa theory was developed in the postmodern era. Theory cannot explain the entire occurrence in society, but it is important to obtain common ground with everyday life (Jansson et al., 2017; Korsgaard, 2016). Multicultural education bridges awareness through theory and applies it practically in a diversity-based dialogue.

This awareness-raising process with a balance of theory and practice encourages young people to understand tolerance for diversity and individual and scientific forgiveness of past ethnic conflicts in West Kalimantan. The

act of forgiveness is a means to atone for the inability to undo past occurrences (Arendt, 1958; Kohen, 2009). Therefore, multicultural education emerges as a theoretical representation of forgiving past ethnic conflicts and accepting differences, which become the identity of the birth of the Indonesian nation.

The Method section describes in detail how the study was conducted, including conceptual and operational definitions of the variables used in the study, Different types of studies will rely on different methodologies; however, a complete description of the methods used enables the reader to evaluate the appropriateness of your methods and the reliability and the validity of your results, It also permits experienced investigators to replicate the study, If your manuscript is an update of an ongoing or earlier study and the method has been published in detail elsewhere, you may refer the reader to that source and simply give a brief synopsis of the method in this section.

After you have introduced the problem and have developed the background material, explain your approach to solving the problem. In empirical studies, this usually involves stating your hypotheses or specific question and describing how these were derived from theory or are logically connected to previous data and argumentation. Clearly develop the rationale for each. Also, if you have some hypotheses or questions that are central to your purpose and others that are secondary or exploratory, state this prioritization. Explain how the research design permits the inferences needed to examine the hypothesis or provide estimates in answer to the question.

2. Method

2.1 Research Design

This research uses a qualitative approach with a case study method (Hidayah et al., 2020) (Heriansyah et al., 2018) to investigate phenomena in the real world from individual, social, organizational, and political experiences. The method makes it easy to talk more deeply about phenomena close to people's lives (Creswell & Creswell, 2018). Furthermore, data collection used in-depth interview, focused interviews with informants selected based on deep involvement in introducing multicultural education in West Kalimantan.

The informants of this research are part of several organizations, such as The Dayakology Institute, the Madura Family Association, and the Children's Forums of West Kalimantan, Pontianak City, and Kubu Raya Regency. Observations were made by tracing additional documents in the form of teaching materials, and documentation carried out during the implementation of a series of multicultural education learning.

3. Results

Indonesia's wealth in terms of religion, ethnicity, class, race, and social class is the principal capital to understanding the importance of tolerance and diversity. Multicultural life, such as America, England, Australia, and other developed countries, have a historical story in the development of education (Isnarmi Moeis, 2019). It becomes interesting when different backgrounds and rich historical stories become the color of how multicultural education is implemented.

Looking at multicultural education in other nations, such as the United States, the 1950s saw the beginning of the movement in the shape of the Civil Rights movement centered on black-and-white concerns. Discrimination is the main trigger for the initiation of multicultural education in America. The UK is developing this education due to many migration groups of Caribbean and Asian populations and Commonwealth countries. Australia began to understand the importance of multicultural education because of discrimination against Aboriginal tribes. In contrast to other countries, multicultural education in Canada exists because of the culture brought by immigrants (Isnarmi Moeis, 2019).

The idea of multiculturalism cannot be negotiated anymore. It is expected to become a strategic issue in developing Indonesia. Since the beginning, the nation was born from diversity, where culture cannot be seen as wealth and

should be fought for survival as a nation. Multicultural education is compulsory, and diversity management is a potential that should be responded to positively and negatively (Wasitohadi, 2012).

Local-based curriculum development becomes a reference for forming multicultural education. The purpose is to prepare the younger generation for the knowledge, skills, and attitudes needed in an environment of their ethnic, inter-ethnic, and national cultures. The importance of not only seeing multicultural education as a need to raise awareness from the surface but also how multicultural learning is lived and practiced in everyday social interactions (Isnarmi Moeis, 2019).

The cultural diversity of Indonesia inspires optimism for its ability to flourish and develop. However, it is alarming that intercultural education is still undervalued as a method to better comprehend the difference. The potential to form multicultural education as a model of local education is the nation's principal capital to remain optimistic about making Indonesian society more visible and advanced in the eyes of the world.

A multicultural education approach should be based on Indonesian realities and local wisdom. In the context of its implementation, multicultural education can be seen or positioned as follows (Amirin, 2012; Zamroni, 2011):

a) As a philosophy of education, namely the view that the richness of Indonesia's cultural diversity should be utilized to develop and improve the system, as well as achieve a just and prosperous Indonesian society.

b) As an educational approach, namely the implementation of contextual education, which considers Indonesian culture's diversity, values are believed to influence individuals' views, beliefs, and behavior and will be carried over into educational situations in schools and informal relationships between individuals.

c) Field and area of study, namely a scientific discipline assisted by sociology and educational anthropology that examines aspects of culture, especially values and their embodiments in the administration and implementation of education. Meanwhile, the results will become a field of study taught operationally to prospective educators dealing with cultural diversity. The "multicultural education process" should be studied and examined for effectiveness and efficiency.

The importance of increasing the nation's plurality and the development of multicultural education should pay attention to several factors. First, multicultural education can be a means to provide a platform for the management of ethnic diversity. Second, it should follow the provisions of Pancasila as a means of unifying the Indonesian nation. Third, multicultural education departs from Indonesian society's economic, socio-political, and cultural aspects. Fourth, it should develop suitable learning methods to realize the internalization of the value of tolerance for diversity (Wasitohadi, 2012).

Multicultural education in Indonesia refers to an approach that pays attention to and respects the diversity of cultures, religions, languages and traditions that exist. This is important for reducing intergroup conflict and increasing togetherness in diverse societies. The development of multicultural education in Indonesia has started since the beginning of independence, where Pancasila, as the basis of the state, recognizes and respects diversity. However, only in the last few decades has multicultural education become a significant focus of education policy in Indonesia. One of the critical efforts in developing multicultural education is to increase the availability of materials and textbooks that pay attention to Indonesia's cultural and historical diversity. In addition, training programs and professional development for teachers and education personnel are also needed to increase their understanding of multiculturalism and how to integrate it into learning.

In addition, several educational institutions and universities in Indonesia have introduced a multicultural curriculum that includes learning about different cultures, religions and traditions. It aims to increase understanding and tolerance between groups and promote togetherness in society. Although much progress has been made in the development of multicultural education in Indonesia, many challenges must be faced, especially in overcoming the prejudices and discrimination that still exist in society. Therefore, continuous efforts are needed to increase understanding and tolerance between groups and promote diversity and togetherness in the Indonesian community.

3.1 Development of Multicultural Education in West Kalimantan

The group of children is categorized as a marginal group (Cornelissen et al., 2018; Deng & Yu, 2021; Wijayanti et al., 2017). Multiple labels, such as helpless children, inability to think critically, and underestimation, contribute to semi-transitive awareness (Ajat & Hambali, 2021). The attachment to ethnic identity due to community construction regarding violence caused by past ethnic conflicts makes the younger generation raise awareness about the importance of understanding tolerance and living in diversity. Reflecting on the variety of Indonesia, people should be aware of the potential for conflict in the future. The community leaders of West Kalimantan realize the importance of raising awareness through multicultural education from the most fundamental institution. Since 1989 the Dayakology Institute has been present to become a department of cultural research and development in Kalimantan Baran and was legally recognized on May 21, 1991. The Institute continues to sharpen its advocacy and scientific research activities to advance all West Kalimantan cultures. In collaboration with several ethnic groups, it initiates the creation of local content subjects adopted by the school curriculum to prevent the younger generation from being exposed to wrong perceptions about past ethnic conflicts.

The Dayakology Institute (DI) collaborates with the West Kalimantan Provincial Education Office to obtain direct support from the government and encourage all parties to play an active role in raising awareness of the importance of multicultural education. This movement started in 1999 with eight pilot schools at the elementary level spread across West Kalimantan. At this time, the teaching of local content has grown to the junior high school level.

"An important part of the change may be incorporating peace education into the Dayak culture. DI provides teaching materials for elementary school education as well as for junior high school level," said Krissusandi

Krissusandi Gunui, the Director of the DI, explained that the dissemination of multicultural education targets schools with homogeneous students, such as schools. Most students are of ethnic descent and have conflicts such as Dayak, Malay, Madurese, and Chinese. This is necessary considering that today's young generation should know their culture to appreciate others.

In providing teaching materials, DI and Alliance for Peace and Transformation (ANPRI) asked for help from colleagues from various ethnic groups to research their respective cultures. Therefore, schools with ethnically homogeneous students could understand the cultures of other ethnicities to accept the differences. ANPRI was initiated and established by several multi-ethnic-based organizations such as the Institute of Dayakology (Dayak), Mitra Sekolah Masyarakat (Madura), and Lembaga Gemawan (Malay), and several other organizations observing ethnic diversity issues. There are 7 pilot schools where multicultural education is held, including:

Table 2: Pilot School Implementing Multicultural Education.

No.	School Name	Dominant Ethnic	Location
1.	Santo Fransiskus Asisi JHS	Dayak and Chinese	Pontianak City
2.	Haruniyah JHS	Malay and Bugis	Pontianak City
3.	MTs Nurul Alamiah (JHS)	Madura	Mempawah Regency
4.	MTs Nahdatul Atfal (JHS)	Madura	Kubu Raya Regency
5.	Catholic Pahauman JHS	Dayak	Landak Regency
6.	Don Bosco JHS	Dayak	Landak Regency
7.	Gerpemi JHS	Malay	Sambas Regency

Source: Data comes from Multicultural Education Teaching Materials

*JHS: Junior High School

The historical track record of ethnic conflicts and the victims' evacuation center are the reasons for choosing the location of pilot schools that teach multicultural education. Most schools selected in terms of the number of

students are homogeneous. The available data on schools that implement multicultural education is only up to the secondary level.

DI and ANPRI took an identity approach to promote the local content of this multicultural education product. The approach is communicating with fellow ethnic groups to make the acceptance process easier. Therefore, the team formed to introduce multicultural education has reached 5-6 districts in West Kalimantan. Subro's statement reinforces this as one of the reconciliation figures and the Cultural Affairs Coordinator of the Madura Family Association in West Kalimantan:

"The context of multicultural education is because of the Madurese community. Mr. Julianto entered the Chinese and Dayak communities, while Sambas' friends entered the Malay community. Therefore, our knowledge is limited, considering it is a homogeneous school, predominantly Muslim or ethnically Madurese. For example, there are areas with a majority of Malays, Chinese, and Dayaks. Therefore, after being given their understanding, it turns out that all this time, what parents have heard may have been from their immediate family. With the state of West Kalimantan, which is still traumatized by the conflict, a lack of multicultural education in homogeneous schools, such as those based on Islamic boarding schools or other religious schools, has had dire consequences," said Subro

The whole process will add to the capital assets of student identity in understanding multicultural education. The perspective of sociological assets shows the ability to conduct interactions through learning. It is a challenge for the multicultural learning process to find educators who can understand the conditions of a homogeneous school environment, create humanistic learning, and bring peace.

The provision of educators to teach local multicultural content is essential as a resource in conveying messages of tolerance, diversity, and peace to homogeneous school students. Therefore, DI and ANPRI organize workshops for educators who will become teachers. There is a two-hour weekly learning slot to teach local content of multicultural education, and DI will directly support all teaching materials.

Generation of everyday awareness is crucial to encourage every human being to take action. In addition, the reconciliation process needs collaboration from all parties, such as the community, central and local government, social institutions, and stakeholders, especially for every generation, in fulfilling the conflict reconciliation movement that is still ongoing today.

Currently, DI, with ANPRI, continues to encourage multicultural education in which each chapter has an introduction to each ethnic group. The targeted schools were selected according to the criteria that most students were homogeneous. A concrete example is the Santo Fransiskus Asisi Middle School, which has students of Dayak and Chinese ethnicity, while the focus on multicultural education targets religious-based educational institutions such as Madrasah Tsanawiyah (MTs).

"This multicultural local content education targets areas prone to conflict. There are ethnic Sambas in Pontianak City in the form of houses, and there are schools where there are indeed victims of past ethnic conflicts. Therefore, this becomes an important basis for the Institute of Dayakology. These schools, including the government, make the Institute of Dayakology an example. The goal is to break the chain, and this does not become the next grudge by introducing each other's cultures. The various cultures are respected to avoid thoughts of bad stigmas, and through multicultural education, non-violent positive values are taught," Said Krissusandi Gunui.

The term "Ethnic Sambas" is developed in West Kalimantan society to call the ethnic Malay community from the regency. As one of the leaders of the Madurese community, Subro contributed to the formation of multicultural education teaching materials. Human Resources such as multicultural education teachers come from local institutions and are trained in-depth on properly using multicultural education teaching materials.

"Local teachers for teaching multicultural education have been trained, and the team from ANPRI made the materials. For example, there is a two-hour space at the school for local content, which may be filled with any subject," Subro said.
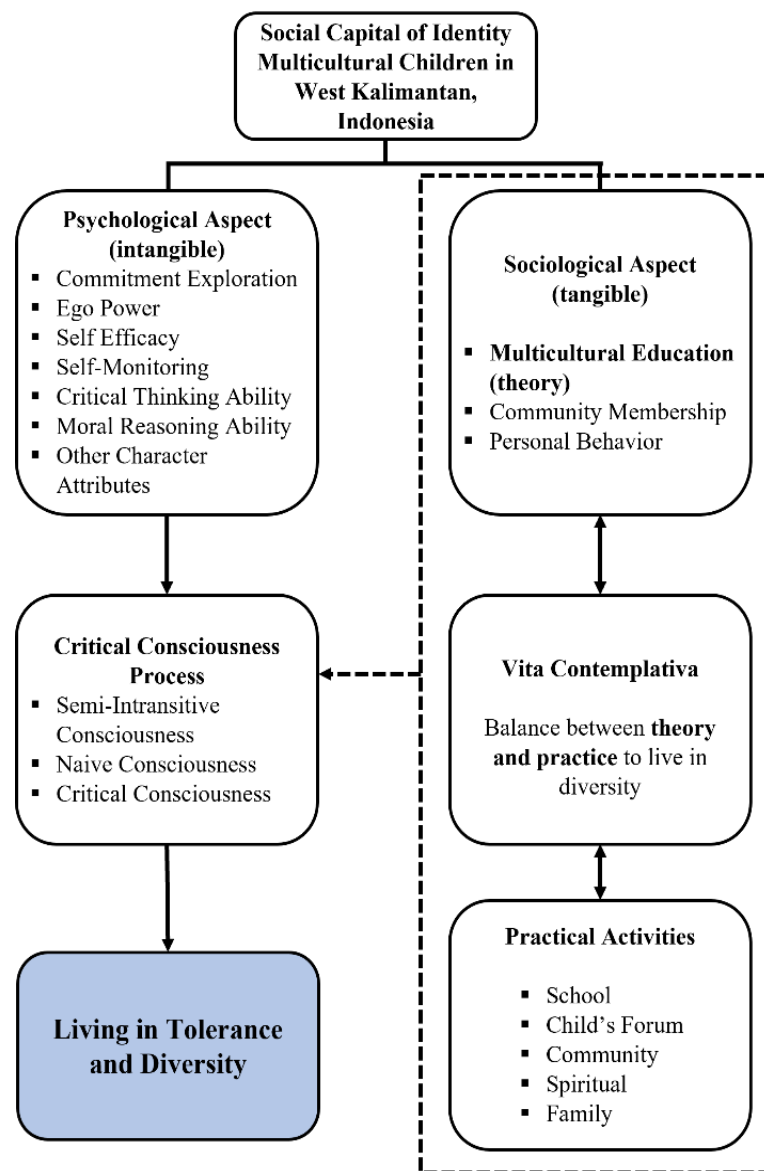

Figure 1. The Process of Raising Consciousness through Multicultural Education in West Kalimantan Chlidren
Source: Authors

The ability of students to understand multicultural education requires a long process. The awareness developed at the beginning of the learning process is intended to foster the ability to ask questions and realize the reality of variety in West Kalimantan. This was termed naive transitivity consciousness (Abdillah, 2017; Araujo et al., 2021), where ego turbulence is strong and tends to increase the strongest individual self-identity. It requires multicultural education teaching and the practice of two-way dialogue that massively builds communication.

Arendt reviews the Vita Contemplativa, which is synonymous with the need for a balance between theory and practice. Meanwhile, the act of consciousness has an element of forgiveness construction. People are more likely to be exposed to information that is not necessarily true when unbalanced with practice because they rely on common sense (Hardiman, 2003). Multicultural Education is anticipated to prevent the youth of West Kalimantan from being subjected to stereotypes and collective memories with the ideals, goals, and materials on life.

Collaboration between the government, community institutions and stakeholders is essential in implementing multicultural education in West Kalimantan by strengthening community involvement in developing and implementing multicultural education programs. In this case, the government and stakeholders need to invite the community to participate in the formation of multicultural education programs actively, choose the suitable method to implement the program and monitor the results of the program.

In collaboration, each party brings their perspectives and interests. In this case, the government and stakeholders must collaborate with the community to ensure that the multicultural approach is representative and includes all relevant interests and perspectives. Collaboration can improve the quality of multicultural education provided. In this case, the government and stakeholders must collaborate to ensure that multicultural education programs have high-quality standards and achieve their goals effectively.

Collaboration between government, community institutions and stakeholders can help reduce conflicts in implementing multicultural education programs. In this case, the government and stakeholders must collaborate to ensure that multicultural education programs do not ignore existing cultural values and promote open dialogue and tolerance between different societies.

3.2 Multicultural Awareness of the Young Generation

Multicultural awareness is essential for the younger generation because they are the future of an increasingly complex and interconnected world. In this era of globalization, people from different countries, cultures, and backgrounds meet and interact more intensively. Therefore, the younger generation needs to understand other cultures and values better and be sensitive to those differences.

Multicultural awareness helps young people understand and appreciate cultural diversity and overcome prejudice and discrimination. They learn to respect the views and beliefs of others and understand that there is more than one way to see the world. In addition, multicultural awareness can help broaden their horizons and experiences and improve their ability to communicate with people from different cultures.

The younger generation will also be future leaders, and they will have an important role to play in building a more inclusive and well-equipped society. Multicultural awareness will help them prepare to become leaders sensitive to cultural diversity and able to work with people from various backgrounds. Therefore, education needs to include a multicultural approach in the curriculum and help the younger generation build multicultural awareness early. In addition, family, friends and society must also play an essential role in shaping understanding and attitudes that are inclusive and respectful of cultural differences.

According to DuPraw & Axner (2002), multicultural competence is essential for someone to master because it relates to what we see, how we understand what we see, and how we express ourselves. A lack of understanding of cultural identity and how it affects various aspects of life can be a source of conflict and a significant obstacle in one's interpersonal relationships. Furthermore, DuPraw & Axner (2002) stated that we often know that culture influences us. Sometimes we don't even realize that we have cultural values or assumptions that differ from other people.

In developing multicultural competence, according to Moule (2012), there are four components or stages that need attention, namely: 1) Awareness, (2) Attitude, (3) Knowledge and (4) Skills. In the awareness component, it is expected to be able to realize our reactions to other people who are different. The attitude component is needed in developing multicultural competence so that individuals carefully examine their beliefs and values about cultural differences. The knowledge component is necessary because of the values, ideas, and differences. Views of others often influence our behaviour, and we are often unaware of it. Many people are often prejudiced against other people who are just known, so the knowledge component becomes very important in developing multicultural competence. The skill component required to practice communication, verbal and nonverbal cues, tends to vary

across cultures. Multicultural competence needs to be developed because harmony and unity between groups are created when they can interact and open up to one another.

Many cases of radicalism have a background of differences in ethnicity, culture, religion, beliefs and other differences due to the unpreparedness of individuals or groups to live in a pluralistic environment. When the Indonesian people have a wrong understanding of multiculturalism, it can be expected that the nation's collapse will occur and conditions conducive to state sovereignty will not be created. One of the essential agendas in efforts to overcome the signals of the nation's failure is education, especially developing a sense of humanity and respect through instilling values and mutual respect. Education should return humans to their various potentials. The crucial function is expected to be able to enter the cultural, educational, and ideological areas as well as provide ethical values at every level of society. The inculcation of this value can be realized both from formal, informal and non-formal education. They are starting from elementary school to college.

3.3 Multicultural Critical Awareness through the West Kalimantan Children's Forum

This research in-depth explores the development of the children community movement of West Kalimantan through the active participation of children under 18. The presence of the Children's Forum was strengthened by the emergence of the Convention on the Rights of the Child, Law no. 35 of 2014 concerning Child Protection, and the Ministry of Women's Empowerment and Child Protection Regulation regarding establishing a children's forum. In 2019, the development of children's forums, according to data from the Ministry of Women's Empowerment and Child Protection, has spread to 34 Provinces, 451 Regencies/Cities, 1284 Districts, and 2098 Villages under Ministerial regulations. The formation of children's forums should be from the national to the village levels. It strengthens social capital from the sociological aspect of the young generation to find a forum for children's participation following the needs of children. The interaction process of children forms social capital in terms of psychological assets, which fosters a spirit of exploration and ego management.

Farhana Fitria as a child of Madurese ethnic descent captured this moment as a member of the Pontianak City Children's Forum and conveyed the following:

"Learning at the Children's Forum, I met a lot of different ethnic groups; even though there were many conflicts, there should be a solution because we also tolerate and respect each other," said Farhana Fitria.

Understanding how every human being cannot be separated from mistakes becomes the religious value Hilaria Nugil instilled since childhood. As a descendant of the Dayak ethnicity and member of the Ambawang Children's Forum, Nugil emphasized the importance of forgiving someone who made a mistake.

"Christians and Catholics have been taught to forgive for a long time. For example, suppose some people have different religions from us and make mistakes. In that case, we should forgive ourselves because there is not a single human being without sin," said Hilaria Nugil.

The role of religion is the social capital of the younger generation to understand how to forgive and practice in daily life. Furthermore, the family factor is also a system of encouragement for an individual to live with respect for one another.Freire further classified the social capital capabilities of psychological assets in transitive critical awareness, which sees a problem from the construction of the situation. The ability to know the root arises from the two-way dialogue in the children's group (Alves & De Oliveira, 2021; Terzi et al., 2020).

More profoundly, this process becomes a positive path to understanding tolerance and diversity. Multicultural education is not the only means to voice the message of tolerance and diversity. However, in the reconciliation of ethnic conflicts in West Kalimantan, there are contributions from various parties, such as peace communities, children's forums, schools, churches, and families. Members of the forum can learn the differences and respect each other directly in the activities conducted.

Understanding participation that uses non-discriminatory values, these forums exist for children to express their opinions freely regardless of ethnic background, religion, race, and other identities. Social construction at the community level has indirectly passed through and received multicultural education in various ways. This ranges from the social value of mutual assistance, traditional values, civic education, community communities, Children's Forums, religious activities, and values instilled in the family.

4. Conclusion

Multicultural education is the essential social capital for the younger generation to live in tolerance and diversity. Seeing children as "subjects" is a concern for adults to raise awareness of the younger generation. The realization of multicultural education, which began in 1999, is the result of the movement of community institutions to instill the value of tolerance in the younger generation. Currently, multicultural education persists in pilot schools where most students are homogeneous. The integration of the national education curriculum and local wisdom should be combined sustainably. The learning pattern as social capital is not enough to raise naive awareness. The existence of openness through a two-way dialogue about the importance of knowing different peer cultures and living in diversity is an asset for students to think critically and carry the message of peace to a broader group of people. Activities ensuring intercultural dialogue should be built based on collaboration from various parties, such as the central and local governments, communities, local institutions, and stakeholders, to make "tolerance" a vital topic. However, peace dialogue is mainly carried out only by the adult generation. The younger generation's voice and participation are essential in realizing inclusive peace.

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The Case Study Method in the Accounting Classroom

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Abstract

The case study method or the case method is an important teaching method that has been used widely in education. Despite its importance, there is limited report whether the case study method has been successfully implemented in Indonesian accounting classrooms. This research aims to investigate accounting students' perceptions about the implementation of case study method in accounting education. This research is important to get an understanding of the usefulness of the case study method and the challenges surrounding the implementation of the case study method. A questionnaire is used to collect the data. We sent an online questionnaire to accounting students. The study found that while students believe that the case study method is quite useful for their learning and critical thinking, they also report challenges with its implementation. It is recommended that the instructor should provide sufficient guidance to complete the case study, and create an enjoyable and meaningful learning environment so that students can fully engage with the course that use case study method.

Keywords: Case Study Method, Accounting Education, Higher Education, Indonesia

1. Introduction

1.1 Background

According to research, Indonesian accounting graduates lack relevant competencies (Adhariani, 2020; Phan, Yapa, & Nguyen, 2020; Prayanthi & Nelwan, 2019). The overemphasis on teaching theoretical content knowledge and the lack of support for accounting students to acquire competency beyond accounting knowledge is a typical critique of Indonesian accounting education (Setyaningrum, Muktiyanto, & Hermawan, 2015). Practitioners and employers in Indonesia have emphasized the importance of changing the Indonesian accounting curriculum and pedagogy, particularly in terms of practical accounting (Pratama, 2015), information technology (Wulandari & Ali, 2019), communication (Adhariani, 2020), teamwork, and ethics (Prayanthi & Nelwan, 2019). It seems that accounting programs in Indonesia are still having trouble meeting the need for high-quality graduates (Utami, Priantara, & Manshur, 2011).

To enhance the quality of graduates, there is a need to adopt a teaching method that promote the development of students' competence, that is the case study method. The case study method is a teaching method in which students are faced with a real-life problem, the case. The case study method has been used extensively in law, medical and

business education to develop certain skills and knowledge (Biggs & Tang, 2011; Reinstein, Churyk, & Tate, 2018). Particularly in accounting education, case study method is considered to be valuable teaching method because it mirrors the real practice of accountants' day-to-day business decision-making (Reinstein et al., 2018). It is useful to frame students' learning in a real context, which is often lacking in traditional teaching approaches (Boyce, Williams, Kelly, & Yee, 2001; Dennis, 2003; Drake, 2011). This framing helps students simultaneously learn concepts and apply their conceptual understanding in practice (Biggs & Tang, 2011). Most importantly, it provides opportunities for students to develop multiple competencies (see e.g., Andiola et al., 2018; Bagley & Harp, 2012; Miller & Savage, 2009; Peaden & Stephens, 2013).

Despite its importance, teaching and learning in a public university in Indonesia, Universitas Negeri Malang, are rarely based on the case study method. Therefore, since 2020, Universitas Negeri Malang requires all academic staff to adopt the case study method in their lesson plans. Several seminars and workshops of case study method have been conducted by Universitas Negeri Malang to ensure the academic staff gets the proper idea of the case study method. Nevertheless, there is no report whether the case study method has been successfully implemented or not in the accounting classrooms. This research investigates: (1) the usefulness of the case study method, and (2) the challenges in implementing the case study method, as perceived by accounting students in Universitas Negeri Malang.

1.1 Literature Review

1.1.1 Case study method

The case study method or case method is a teaching and learning method that employs case studies to engage students in actively solving complex problems similar to those encountered in real-life situations (Magwilang, 2022; Pilato & Ulrich, 2014). In many publications, such as journal articles and books, the case study method is referred to by different names, such as case method (Forsgren, Christensen, & Hedemalm, 2014) and case-based instruction (Almuqayteeb, 2021; Magwilang, 2022).

Initially popular in medicine, business, and law education (Weil, Oyelere, Yeoh, & Firer, 2001), the case study method is quickly getting popular in other disciplines such as nursing (Forsgren et al., 2014), social studies (Dundar, 2019), educational technology (Almuqayteeb, 2021), and science (Herreid, 2007; Magwilang, 2022; Noblitt, Vance, & Smith, 2010) . The case study method is interesting in that it allows students to apply their theoretical understanding in a variety of practical situations (Knyvienė, 2014). Case study method is mostly important for discipline that requires the development of analytical and judgment skills (Weil et al., 2001). Particularly in accounting education, the case study method was implemented in response to the Accounting Education Change Commission's recommendation that innovative teaching methods must be used to develop desired learning outcomes such as problem-solving, critical thinking, communication skills, and interpersonal skills (Weil et al., 2001). Following law education, the Harvard Business School implemented the case study method in business and accounting classrooms with the goal of educating students with ready-to-apply theoretical knowledge in practice and real-world work situations (Knyvienė, 2014).

The case study is an essential part of the case study method. According to Herreid (2007), case study can be defined as a story with educational message. It usually consists of two parts, the case materials and the instructions or questions related to the case. The case materials could be a real-life case example, or if creating a real-life case is not possible, it can be replaced by designing case materials that are similar to the types of problems that occur in real life (Dundar, 2019). Case study is usually in written format, yet another modern format of case study occurred, such as a video case study (Pai, 2014).

1.1.2 The usefulness of the case study method in accounting education

Accounting courses mostly consist of practical knowledge, rather than declarative knowledge. Practical knowledge is knowledge that puts theory into practice (Biggs & Tang, 2011). To attain practical skills, accounting theory

must be integrated with accounting practice through the use of teaching methods, such as case study method (Chaffey, Van Peursem, & Low, 2011).

Apart from the benefit of enhancing students with practical skills, the case study method is also perceived to be useful to facilitate the development of non-technical competence (Agrawal, Birt, Holub, & van Zyl, 2020; Ballantine & Larres, 2009; Christensen, Harrison, Hollindale, & Wood, 2019; Crawford, Helliar, & Monk, 2011; Derstine, Emig, & Grant, 2015; Mihret, Abayadeera, Watty, & McKay, 2017; Samkin & Keevy, 2019; Viviers, Fouché, & Reitsma, 2016). Crawford et al. (2011) recommended the use of case studies to help students acquire critical thinking, and role-playing to develop students' communication skills. Derstine et al. (2015) suggested collaborative learning and case studies to enhance students' communication, decision-making abilities and mastery of technical accounting knowledge. Case studies developed by a financial institution (external stakeholder) have been found useful in soft skills growth because they help students develop decision-making, communication and research abilities (Samkin & Keevy, 2019). The students believed that the collaborative learning aspect of the case study had the greatest effect on the development of ethical behaviour and personal characteristics (Samkin & Keevy, 2019).

The use of case studies has allowed students to develop their questioning mind, and consider alternatives and perspectives for decision-making (Agrawal et al., 2020). A case study assignment contributed to the development of professional judgement of accounting students in an online auditing course (Mihret et al., 2017). A collaborative learning atmosphere in the introductory accounting classes was successful in enhancing students' leadership skills and ability to function as a team member (Christensen et al., 2019). Similarly, undergraduate accounting students in a cooperative learning environment were found to have better interpersonal and communication skills than students in a conventional learning environment (Ballantine & Larres, 2009). Fun learning activities, such as business games, were recommended as an effective and innovative teaching method that can positively contribute to the soft skills development of accounting students, especially in teamwork and communication skills (Viviers et al., 2016).

1.1.3 The challenges in the implementation of the case study method

Although numerous research has reported the benefit of case study method, several research also reported the difficulties that are imbedded in the implementation of the case study method (Adler, Milne, & Stringer, 2000; Erlandsson, 2017; Nik Ahmad, 2011). Adler et al. (2000) for example, found that students were reluctant of being actively involved in the learning process using case study method. Nik Ahmad (2011) argued that using case method in a passive learning environment is much more challenging than that in an active learning environment. Educators need to adapt and modify the method to enhance learning (Nik Ahmad, 2011).

Erlandsson (2017) points out that there are at least three difficulties to implement the case study method, including time difficulties, educational difficulties, and managerial difficulties. Time-consuming difficulties include those that will require both the teacher's and students' time and resources, such as developing the case, discussing the case, writing and grading the case reports. Another significant challenge is that, in order to be effective, the case must target multiple issue areas at the same time (Erlandsson, 2017). Educational difficulties include the difficulties that teachers will experience when adopting the case-study method, such as the inability to teach new knowledge using this method, the deductive approach, and retrospective thinking. The case-study method frequently teaches simply how and when theories should be applied, rather than why. The strategy can sometimes induce passivity as well (Erlandsson, 2017). Managerial difficulties include the difficulties that management, for example, the institution, will encounter when utilizing the case-study approach, such as the requirement that all students attend class and the difficulty in finding teaching space for big class settings. There will also be challenges if the cases are written in a second language (Erlandsson, 2017).

2. Method

This is a descriptive research study, in which the main focus is to collect and describe quantitative data regarding the implementation of the case study method in accounting classrooms, as perceived by accounting students. The data was collected through online questionnaire. The questionnaire was sent to accounting students at the Faculty

of Economics and Business Universitas Negeri Malang. These students have enrolled and completed a course that employed case study method.

The questionnaire consists of two main parts. The first part details the statements about the usefulness of the case study method in the accounting classroom (e.g., The case study helped me to be more confident about my skills related to the course, the case study allowed me to view an issue from multiple perspectives, I took a more active part in the learning process when we used the case study in the class). The second part of the questionnaire presents the statements about the challenges in the implementation of the case study method (e.g., I was frustrated by ambiguity that followed when using the case study, I needed more guidance from the instructor about the use of the case study in the class, the case study took more time than it was worth). The questionnaire was adapted from Almuqayteeb (2021) and Magwilang (2022), using a 5-point likert scale ranging from strongly agree (5) to strongly disagree (1). Apart from the close-ended questions, at the end of the questionnaire, students were invited to fill in the open questions to gain more detailed data about their perception studying with case study method. Data were analysed descriptively, to determine the greatest usefulness and difficulties derived from the use of the case study method.

3. Results

The study aimed to determine the usefulness and challenges of the use of case study method in accounting education as perceived by accounting students. Eighty-seven students responded the online questionnaire, with the majority of them (72%) are female students.

Table 1 shows students' responses regarding each of the items in the usefulness category. There are three subcategory presented in the usefulness category: learning, critical thinking and engagement (Almuqayteeb, 2021). Students reported that their engagement in the classroom during the course that implement case study method was lower (3.3) than their learning and critical thinking (3.7). This finding suggests that overall, students value the case study method is more beneficial for the development of their learning and critical thinking, rather than for increasing their engagement/interest in the subject being taught.

Specifically, of the 18 items in the questionnaire, 5 items have a mean score higher than 4 on a 5-point scales, which indicates the most useful aspect that students felt from implementing case study method in accounting education. Students perceived that: the use of case study was relevant in learning about the course concepts (4.2), the case help them to analyze the basic elements of the course concepts (4.1), the case was related to the field of study (4.0), the use of the case study was thought-provoking (4.1) and allow students for more discussion of course ideas in the class (4.1).

Of the 18 items in Table 1, 13 items have a mean score between 3 – 3.8 on a 5-point scales, indicating that students were unsure whether case study method was quite useful for their learning. The 5 items in the questionnaire that have the lowest mean score are: I felt immersed in the activity that involved the use of case study (3.2), I was more engaged in class (3.3), I took a more active part in the learning process (3.3), I was able to apply the course concepts and theories to new situations (3.3), I felt that we covered more content by using the case study in the class (3.3).

Table 1: Usefulness of using case study method

Usefulness	*M*	SD	Percentage of Response				
			Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Learning	3.7						
1. I felt the use of case study was relevant in learning about the course concepts.	4.2	0.5	28.7	64.4	6.9		
2. The case study helped me to analyze the basic elements of the course concepts.	4.1	0.5	20.7	70.1	9.2		
3. I felt what we were learning in the using case study related to my field of study.	4.0	0.6	25.3	58.6	16.1		

	M	SD					
4. The case study was helpful in synthesizing ideas and information presented in the course.	3.6	0.4	5.7	57.5	33.3	3.4	
5. The case study allowed me to retain more from the class.	3.6	0.7	9.2	56.3	25.3	9.2	
6. I felt that we covered more content by using the case study in the class.	3.3	0.8	6.9	34.5	42.5	14.9	1.1
7. The case study helped me to be more confident about my skills related to the course.	3.4	0.8	8.0	40.2	40.2	9.2	2.3
8. The case study helped me to be more confident to apply knowledge into real world problems.	3.7	0.7	13.8	49.4	33.3	2.3	1.1
Critical Thinking	3.7						
9. I thought the use of the case study in the class was thought-provoking.	4.1	0.7	34.5	52.9	9.2	2.3	1.1
10. The use of case study allowed me for more discussion of course ideas in the class.	4.1	0.8	33.3	48.3	14.9	2.3	1.1
11. The case study allowed me to view an issue from multiple perspectives.	3.8	0.8	25.3	41.4	26.4	6.9	
12. The case study allowed me for deeper understanding of course concepts.	3.7	0.7	12.6	52.9	28.7	4.6	1.1
13. The case study brought together material I had learned in several other special education courses.	3.4	0.8	9.2	43.7	33.3	13.8	
14. I was able to apply the course concepts and theories to new situations as a result of using the case study.	3.3	0.7	4.6	37.9	44.8	12.6	
Engagement	3.3						
15. The case study added a lot of realism to the class.	3.7	0.8	17.2	48.3	24.1	10.3	
16. I was more engaged in class when using the case study.	3.3	0.8	6.9	37.9	42.5	10.3	2.3
17. I felt immersed in the activity that involved the use of case study.	3.2	0.7	1.1	41.4	42.5	13.8	1.1
18. I took a more active part in the learning process when we used the case study in the class.	3.3	0.8	9.2	31.0	46.0	13.8	

The findings also revealed that students have difficulties with using the case study method in accounting classes (Table 2). For example, students agree that the ambiguity resulted from using the case study frustrated them, that the case study took more time to complete than it was worth, that the format of the case study was difficult, and that more guidance from the instructor about the use of the case study in the class is required.

Furthermore, students have conflicting feelings about several questionnaire items. For example, most students were unsure (neutral) about whether learning the course that uses case studies is interesting and enjoyable, and they were also unsure about whether they are confident enough to do well and understand the course that uses case studies.

Table 2: Challenges of using case study method

Challenges	M	SD	Percentage of Response				
			Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1. Learning the course that use case study is interesting	*2.8*	0.9	2.3	19.5	42.5	27.6	8
2. I enjoy learning the course that use case study.	*2.6*	0.8	2.3	10.3	47.1	29.9	10.3

3. I am confident I will do well on the course that use case study.	*3.0*	0.7	2.3	21.8	57.5	16.1	2.3
4. I am sure I can understand the course that use case study.	*3.2*	0.7	3.4	31.0	49.4	14.9	1.1
5. I was frustrated by ambiguity that followed when using the case study*.	*3.7*	1.1	34.5	25.3	21.8	14.9	3.4
6. I found the use of case study format challenging in the class*.	*4.0*	0.8	28.7	50.6	14.9	5.7	
7. I needed more guidance from the instructor about the use of the case study in the class*.	*4.5*	0.7	63.2	31.0	2.3	2.3	1.1
8. The case study took more time than it was worth*.	3.7	0.9	21.8	39.1	28.7	9.2	1.1

4. Discussion

The case study method is a teaching and learning approach that involves students in actively solving complex problems similar to those they would face in the real world (Magwilang, 2022; Pilato & Ulrich, 2014). Case study method could help students bridge the gap between accounting theory and practice (Chaffey, Van Peursem, & Low, 2011). This study intends to reveal students' perceptions about the usefulness and challenges they experienced during the course that use case study method.

The findings of this study suggested that students agree that case study method is quite useful for their learning. Students believe the use of case study was relevant in learning about accounting course. Accounting courses are characterized by practical knowledge instead of declarative knowledge. Practical knowledge is knowledge that put theory into practice (Biggs & Tang, 2011). To attain practical knowledge, accounting theory must be integrated with accounting practice through the use of case study method (Chaffey et al., 2011).

Furthermore, students also believe that the use of case study method was thought provoking, enhancing their ability to think critically. Similarly, previous studies also advocated for the use of case study method to help students develop critical thinking skills (Crawford et al., 2011). Derstine et al. (2015) and Agrawal et al. (2020) stated that case studies improve students' decision-making abilities and allow students to consider alternatives and perspectives for decision-making. Moreover, the case study assignments helped students to develop professional judgment, a skill that beneficial for accounting and auditing students (Mihret et al., 2017). To potentially enhance students' critical thinking, Samkin and Keevy (2019) pointed out the need to develop high quality case studies which include complex problems imitating real accounting practice. They suggest accounting instructors to develop case studies materials together with external stakeholders such as financial institutions or practitioners (Samkin & Keevy, 2019).

While the case study method is useful for student's learning and critical thinking, unfortunately, the findings in this study also suggest that students were less engage in the course that use case study method. This is contradict to the findings of previous studies (Almuqayteeb, 2021). According to Almuqayteeb (2021), using the case study method increases student engagement, which has the potential to improve student learning. Theoretically, case study method is preferable to traditional lecture-based instruction for engaging students in classrooms because the method makes students active participants as they simulate themselves in a real-world situation (Magwilang, 2022). However, as evidenced by this study, this does not always occur in all classrooms. Students were disengaged, most likely because they were unmotivated and encountered difficulties when using the case study method. Students, for example, perceived that the ambiguity caused by using case studies frustrated them, and that the case study format was difficult to understand. This was exacerbated by the instructor's lack of guidance. As a result, students felt their learning experience during the course was uninteresting, unpleasant, and they were dissatisfied with their academic performance.

In terms of a lack of guidance from instructors, previous research has found that students have varying abilities to deal with complex problems and thus require extra guidance from teachers (Irafahmi, 2021). The case studies,

which mirrored real accounting and auditing jobs, were substantially more difficult than traditional learning activities. Teachers can help students who are having difficulty addressing the issues in case studies by providing signposts that guide them on how to respond to the issues presented in the case (Boyce et al., 2001). Excessive guidance, on the other hand, represents teachers controlling students' learning and reducing students' autonomy to deal with problems on their own. As a result, teachers must provide guidance at appropriate times, such as during the early stages of implementing a case study method (Boyce et al., 2001).

5. Conclusion

Overall, students believe the case study method is quite useful, but they also report difficulties with its implementation. To realize the full potential of the case study method, the factors that impede students' learning with a case study method must be eliminated. The instructor should provide more guidance to the case study materials and create a fun, meaningful learning experience for students so that they can fully engage with the course.

This study, like all empirical research, had limitations. This study focused on the students' perspective. Future research may consider examining teachers' perspectives on using the case study method in accounting classrooms. Investigating the case study method from the perspectives of both educators and accounting students will provide a more comprehensive understanding of its implementation.

Acknowledgments

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Exploring the Recontextualisation Process in Developing the Plant Biotechnology Course: A Bernsteinian Analysis

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Abstract
The purpose of this study was to explore the recontextualisation of knowledge in the development process of the plant biotechnology course with an aim of understanding how knowledge is to be framed and classified in the course. The plant biotechnology course was developed for the students enrolled in the department of biological sciences. The course was also included in the curriculum for the students training to be teachers of biology in secondary schools in Zambia. The aim of any training is to prepare the students for their future profession. Therefore, a need to understand how the plant biotechnology course was developed in relation to meeting the objectives of a teacher training curriculum. 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 research question which guided the study was: How is knowledge recontexualised in the development process of the BT 440 course? Interviews were used to collect the data. Bernstein's classification, framing, recognition and realization rules were used to analyze and interpret the findings. An inductive approach was used to analyse the transcript. Atlas ti 8 was used to analyse the transcript. The findings of the analysis indicated that the analysis of the interview data has revealed that the control relations (framing) between the agents in terms of hierarchical rules, knowledge selection, sequencing, pacing and the evaluation criteria were all strongly framed (F+). In terms of the relations between discourses, the classification was weak (C-) in the inter-disciplinary, intra-disciplinary and in the inter-discursive relations, indicating a weak recognition and realisation of the text.

Keywords: Biology Education Students, Classification, Framing, Pedagogic Discourse, Recognition, Realization, Recontextualisation

1. Background to the study

The plant biotechnology course (BT 440) is one of the courses taken by students training to be teachers of Biology in secondary schools in Zambia. The development of the course has a great influence on how the course is to be taught and what content is included in the course (Bernstein, 2000). At the Copperbelt University (CBU), the BT

440 course is developed is one of the courses developed in the Department of Biological Sciences (DoBS). BT 440 course is designed for the students enrolled in the DoBS 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 (DMSE). The lecturers in the DMSE are not involved in designing the BT 440 course. Yet the plant biotechnology course designed for the students in the DoBS is included in the programme for the biology education students who are enrolled in the DMSE.

2. Problem statement

The BT 440 course is designed by for the students enrolled in the DoBS. The development of the course was guided by the objectives to be attained by the students enrolled in the DoBS. The objectives to be attained by the students enrolled in the DMSE did not guide the development process of the BT 440 course yet the course is also taken by the biology education students enrolled in the DMSE. The objectives of training the students enrolled in the DMSE is to be able to teach the 5090 biology in secondary schools in Zambia. Bernstein (2000) clearly indicate that, the development of a course determines how a course will be taught and what content to be taught. In this situation, the course may not help to meet the objectives of training the biology education students.

3. Purpose of the study

The purpose of this study was to explore the recontextualisation process in developing the BT 440 course at the Copperbelt University in Zambia.

4. Research Question

The research question which guided the study was:
How is knowledge recontexualised in the development process of the BT 440 course?

5. Literature review

The literature review was focused on Bernstein's concepts which are relevant to this study. The concepts reviewed in this study are: recontextualisation, classification, framimg, 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 get 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 to 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 recontextuslised it will no longer resemble the original discourse because it has been converted or pedagogised into a pedagogic discourse/pedagogic communication (Diehl et al., 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 devices (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 recontexualisation, knowledge is transformed (Bertram, 2008; Bibila, 2016; Reeves, 2006). The process of recontextualisation leads to the formation of a vertical discourse. The vertical discourse has two knowledge structures which are vertical structure or a horizontal structure. It is through recontextualisation that horizontal discourses are transformed to have a vertical structure. That is making the knowledge to be meaning in different contexts. 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 organised which could be achieved by analysing the pedagogic discourse. Analysis of the plant biotechnology 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 in a biotechnology course in a teacher education context.

The field of recontextualisation has two sub-fields, thus the official recontextualisation field (ORF) and the pedagogical recontextualisation field (PRF). Below I will focus the discussion on the two sub-fields of the recontextualisation field.

The official recontextualisation field (ORF) is the field which is dominated by government agencies and its officers. This field includes the government departments at national level, provincial level and at district level. The field also includes the researchers and the subject inspectors or the standard officers at the different levels of the nation who are the advisors. The ORF also include the people who are not specialists in the pedagogic discourse, such as the stake holders from industries. Stakeholders have interest in the education and that they could influence the state and the pedagogic practices (Bibila, 2016; Prayer-koro, 2012) . For this study, agents in this field could include the standard officers at national level, provincial level from the ministry of education, curriculum development centre, researchers from the research centres, stake holders, that are agents from the industries (Bernstein, 1990; Bernstein 2000).

The PRF consists of the people who are in the education such as the Universities, colleges of Education, examination boards such as the Examination Council of Zambia, textbook writers, specialised journals, and the

research foundations. In the case of this study, this field could include the lecturers in the departments, lecturers at school level, members of the Academic Development committee and the stake holders from industries.

The PRF has different degrees of autonomy. In some cases, the ORF has an influence on the PRF this is because the dominant ideology of the ORF get recontextualised into the curriculum. The influence the ORF has on the PRF varies from nation to nation and even within the nation with time (Bibila, 2016; Player-koro, 2012; Bertram, 2012). When the ORF has some influence over the PRF, it affects what goes on in the classroom practices. Hence what may take place in the classroom practices maybe an on-going struggle between government, government departments and Universities or schools (Bibila, 2016; Player-koro, 2012; Bertram, 2012). Therefore the pedagogic discourse which is appropriated in the classroom practices depend on the dominant ideology in the ORF (Enderstein, 2015).

Hewlett (2013) points out that the curriculum in higher education is tailored towards achieving the nation needs and the needed professions in the developmental needs. This situation demands that knowledge from the production fields be selected, relocated and delocated in a process called recontextualisation. In doing so, knowledge is transformed into a new discourse. The plant biotechnology course draws the knowledge from a number of knowledge sources. The process of selecting and pedagogising knowledge from the disciplines and creating a course like the plant biotechnology BT440, for example, is what Bernstein called pedagogic recontextualisation.

Bernstein used the concepts of classification and framing to understand, describe and characterize the rules of the pedagogic discourse. Classification is about the organisation of knowledge. Classification shows the relation in the knowledge. Strong classification is indicated when there is no relation in the knowledge and weak classification is indicated when there is a relation in the knowledge (Bibila, 2016; Mukute & Pesanayi, 2015; Bertram, 2008; Rose, 2014; Reeves, 2006). Classification helps to inform how much each curriculum subject is distinct or unique in the curriculum. Classification also shows how much the subjects are related to each other in the curriculum. It is the relationship between the subjects in the curriculum which is a concern for educators. Subjects are to be related when the classification is weak. On the other hand classification is strong when the subjects are not related. Classification is concerned with the strength of the boundaries between categories such as discourses, agents and practices. The relation in the topics in a course also show the classification of knowledge in a course (Bertram, 2012a; Hoadley, 2007, 2012; Hoadley & Galant, 2016). Bernstein (2000) used the concept of classification to examine the strength of the boundaries between the different categories/subjects. For example, the relationship (a) between teacher-student and student–student (b) between discourses- intradisciplinary relation, interdisciplinary relation and relation between academic and non-academic knowledge (c) between spaces- teacher's space – students' spaces of different students. Such relationship can be characterised by the form of the boundary. When the boundaries between the categories is blurred between students of different social groups (social class, gender, race, school achievement) then the classification is said to be weak. This means that the students share physical and material space. Strong classification will entail that boundaries between will be very sharp between space and material and that hierarchies between students will exist. However, the teacher–student relationship is always strong. However, at the intra-disciplinary level, there is a weak classification between the several contents of a given discipline and the content in the discipline are interrelated. At the interdisciplinary level, a strong classification exist since the contents of the curriculum are separated from each other, there is no relation in the contents of the discipline in the curriculum. A curriculum is said to be strongly classified if the subjects in the curriculum are highly differentiated and separated into traditional subjects. That is there is no relationship in the subjects in a curriculum. While a curriculum is said to be weakly classified if the subjects are integrated and the boundaries between the subjects are weak/fragile/blurred. That is there are relationships between the subjects in a curriculum. Bernstein also used the concept of framing to describe the control relations in the Pedagogic discourse. Framing is concerned with the control relations in a pedagogic discourse. Framing regulates the knowledge to be created and what knowledge is available in the different categories (Diehl et al., 2015). Framing enables the conversion of knowledge into the pedagogic communication. The concepts of classification and framing have been used to describe the organisation of the content in the curriculum and how the education knowledge is transmitted and acquired (Bertram, 2012; Hewlett, 2013; Mukute & Pesanayi, 2014).

Framing is said to be very strong (F++) when the transmitter (lecturer) has the control over the selection, sequencing, and time given to learning and if the teacher makes clear to students the text produced as the result of learning, while framing will be very weak (F--) when the acquirer has some control upon selection, sequence, pacing and evaluation criteria. When the framing is strong in a relationship between the transmitter and the acquirer, the transmitter (lecturer) appeals to given rules and statuses. For example, the lecturer uses orders, verbal or physical language in leading the students to behave in a given way and that the lecturer does not give reasons why the students are expected to behave that way. In a weak framing, the transmitters (lecturer) need to explain why the acquirer (students) need to behave that way and the students may criticise the practice of the lecturer.

The concept of framing is used at both macro and micro levels. At macro level, framing refers to relations within boundaries and that it is through interaction/framing that boundaries between discourses, spaces and subjects are defined, maintained and changed. At micro level, framing refers to the control over the rules of communication. Framing is concerned with the control relations between the transmitters and the acquirers. Classification and framing concepts describe the structural and interactional aspects of the pedagogic practices as it expresses the power and the control relations in a pedagogic practice (Bernstein, 1999; Bertam, 2012). In this study, the concepts of classification and framing were used as the analytical tools.

6. Methodology

To answer the research question for this study, a qualitative case study research design was used to explore the recontextualisation phenomenon by examining the data within a specific context (Tight, Symonds, & Symonds, 2016). A case study was used to allow an in-depth information on the case since I needed to provide a thick description of the phenomenon of "recontextualisation of biotechnology knowledge in the course".

The case study was centred on the Copperbelt University's Department of Mathematics and Science Education and the Department of Biological Sciences.

To be able to describe the recontextualisation of biotechnology knowledge in the plant biotechnology course, I was searching for the relations in the contexts in which the recontextualisation of biotechnology knowledge was taking place. As a researcher, I depended on the individuals involved in the design of courses.

The research site for this study was the Copperbelt University where the Department of Mathematics and Science Education and the Department of Biological sciences are of specific interest. The Copperbelt University was established through Act of Parliament No. 19 of 1987. The Copperbelt University is currently operating from four campuses which are Jambo Drive main campus, Parklands campus, Ndola campus and Kapasa Makasa campus. This study was carried out from Jambo Drive main campus.

I selected the Department of Mathematics and Science Education (DMSE) and the Department of Biological Sciences (DoBS) at the Copperbelt University for three reasons. The reasons for selecting the two departments in the School of Mathematics and Natural Sciences are that the students training to be teachers of biology in secondary schools are enrolled in the Department of Mathematics and Science Education and that the curriculum to be followed by the biology teacher education students is prepared in the Department of Mathematics and Science Education. One of the courses included in the curriculum for the biology teacher students is the plant biotechnology course which is developed and taught in the Department of Biological Sciences, hence the reason for choosing the Department of Biological Sciences as a site for this study.

The research participants in the study were purposively chosen on the basis that they had knowledge of the phenomenon to be investigated in the study (Merriam & Tisdell, 2015). The participants included the lecturers who were involved in either developing the course in the Department of Biological Sciences and teaching the plant biotechnology course in the Department of Mathematics and Science Education, the lecturers who were involved in developing the curriculum for the biology education students in the Department of Mathematics and Science Education, curriculum specialists who were involved in developing the 5090 biology syllabus at the Curriculum Development Centre.

Twelve participants were included in this study. Four of the participants were the lecturers from the Department of Mathematics and Science Education at the Copperbelt University. The head of the Department of Mathematics and Science Education and the four lecturers who were involved in teaching the fourth-year science education course at the time of data collection were involved in the study. Six of the participants were the lecturers from the Department of Biological Sciences. Participants involved in the study from the Department of Biological Sciences were the head of the department and the five lecturers who were involved in teaching the plant biotechnology course at a time of data collection.

To collect the data in this study, the interview method was used. The interview guide which was prepared by the researcher was used to collect the data. the interview guide was developed in line with the research question. The instrument preparation was guided by Mason, (2002) and Hancock (2007). Mason, (2002) and Hancock, (2007 have indicated that a research instrument should be prepared in reference to the research questions guiding the study. These approaches allow the topics and the issues to be covered in the interview to be outlined in advance on the interview guide. The research questions which guided the development of the interview guide is, ''How is biotechnological knowledge recontextualised in the plant biotechnology course at the Copperbelt University? Interviews were conducted in line with Mason (2002) and Hancock (2007). The two have indicated that the researcher needs to develop an interview guide on which the topics and the issues to be covered in the interview are specified. The two authors have also indicated that a researcher will decide the order in which the questions will be asked in an interview.

To understand the development of the BT 440 course, structured interviews were used to collect the data. The interviews were conducted with 10 academic staff as these were the main people involved in developing the BT 440 course. The 10 respondents came from the two departments, the Department of Mathematics and Science Education (DMSE) and the Department of Biological Sciences (DoBS). Six of the interviewees, that is interviewees 1, 2, 3, 4, 5 and 6 were from the DoBS, while four of the interviewees, that is interviewees 7, 8, 9 and 10 were from the DMSE. All the interviewees were lecturers. Two of the interviewees were heads of the department (HoDs) in the two departments, DoBS and DMSE, respectively. The indicators for the discursive rules and discursive relations were developed to guide the analysis of the transcripts were developed using Basil Bernstein's classification and framing concepts. Atlas ti 8 software was used to analyse the data. Thematic analysis was used to analyse the data. The transcripts were analysed using the indicators developed to guide the analysis.

7. Findings of the study

A thematic analysis approach was used to analyse the interview data. The data was inductively coded using Atlas ti 8 software. Table 1 has shown the codes, categories and the theme which emerged from the analysis of the interview data.

The categories are mutually exclusive and only the codes which are related were placed in the same category. Eight categories emerged from the analysis of the codes. The categories which emerged are: biotechnology content, selection of knowledge, sequencing of knowledge, pacing of knowledge, sources of knowledge, teaching approaches, relations between categories and regulative discourse. The instructional discourse emerged as the main theme in the analysis of the interview data. Below I focus the analysis on the categories.

Table 1: Codes, categories and theme from the analysis of the Interview data

SNO	CODES	CATEGORIES	
1	● Application of biotechnology	**BIOTECHNOLOGY CONTENT**	**INSTRUCTIONAL DISCOURSE**
2	● Biotechnology it's a cumulative.		
3	● Definition of biotechnology		
4	● Knowledge of biotechnology		
5	● Need for new programmes		
6	● Skills in biotechnology		
7	● Assignments	**EVALUATION CRITERIA**	
8	● Examinations		
9	● Explicit assessment		
10	● Focus on tests and examination		
11	● Tests		
12	● Lecturer's work plan	**PACING OF KNOWLEDGE**	
13	● Time decided by lecturer		
14	● Disciplinary relations	**RELATIONS BETWEEN DISCOURSES**	
15	● Nature of biotechnology		
16	● Agents in course development	**SELECTION OF KNOWLEDGE**	
17	● Biotechnology course development		
18	● Course details		
19	● People involved in course development		
20	● Stake holders		
21	● Foundation courses needed	**SEQUENCING OF KNOWLEDGE**	
22	● Topic arrangements		
23	● Books	**SOURCES OF KNOWLEDGE**	
24	● Course outline from other universities		
25	● Experiments		
26	● Hand outs		
27	● Journals		
28	● Discussion	**TEACHING APPROACHES**	
29	● Field trips		
30	● Guidance!		
31	● Lecture method		
32	● Practicals		
33	● Presentations		
34	● Production of biotechnology		
35	● Projects		
36	● Question and answer		
37	● Classroom control	**REGULATIVE DISCOURSE**	
38	Control in behaviour		

Evaluation criteria

Evaluation is key in any pedagogic practice as it condenses the entire meaning of the pedagogic practice. The main goal of any pedagogic practice is to transmit the criteria which are not known to the learner. For the criteria to be transmitted, the criteria need to be made known to the learners. There are a number of ways in which the criteria can be explicated. Analysis of the interview data revealed that tests, labs, and the sessional examination were some of the ways in which criteria was made explicit in the developing of the plant biotechnology course.

It was evident in the data that as the course outline is developed, the assessments and the weighing of each of the assessment is indicated in the course. The course outline indicates the percentage allocated to the tests, assignments, labs and the sessional examination. Further, the findings indicated that, at least three tests and three assignments are done during the teaching and learning of the course.

Interviewees indicated that the assessments in the course were prepared in line with the assessment standards for CBU. For example, respondent 3 indicated that,
> ''The standard assessment for CBU is you have 40% continuous assessment and you have 60% which is the exam. Now under the continuous assessment, you give tests, at least 3 tests. So, test 1, test 2, test 3. So in term one you give one test, term two another test, term three another test. Then in addition to that, labs, provided there are reagents and so forth. You give labs as well; each course has got a certain number of labs which are prescribed which are supposed to be given.''

Therefore, the data indicated that CBU is explicit in the evaluation criteria to be achieved through the assessments done. The findings further indicated that, some of the lecturers explicated the criteria by guiding the learners on what was missing in the answers written by the learners. As lecturers mark the assessments, some lecturers wrote the correct answers on the answer sheets of the learners to guide them on the expected text. As respondent 1 notes that,
> ''Say you require a student to determine the gene order of certain genes. So, say, when the students is supposed to determine that, you would have given them distances between the particular genes, so when formulating that, at least, they have to have a genetic map, they come up with the genetic map. Doing that they will have to make some drawings, they will have to determine, which one is the longest distance and which one is the shortest distance. From there, they will determine which one is the gene order, yes, depending on the one which where furthest from each other. So, If the student doesn't do like that, I would at least draw a genetic map for them, then from their they would get the order.''

Respondent 1 further confirmed that in guiding the students on what was missing in their work helped the students to perform better in the examination and in the tests as the respondent indicated that,
> ''I have had the students last year for BT 410, who had trouble determining …. some parental types from a population, I don't know if you know that we have recombination that take place in the genes, from those recombinations, the phenotypes that come up are different from the parental type. So, based on the population, or the number of organisms that are produced, one is able to determine which ones are the recombinants and the parental type. So those which are many are the parental type, those which are less are the recombinants. They are either double or single recombinants. So, I did that, then I just changed a bit with the final exam question, then I found that the person actually managed. They got the question correct in the exam as in the test.''

In doing so, the lecturer was revealing the criteria to the learners. Some lecturers only made the comments on the answer scripts of the learners. Three (3) respondents out of 10 respondents, indicated that they guided the learners on what was required of them in the answers.
While some of the lecturers indicated that, due to the high numbers of the learners in the classes, they did not comment or guide the learners on the answer scripts of the learners. Instead the lecturers only underlined the serious mistakes in the answers of the learners. For example, respondent 3 indicated that he guided the students,

> ''Up to a certain level. For example, when there are 150 scripts, it will be very difficult to make comments on all scripts. But generally, we put some comments. When there is a serious mistake, we give them comments in the answer scripts in some cases. In my case I underline the wrong sentences, and tell the students to check on those underlined areas. That is to reduce the work load. So, otherwise it takes weeks to mark, complete the marking. So, we just underline and tell the students to take note of the underlined

areas. Underline means there is a mistake in that. And tell them to look for the mistakes. And then in some cases we write few comments.''

The analysis on the evaluation criteria indicate a strong framing (F+) in the evaluation criteria.
Some of the lecturers did not comment or indicate anything on the answer scripts of the learners. Instead, answers were marked only as either wrong or correct. An interview extract with responded 2 exemplifies this,

''**Researcher:** And when marking the assessments especially the tests, do you indicate on the papers, what is wrong with the answer? Why the student has not gotten the mark?
Respondent 2: Usually your marking key.
Researcher: Do you show on the paper of the students, that you needed to do this.
Respondent: no we don't, but if it is, we just mark its wrong. So if a student comes now to query, that's when we produce the key, and usually we give them the marking key. So they verify themselves were they went wrong''

In this case, the evaluation criteria are weakly framed (F-). This indicate that the lecturer did not explicate clearly the criteria to be acquired by the learners.

Overal analysis of the evaluation criteria has indicated that sometimes, in most cases, the lecturers clearly indicated what was missing in the answer of the learner, and in some cases, lecturers only notified that something is wrong without indicating what was missing exactly and in some cases, the lecturer did not make any indication. Therefore, on average, the findings indicate that evalaution criteria were explicated in some cases and it was not explicated in some cases. The evaluation criteria in general are strongly framed (F+) since in most cases the lecturer explicated the criteria.

Knowledge selection

Knowledge selection is concerned with the identification and extraction of the knowledge to be included in the course from the different sources. The process of selecting knowledge was a consultative process in which a number of individuals were involved. The analysis revealed that a number of experts were involved in the selection of knowledge to be included in the course. The analysis here was focused on understanding how the BT 440 was developed as this will help to understand how biotechnology was recontextualised to produce the BT 440 course. A course is developed when there is a need to teach the course. For example, in the Department of Biological Sciences (DoBS) new courses were developed when the department was developing the biology degree programmes. The plant biotechnology course (BT 440) is one of the courses developed in the biotechnology programme which was developed in the DoBS. At the CBU, developing a course is a consultative process in which a number of people are involved. Some of the people involved include the academic staff who are the lecturers, the stake holders from industries, and accreditation officers of the Higher Education Authority (HEA). The people involved in developing the course determine and influence the content of the course. Five codes were sorted into this category as shown in Table 1.

Nine respondents indicated that the selection of the knowledge into the course BT440 is a consultative process as a number of people were involved. Developing a course involves the lecturers at departmental level, at school level, members of the academic development committee and the stake holders from the industries. Nine of the ten lecturers indicated that stake holders from industries were the major sources of information. These industries include the Zam-seed and Seedco. It was evident that stake holders have helped to inform the desired knowledge, skills and values in industries. For instance, respondent 6 stated that,

''The major source of information for developing those courses was industry. They had to go out to stakeholders and ask the stakeholders whether it is the mining industry in our area, for microbiology it was the hospitals, research centres, other institutions to find out what are the needs, what has to be addressed in these courses.''

Respondents 8 also adds that,

''when we are talking of the stake holders, here we are talking about, the ministry of education, ministry of education, but then operating with its other wings like teaching council, Higher Education Authority, Zambia Qualifications Authority. All these at the end of the day, they need to be involved.''

At departmental level, experts in the area in which a course is being developed are tasked to develop a course outline. They make suggestions of the content to be included in the course outline. Experts consult a number of sources from which the knowledge to be included in the course is selected from. Some of the sources consulted are the course outlines developed in other universities, textbooks, journals. The course outlines from other universities are downloaded. Lecturers have to compare and benchmark with other universities. Respondent 5 indicated that,

''we have created different courses from the different curriculum from the different university and then we have selected the best. We have modified the syllabus and then has formed the new curriculum for the biology students.'' (Respondent 5)

In a similar view, respondents 3 adds that,

''the standard course which is Plant Biotechnology which is offered in South Africa, which is offered in America, which is offered in Netherlands that is the same course that we are offering here. And that course basically covers all the main areas in agriculture, in terms of how you can apply and so forth.''

The developed course outline is discussed first in the department. Once the department has finished, the course is then discussed at school level where all the members in the school have to be present in the Board of Studies. In this discussion, the members are free to suggest changes to the course content and the assessments. The school board either approves or disapproves the course. When the course has been approved, it is taken to the Academic Development Committee of the University Senate. At this level the members of the Senate also check the details of the course. Senate members also check if the course is in line with the university regulations. When the course has been approved at this level, it is then taken to the Higher Education Authority (HEA) for evaluation for the purpose of accreditation. The HEA will also check if the course meets the expected standards of which some of them include the qualifications of the lecturers to teach the course and the hours accredited to teach the course. If the course meets the expected standards, it will then be approved by the HEA. Only the course has been approved by the HEA that it will be taught in the university.

Course development procedures were evident in the 9 respondents. One respondent indicated that was not sure of how the courses were developed in the university. This could be because the lecturer was new in the teaching and had just joined the University. The 9 respondents had the similar views of how courses were developed. For example respondent 9 stated that,

''The way the courses are developed, you sit at departmental level and you agree which courses to include in the curriculum and the content of those courses and why those courses you are including them in your curriculum. Then after that at departmental level you take it to the school level, and if it is agreeable at school level then a letter is written. Some kind of recommending that these courses we need them in the department. That is now the Dean in collaboration with the HOD of the department, they write a letter to management and academic, there's an academic committee there and those are the people who will either agree to say yes go ahead with this course or not and they'll write back. ''

In this case, in terms of selecting the knowledge to include in a course, the lecturers and the stake holders decided the content to be included in the course. The learners are not involved in the selection of the content to be included in the course. Therefore, the selection of knowledge is strongly framed (F+).

Sequencing of knowledge

Sequencing is concerned with ordering of the content to be done in the course. In this study sequencing was analysed in terms of control in ordering the topics in the BT 440 course. Respondents indicated that, the topics in the BT 440 course are not presented in the order in which they are to be taught. Therefore, the lecturer teaching the course has to arrange the topics in the order in which the topics are to be taught. When a course outline has

been given to the lecturers, the lecturers decide the order in which the topics are to be taught. Lecturers develop a teaching plan which is to be followed in teaching the course topics.

Topics are taught in a relation to each other. That is a hierarchical arrangement of the topics. Topics are hieratically arranged as one needs to understand the basics of the topic before getting to the next topic (Respondents, 1 and 2). For the topics to be arranged in a relationship to each other, the person arranging the topics should have a good understanding of the knowledge, skills and values taught.

> '' We have basics first. One needs to acquire some knowledge. Biotechnology is more practical than theoretical. Though if you just get to say DNA extraction or probably insertion of the new gene in a particular DNA. Somebody must have acquired some knowledge about the DNA. Where it is found, what is the person supposed to do to get the DNA. Yes! First it should be some introduction. Somebody need to acquire the basics first.'' (Respondent 1)

Nine out of the ten respondents indicated a similar view as they indicated that, the lecturers teaching the course were the ones to arrange the topics in the order in which they will be taught. When a course is designed, it has the topics to be done, the assessments, the practicals, the aims of the course and the objectives to be achieved in the course. For instance,

Respondent 1 indicated that,

> ''We have basics first. One needs to acquire some knowledge. Biotechnology is more practical than theoretical. Though if you just get to say DNA extraction or probably insertion of the new gene in a particular DNA. Somebody must have acquired some knowledge about the DNA. Where it is found, what is the person supposed to do to get the DNA. Yes! First it should be some introduction. Somebody need to acquire the basics first.''

Arranging the topics in relation to each other makes the knowledge more relevant in the different context. Knowledge will not be context specific or context dependence, instead the knowledge will be used to understand other topics. In this case, the learners are also helped to understand abstract concepts. Respondent 3 indicated that,

> ''We just have the course outline with the topics, the main topics that are in the syllabus, and then you as a lecturer now you have to divide because every term is 10 weeks, yah every term is 10weeks. So you have to divide those lectures within the 10 weeks. Because every term has 10 weeks and also we reserve one week at least for tests.'' (Respondent 3)

Similar views were said by the 9 respondents as they confirmed that, once the course outline is prepared, a copy is given to all the lecturers who are going to be teaching the course. When the course lecturers have received a copy of the course outline, the lecturer will write a teaching plan on how and the topics will be taught. The lecturers also decide on the activities to be done in class.

Besides arranging the topics in order, lecturers also decided how the topics were to be presented to the learners and the activities to be done in the teaching and learning of the BT 440 content.

Teaching approaches

The teaching approaches are the means through which the criteria are taught to the learners. Though a number of the methods were used by the lecturers, the analysis of the data revealed that, the most common teaching approaches used in teaching the BT 440 are the lecture method, discussion and the question and answer method. The respondents indicated that, when the course outline is given to the lecturers, the lecturers decided how they are to teach the course. In most cases lecturer used the lecture method in the teaching of the course. The lecturers indicated that they used the lecture method and the question and answer method, because their main objective is to finish teaching all the topics in the course outline. This could be achieved if the lecture method and the question and answer method were used in the teaching.

The 10 respondents indicated that they use lecture method because the main focus was to finish teaching all the topics in the course outline. Lecture method is a method in which the lecturer is in control of the activities in the classroom. In a lecture method the lecturer has the authority. The practice in this class is that the lecturer talks

while the learners are listening. Respondent 2 said that, ''the focus here is mainly on, what, completing your syllabus, so given the time that we have, and the topics that we have to teach, very difficult to have interactions.'' The lecture method allows the lecturer to cover more work in the 2hours teaching time. Though the focus was to finish the syllabus, lecturers also indicated that they also used discussions and presentations in teaching. Respondent 4 notes that,

> ''I use.., lots of, not completely lecture method. I use a mix of lecture and interact with the students during the classes. So its not completely lecture method. A type of discussion also goes on in the class. That's my way of teaching. Not completely lecture methods.''

Though lecture method is mostly used in teaching, it is not the only method used. Other methods such as discussion, question and answer are also used in teaching. Though a number of the teaching approaches were used in teaching Biotechnology, the most used method is the lecture method.

The lecturers who are knowledgeable in the course decide how the topics will be taught and how the assessments will be done in the course. The lecturers also decide on the activities to be done during the teaching of the BT 440 knowledge. In this case, the selection of knowledge is strongly framed and sequencing of the knowledge are strongly framed (F+).

Pacing of knowledge category

Pacing was analysed in terms of who decided on the time needed for the learners to acquire the criteria. The analysis of the data indicated that, as the course is developed, time to be taken to teach a topic is not indicated in a course outline. All the 10 respondents indicated that how long one should take to teach a course is decided by the course designers as they develop a course or a curriculum.
Respondent 3 also notes that,

> ''students usually get confused if you put too much information at once. So, you just cover, depending, there are certain topics which are long so you can divide them, there are certain topics they are short, so it depends upto the lecturer, to say, I think this topic is very long so you divide it into sections, sub-sections. Then you teach according to the sub-sections until you finish that topic. But there are others which a topic is short which you can finish within one lecture.''

The lecturers decide how long one should take to teach a topic. Some topics need more time while some topics need less time. The findings have shown that pacing of the knowledge to be transmitted and acquired in the 2hours (actually 4 hours/week) lecture is done by the lecturer. The course outline only indicates the lectures to be done per week. The plant biotechnology course outline does not indicate how many lectures are to be done.

Therefore, in terms of pacing, framing is strong (F+). The lecturer decided on the time to take to teach the course and on the activities to be done during the teaching and learning. There was no indication in the data that learners-controlled pacing of the teaching and learning. Learners have little control in the learning time to be taken.

Relations between discourses
The relations between categories determine the strength of insulation between the discourses. Bernstein used the classification concept to analyse the relations between categories. The analysis of the discourses has shown that, in bio-technology there is a strong relationship between the disciplines was evident in the responses below. Respondent 1 indicated that biotechnology,

> "actually, incorporates most of the courses. For instance, Bioinformatics, learners have to know how to work with the computer. They have to come up with some software that would manipulate DNA. Yes. I think it does incorporate other courses"

Respondent 2 also notes that,

> ''biotechnology is a combination, of microbiology, combination of genetics, combination of chemistry, even combination of engineering principle, principles. So, chemistry, microbiology hmmmmm, engineering and a bit of even physics, because now there is optics in biotechnology.''

There is a strong relationship between the disciplines in terms of inter-disciplines. In this case classification is weak in the inter-disciplinary relation.

The analysis also revealed that there is a relationship between biotechnology knowledge and the everyday knowledge which Bernstein has called inter-discursive relation. For instance, respondent 2 notes that,

> ''Biotechnology now is a field for anybody. Because now in industry, so we have chemical engineers, we have just physical or civil engineers in it, we have mathematicians in it, we have chemistry in it, physists in biotech. So, in countries where people know how to join forces. These people with different what, disciplines come together. You get it. But for them to understand, each one of them must have at least a foundational understanding of the co-principles of biotechnology.''

Respondent 3 adds that, '' Biotechnology is a cross cutting field.''

This indicates a strong relationship between the academic knowledge and the non-academic knowledge (Inter-discursive relation). Therefore, classification is weak (C-) in terms of the inter-discursive relation.

Respondents further indicated that,

> We have basics first. One needs to acquire some knowledge. Biotechnology is more practical than theoretical. Though if you just get to say DNA extraction or probably insertion of the new gene in a particular DNA. Somebody must have acquired some knowledge about the DNA. Where it is found, what is the person supposed to do to get the DNA. Yes! First it should be some introduction. Somebody need to acquire the basics first. '' (Respondent 1)

Respondent 1 further indicated that, ''Biotechnology it's a cumulative.''

Therefore, there is a relationship between the topics taught in biotechnology. This was also evident in the sequencing category. Therefore, classification is weak (C-) in terms of intra-disciplinary relationship.

Regulative discourse

The regulative discourses are concerned with the hierarchical rules of the pedagogical discourse. The analysis also revealed that lecturers were also concerned with the way learners behaved in class. Respondents indicated that,

> ''as a lecturer, before you start, you demand attention from students. There are times when you come like me I use beamer, I am connecting this and that I found students talking to each other, then you are hearing to ma noise, here and there, you know, people they are talking. So, before you start you just say, attention everybody or you just greet them greet them good morning! So, you find once they answer good morning. And all of the sudden all of them pay attention to you because they want to listen. As you continue if you observe that some students are not paying attention they are doing something or someone is sleeping, sometimes I just call that student, hello there! What do you think about this? I ask that student who was sleeping. And then all of the sudden you just see them pay attention. Ooh so he has seen me. But if there are people talking you just stop in front and then you ask the people that are talking, what are you talking about? Can you tell everybody, we want you now to speak loud so that everybody can hear? So that is basically what is done.'' (Respondent 3)

Respondent 1 adds that,

> ''If the students have missed the assessment test, we will get the advice from our head of department and then the dean of schools. According to their suggestions and the university guide, we will follow the next level. That means we will conduct a re-test if it is reasonable. They have to produce a valid reasonable reason or medical reason of what purpose they have not attended the continuous assessment test or any other test. What is the reason? Why they have not attended the particular test? Then they will have to give the return statement if at all it is valid. Then we can proceed for the next step. The next step means we can be able to conduct the re-test and then go for the remarking. Once we are done with the marking of the particular students, and then, we will enter the results on the portals.''

Respondent 3 adds that, ''If the reasons are not there, it's a zero.''

Hence in terms of the regulative discourse, the lecturer was in control this indicate a strong (F+) framing.

Instructional discourse

The instructional discourse emerged as the main theme in the analysis. As earlier indicated, the instructional discourse is concerned with the discursive rules (selection, sequencing, pacing and evaluation criteria) and the

relations between the discourses (inter-discipline, intra-discipline, inter-discursive) of the pedagogic discourse. This therefore indicates that, the developing of the BT 440 course is more focused on the instructional discourse. In summary, the analysis of the interview data has revealed that the control relations (framing) between the agents in terms of hierarchical rules, knowledge selection, sequencing, pacing and the evaluation criteria were all strongly framed (F+). In terms of the relations between discourses, the classification was weak (C-) in the inter-disciplinary, intra-disciplinary and in the inter-discursive relations.

8. Discussion

The findings on the analysis of the data indicated that, the development of the BT 440 course is a very consultative process which is characterised with strong framing (F+) in the hierarchical, selection, sequencing, pacing, and evaluation criteria of the knowledge. A strong framing in the selection of knowledge imply that the knowledge which was included in the BT440 course was selected by the lecturers. The students did not contribute in any way on the content knowledge included in the course. The knowledge was selected from a number of different sources. Bernstein calls the sites from which knowledge was extracted as the production field in which the disciplinary discourse is produced by the experts. In chapter 3, the literature has shown that the knowledge produced in the production field is strongly classified and that Bernstein calls this knowledge as the singulars. Recontextualisation is a process done by the officers in the recontextualisation field. Once the knowledge has been produced, the agents in the recontextualisation field start selecting the knowledge and organising it in the manner in which it will be taught.

In education, recontextualisation leads to the production of a pedagogic discourse. In this case the recontextualisation work was done mainly by the lecturers. The learners only come to see the course outline in class that is in the reproduction field of the pedagogic device. Since the lecturers are the ones involved in the sequencing of the topics, the lecturers also decided on acquisition time in the learning of the topic. Therefore, the lecturers who are knowledgeable on what was to be taught were involved in the pedagogic discourse that is in the development of the course or the curriculum. In the case of biotechnology, Bernstein describe it as the formation of a 'region' in which the knowledge is weakly classified (Ensor, 2004; Reeves, 2006; Firth, 2011).

During the developing process of the BT 440 course, the lecturers also had to organise the topics in relation to each other that is sequencing of the knowledge. Bernstein call this arrangement as a hierarchical organisation of the knowledge. It therefore makes sense that the lecturers who are knowledgeable with the content included in the course are the ones involved in the sequencing of the topics in the course. In the development of a course, the lecturer also decided on the acquisition time in the learning of the topic, that is the time learners are expected to learn the content of the course. A strong framing in the evaluation criteria meant that the lecturer indicated explicitly what the learners are expected to learn in the BT 440 course. These findings were similar to a number of studies carried by other scholars (Deng, 2009).

A number of studies (Ensor, 2015; Larsen, 2013; Bertram, 2008; Hoadley, 2005b; Morais et al., 1992; Morais et al., 2005) have indicated that, for a successful learning of all the learners in class, a weak framing in the pacing and hierarchical rules are necessary conditions. 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. Studied have also indicated that, a school code has a middle-class assumption, hence it gives learners from a middle class background to easily acquire the school code as compared to the children with from the poor and marginalised background. It is therefore urgent that a middles class assumption indicated in the school code be interrupted with the use of mixed pedagogic practices in class which is characterised with both weak and strong framing in the hierarchical rules, selection, sequencing, pacing and the evaluation criteria. It is important that the lecturers teaching the course are aware of the characteristics of the pedagogic discourse to be implemented in class.

9. Conclusion

From the analysis done, it is evident that, framing was strong (F+) in the hierarchical rules, knowledge selection, sequencing, pacing and the evaluation criteria were all strongly framed (F+). The findings indicate that the control

was on the academic staff. While the relations between discourses, the classification was weak (C-) in the inter-disciplinary, intra-disciplinary and in the inter-discursive relations, indicating a relationship in knowledge.

Acknowledgments

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Survey on Ecological Ethics Status of Vietnamese Students of Economic and Business Administration Sector in the Current Period

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Abstract
The ecological ethics of students today is not a new issue but has always been of concern, especially during the explosive development of information technology. This study provides information on the ecological ethics situation, the contents, methods, and forms of surveying the ecological ethics status of Vietnamese students in economics and business administration. Through the study, the ecological ethics status of Vietnamese students majoring in economics and business administration has been shown on the following issues: (1) Perception, (2) Consciousness, (3) Standards, and (4) Eco-ethical behavior, thereby proposing some solutions to improve ecological ethics for Vietnamese students in the field of economics and business administration in the current context.

Keywords: Ecological Ethics, Economics, Business Administration, Vietnamese Students, Status

1. Introduction

The structure of ecological ethics is the fusion of environmental consciousness and ecological ethics behavior. Both of these parts have a close relationship, influence, and complement each other to form the moral system in society. Meanwhile, previous studies on this issue have shown that students in different regions, areas, and training disciplines have different levels of ecological ethics. In the current situation, it is necessary to promote students' social responsibility towards nature; in particular, students need to be *able to identify the benefits or harms of their activities* in the process of affecting the heart. To do this, we need to build a new ecological ethics system - one that takes into account the harmony between the interests of the subject (business) and the object (nature), that is, should not know only the use and pragmatic values of natural things, but also respect, preserve and protect the intrinsic values of elements in the natural environment. To improve students' ecological ethics, we need to take many measures in which ecological ethics education for students has both short-term and long-term benefits, and

so this is considered a has the most significant, profound, and lasting effect. Eco-ethical education promotes behavior changes, helps people make decisions, and participates in environmental protection voluntarily and actively. We can conduct eco-ethical education at many levels of education and for all subjects. Still, eco-ethical education in universities occupies a special place, where the young generation is trained, future owners of the country.

Currently, Vietnam has more than 2.2 million full-time students with about 500 universities and colleges, accounting for a large part of the population structure of our country. The Universities of Economics and Business Administration make up a large proportion of the country's universities, especially the schools specializing in Training in economics and business administration have a large number of full-time students. Such as National Economics University, Trade University, Academy of Finance, Banking Academy, Foreign Trade University, University of Economics Ho Chi Minh City, University of Economics Da Nang, University of Vinh... Those are the leading training institutions in economics and business administration that attract many regular students, not to mention students in the work-study program, distance learning system, and graduate students. Ph.D. students, every year, about 6,000 bachelors graduate from the university working in economic management, human resource management, banking and finance, commerce, financial law, marketing, accounting, auditing, statistics, insurance, resource management, urban environment... Therefore, besides professional qualifications and ethical qualities in general, ecological ethics, in particular, is one of the criteria to assess the capacity of students upon graduation, joining human resources for national development and international integration to meet the requirements of sustainable development. But the students' ecological ethics status is a burning issue in universities. The current situation of severe environmental degradation is because each student and each of our universities are not adequately aware of the importance of ecological ethics, the problem of protecting and preserving the environment, and have not turned their awareness and responsibility for environmental protection into specific actions; The balance between economic development and environmental protection has not yet been ensured.

There have been many research works in this field in Vietnam and abroad. Jennifer A.Wade (1999) Analyzed, the United Nations has encouraged young people to be responsible for the environment to ensure the long-term health of the typical home - the earth. UK government policy has also recognized the importance of effective environmental education, and education is seen as a positive force for changing ecological perceptions. The author mentioned that if hotel management students could perceive the fundamental importance of environmental issues, they could have become influential changers of the problems. If hospitality management education could have given students the skills and motivation to be proactive with the environment, they would have been effective agents of change and ensured the hospitality industry operates with a sustainable vision. A survey of seniors showed that students were very interested in this issue. Combining effective teaching and learning strategies resulted in a majority having a personal commitment to the subject with environmental responsibility. If students had been exposed to examples of best practices underpinned by knowledge, the ecological agenda would not have been ignored when they became influential managers or entrepreneurs. The environmental education program should be well planned so that students acquire the knowledge and skills necessary to become effective environmental stewards.

The author - Li Xia (2009) They have analyzed the meaning of innovation in innovation by discussing the meaning of innovation, the meaning of innovation, and the content of innovation. Then, the author emphasized that the current revolutionary education in China has difficulties in three aspects, lacking the idea of systematic education, lacking the concept of universal education, and defaulting to the idea of comprehensive education. People should solve these problems by following the law of moral socialization.

Author 张彭松- Zhang Peng-song (2014), in the article "Environmental Ethics Education: Ecological Instruction and Practical Exploration." They emphasized that environmental ethics education for university students is an objective requirement to solve—environmental issues in China, conducive to the vast improvement of the comprehensive quality of university students. The author uses traditional knowledge-based teaching methods to teach ecological ethics in colleges and universities. As a branch of applied ethics, environmental ethics is a new kind of ethical thought compared to theoretical ethics. It expands the moral worldview from man to man and nature

so that man can accept character morality. The author determines that environmental ethics education should go beyond knowledge teaching methods, paying attention to practical ecological teaching methods. The aim is to enable the educated person to establish correct environmental ethics, master a wide range of knowledge and skills to protect the environment, and form good behavioral habits. Current environmental ethics education mainly focuses on transferring knowledge and skills to protect the environment but ignores emotional and experiential education on environmental attitudes, environmental responsibility, and ecological ethics.

Two authors 王晓艳 - Wang Xiaoyan, 翁善波 - Weng Shanbo (China) with the article "Ecological Ethics Education" (2015) have affirmed that today, the advancement of science and technology has brought conveniences, great benefits, and achievements for humanity. Still, at the same time, major ecological and environmental problems are also becoming more and more serious. Faced with the issue of resource limitation, severe environmental pollution, and ecosystem degradation, we must adhere to nature, respect, and protect wildlife from awakening people's ecological consciousness and sublimating their ecological sense. Environmental protection should be oriented through education. As the main force of future nation-building, university students need to be educated in eco-ethical knowledge, help build a civilized society, improve comprehensive quality, and enrich political and ideological education content. Colleges should develop curriculum theory, improve classroom teaching, build faculty, strengthen ecological culture construction, and implement environmental practice and legal education.

Authors Żeber-Dzikowska Ilona, Chmielewski Jarosław, and Wojciechowska Mariola (2016) in the article "Ecological and environmental education in the ethical context," present an important aspect related to ecological and environmental education in the context of complex ethical issues. Thereby it makes readers aware of the critical role of service education when it is connected with environment-friendly education and innovation, aiming to determine people's attitudes toward nature. They emphasize the importance of innovation for society to function correctly. We should take care of nature, treat it like a family member with love and kindness, and then we can be sure that it will not surprise us with surprises. We should take care of everything that nature has, that is, plants, animals, water, soil, and air because when we take care of all these aspects, we also care for ourselves and all society.

Author Levchenko, Natalia (2017), in the article "Ecological education in Russian universities: civil activism in formal education." analyze the ecological teaching process in technical universities in the Russian Federation. The data obtained is the result of a study conducted in 2014 - 2017, using in-depth interviews with university administrators and lecturers. The article shows how the liquidation of the subject "Ecology" from the school program affects the participants' preparation level. The reasons for changing societal attitudes towards environmental issues in the early 2000s and the decline of interest in ecology were examined. Thereby analyzing whether there is a process of forming an environment-oriented perspective among university students. The role of lecturers in teaching subjects related to environmental protection and ecological culture development is demonstrated.

Ecological ethics education has yet to be paid attention to by all levels and sectors. This concept is reflected in jobs such as Ethical and environmental education for crucial staff by author Le Binh (2005); Summary Report on Environmental ethics education for junior high school students, code B2006 - 37-30 by Duong Quang Ngoc (2009). In general, the authors argued that:
Firstly, the Party and State have promulgated viewpoints and leadership lines and built and perfected the legal system to protect natural resources and the environment, thereby orienting ecological awareness and a sense of ethics.
Secondly, the education of ecological ethics in our country needs to be paid more attention to, not on par with the requirements and requirements of the education and training career.
Thirdly, Vietnam has yet to develop a separate educational program on ecological ethics; ecological ethics education has only been integrated into several subjects.

1.2. Research projects on ecological ethics education for students in Vietnam today

In the works: Summary report on the topic Environmental ethics education for junior high school students, code B2006-37-30 by Duong Quang Ngoc (2009); Environmental education through geography by authors Nguyen Phi Hanh, Nguyen Thi Thu Hang (2004); Eco-ethics and ecological ethics education for critical officials at the district level in the northern provinces of our country today by Vu Trong Dung (2004); Ethical ethics education and building a cultural environment in the schedule of the 21st century by Do Huy (2007), in general, the authors believe that: There are many methods of building ecological ethics, including three basic techniques, which are ecological ethics education in the family, school, and society; Law in the role of building ecological ethics; Cultural lifestyle in the part of building ecological ethics. Ecological ethics education plays a decisive role in building ecological ethics.

Firstly, educating ecological ethics in families, schools, and society about the necessity of environmental ethics education.

In recent years, we need to pay more attention to eco-ethical education for subjective and objective reasons, even considering it unimportant. It is necessary to pay attention to students to achieve the goal of ecological ethics education.

It is necessary to pay attention to eco-ethical education for the sustainable development of humans and the natural world" (Phan 2006). Secondary school students are the subjects who need to pay attention to ecological ethics education. Because people are unaware of the importance of environmental resources for life and do not have the correct behavior toward the environment, education in this period is decisive for personality formation. Ecological ethics education will exist with the children throughout their lives (Ngoc 2009).

About the content of ecological ethics education
In the current works on *Ecological ethics and ecological ethics education for critical officials at the district level in the northern provinces of our country*, the author Vu Trong Dung (2004) (2004), *Eco-ethical education and building a cultural environment in the schedule of the 21st century* by author Do Huy (2007) have the same common assumptions: The content of ecological ethics education in the period to form and educate innovation standards; Implementing innovative behavior is the fulfillment of human obligations and responsibilities towards the environment; thereby combating and criticizing ecologically unethical acts.

There are many solutions to improve ecological ethics in Vietnam in the current period, in which the author has focused on three main groups of solutions: 1- strengthening the role of law in building ecological ethics, 2- further supporting the education of environmental ethics, 3- to create a cultural environment and a cultural lifestyle. Ecological ethics education is critical in building an artistic lifestyle, contributing to successful environmental ethics.

Building eco-ethics; it must be done through education on ecological ethics, considering this a regular, long-term, and inevitable task. Therefore, it is necessary to cooperate with the whole political system by setting out the content of educational methods suitable for each object. Works: *Ecological - humanistic culture (Environmental education)* by Tran Le Bao (editor, 2005); author Pham Van Bong (2001) with the article *Building ecological consciousness - a guarantee for sustainable development*; Vu Dung (2011) with the project *Environmental ethics in our country - theory and practice*; Phan Thi Hong Duyen (2011) with the project *The problem of ecological ethics education for Vietnamese students today*; Nguyen Van Phuc (2013) with the work of *Environmental Ethics*; Master's thesis on *Environmental Education Environmental protection education for students at Dong Thap Pedagogical University* (2013) by Le Hieu Duong; Master's thesis Philosophy *The issue of ecological ethics education for students in universities and colleges in Hung Yen in the current period* (2013) by Nguyen Cong Cuong; Master thesis of Philosophy of *Environmental Ethical Education for students of the Central College of Natural Resources and Environment* (2014) by Mai Thi Thu Hang; the article *"Strengthening environmental ethics education for students"* by Nguyen Thi Tho (2014); The article *"Environmental education in North Central pedagogical schools"* by Dr. Bui Van Dung (2014); the article *"Ethical ethics education - solutions to overcome the degradation of natural resources in Vietnam"* by Nguyen Thanh Thuy (2015); the essay *"Students study and*

follow Ho Chi Minh's moral example on environmental protection" by Hoang Thi Ngoc Minh (2016); The article *"Improving the effectiveness of ecological ethics education for the young generation of our country today"* (2016) by the group of authors Pham Minh Ai - Nguyen Thi Thuy Huong.

2. Research Methods

2.1. Proposed research model

After referring to the above theories and viewpoints on ecological ethics, the Research Overview section, and in-depth interviews, the authors discussed and decided to build a research model based on the reference and edited from research by Pham Thi Ngoc Tram et al.
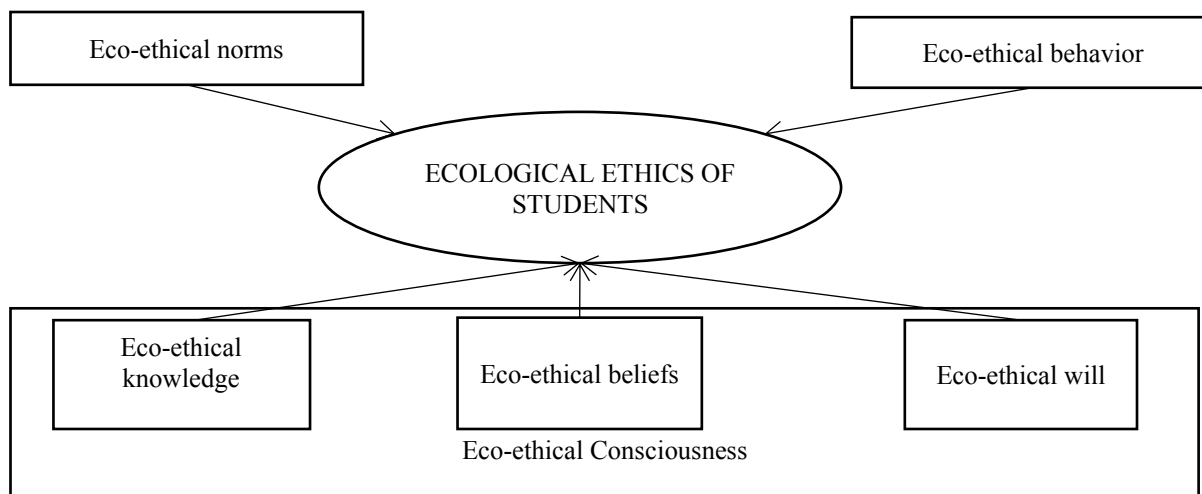
Figure 2.1: Research model proposed by the team

2.1.1. Scale design

The study used mainly a Likert scale from 1 (strongly disagree) to 5 (strongly agree) and from 1 (never) to 5 (very often). The Likert scale is about 5 to 7 levels commonly used in research to describe people's attitudes toward social science behavior. Regarding the results, questions with multi-level answers, such as Likert, help the research team get the most detailed feedback possible, minimizing depression for survey participants.

In the above section, the research team has introduced the concepts of observed variables studied: Eco-ethical Consciousness (Knowledge of ecological ethics) (H1), Eco-ethical Consciousness (Belief in Ecological ethics) (H2), Eco-ethical Consciousness (Ecological ethics policy) (H3), Eco-ethical logical ethics standards (H4), Eco-ethical behavior (H5), ecological ethics of students (N).

We need to collect some personal information and the student's need for information on biodiversity and the eco-ethical evaluation scales as in the table below.

Table 2.1: Preliminary scale

Observed variables	Content
Eco-Ethical Consciousness (Knowledge)	
H1-1	Humans should live in harmony with nature
H1-2	Humans cannot live in isolation from nature
H1-3	Nature does not need to serve humans
H1-4	You find your ecological knowledge is not enough and want to learn more
H2-1	Individuals can contribute to protecting the ecological environment
H2-2	Your family can contribute to protecting the ecological environment
H2-3	People around you can contribute to protecting the ecological environment

H2-4	Government can contribute to protecting the ecological environment
H2-5	Non-governmental organizations can contribute to protect the ecological environment.
H3-1	Protecting the ecological environment is the responsibility of individuals
H3-2	Environmental protection is the responsibility of family and society
H3-3	Environmental protection of the government's responsibility
H3-4	Environmental protection is the responsibility of NGOs
Ecological, ethical standards	
H4-1	Attitude to actions that negatively affect the environment (wasting resources, ...): Firmly oppose
H4-2	Attitude to actions that negatively affect the environment (wasting resources, …): Following the majority opinion
H4-3	Attitude to actions that negatively affect the environment (wasting resources, ...): Respect the leader's decision (Government, ...)
H4-4	Attitudes to negative actions affecting the environment (wasting resources, ...): Persuading but not then giving up
H4-5	Attitude to actions that negatively affect the environment (wasting resources, …): I do not care; I do not waste.
H4-6	Attitude to actions that negatively affect the environment (wasting resources, …): Ignore them because I am also wasting
H4-7	You comply with the regulations on environmental protection
H4-8	Do you oppose the use of products made from rare animals?
H5-1	You participate in cleaning up garbage that is left indiscriminately in the places where you live and travel.
H5-2	You limit the use of environmentally harmful products
H5-3	You choose to use environmentally friendly products (within your means).
H5-4	You remind your friends when you see yourself littering
H5-5	You save resources (electricity, water, ..)
H5-6	You reduce plastic waste
H5-7	You propagate environmental protection knowledge to your family
H5-8	You put garbage in the right place
N1-1	People need to change their current living habits to improve the ecological environment.
N1-2	Today's environmental problems cannot be ignored
N1-3	Buy products at 20% more if it helps to save the environment

2.1.2. Sampling method

The preliminary survey was conducted on a narrow scale in Hanoi to complete the questionnaire and avoid errors and misunderstandings in the process of answering the questionnaire. The research team provides five latent variables with 29 observed variables regarding the independent variables. The research team provided one latent variable with three observed variables regarding dependent variables. The research team adjusts spelling errors and expressions to avoid mistakes and misunderstandings in answering consumer votes. The survey form is presented in detail in the Appendix.

Overall, the research subjects are students majoring in economics and business administration at ten universities in the North of Vietnam. Include:

      National Economics University

      Hanoi University of Natural Resources and Environment

      Northwestern University

      University of Economics and Industry

      Vietnam Maritime University

      Banking Academy

      Foreign Trade University

      University of Economics - Vietnam National University, Hanoi

      College of Economics and Business Administration - Thai Nguyen University

      Financial institutions

The research team performed exploratory factor analysis (EFA) to quantify the correlation between observed variables and factors. According to Hair et al. (1998,111), choose an appropriate study sample size $N \geq 5*x$ (x: total

number of observed variables) equivalent to a minimum length of 50 or better, 100 or more. The ratio of observations to an analytic variable is 5:1, with the number of comments interpreted as the number of valid votes required. Therefore, according to this principle, the research group with 5 factors and 29 observed variables means the minimum sample size is N=29x5=145. This study had N=1000, so it was determined to have a reliable sample size.

Due to objective factors, the research team conducted a 100% quantitative study using an online survey. The number of votes collected after the initial official survey period was N=1059; however, after screening invalid votes, the group used 1000 votes to conduct the official analysis.

2.1.3. Methods of data collection and Analysis

The study was carried out with the data collection method by questionnaire with a sample size of 1000, an immediate investigation by electronic questionnaire.

To achieve the above sample results, we opened the questionnaire from //2021 to the end of //2021; the results were statistically analyzed via Excel. The questionnaire is completed directly by individuals within the research object; each quantitative question is measured on a Likert scale of 5 levels (strongly disagree, disagree, neutral, agree, strongly agree) and 1 (never) to 5 (very often). After finishing, the collected data was entered into SPSS 23 to filter and analyze the results.

The study uses Cronbach's Alpha as the most common test score reliability coefficient with single management. It eliminates variables with small-sum correlation coefficients, testing the preliminary scale by the EFA discovery factor.

2.1.4. Evaluation of Cronbach's Alpha reliability coefficient

This method removes unsuitable variables before EFA factor analysis because garbage variables can generate dummy factors (Nguyen et al. Mai Trang, 2009). is to remove the observed variables whose index does not meet the scale condition. Variables with a small total correlation coefficient (less than 0.3) will be eliminated, and the criterion for choosing the scale when it has more significant reliability Alpha (the more extensive the Alpha, the higher the intrinsically consistent confidence). (Nunally & Burnstein 1994; cited by (Nguyen et al. Mai Trang, 2009).

However, assessing the level of achievement of the reliability coefficient Alpha is: greater than 0.8 - a good measurement scale, 0.7-0.8 is a usable scale, from 0.6 or more is suitable. in case the theoretical research basis is new or new in the research context (Nunally, 1978; Peterson, 1994; Slater, 1995); cited by (Hoang et al. Mong Ngoc, 2005).

2.1.5. EFA. exploratory factor analysis

Besides Cronbach's Alpha coefficient, SPSS 23 software is also used in EFA exploratory factor analysis, KMO, and Bartlett test, allowing the research team to assess the relevance of EFA exploratory factor.

The authors conduct this analysis step to evaluate two essential scale values: concurrent value and discriminant value. The Exploratory Factor Analysis (EFA) method belongs to the group of interdependent multivariate analysis; there is no dependent or independent variable, but it relies on the correlation between the variables. EFA is used to reduce a set of k observations into a set of F (F < k) of more significant factors. This reduction is based on the linear relationship of factors with primitive variables (observed variables). Each observed variable will be assigned a ratio called the factor loading coefficient, which indicates to which element each variable belongs. According to Hair et al. (2006) then:
- The KMO coefficient (Kaiser - Meyer - Olkin) must reach a value of 0.5 or more ($0.5 \leq KMO \leq 1$), showing that the factor analysis is appropriate.

- Bartlett's test has statistical significance (Sig < 0.05), showing that observed variables are correlated with each other in the population.
- The condition for exploratory factor analysis is to satisfy the following requirements: Factor loading > 0.3, provided that the sample is more significant than 350 observations.
- Total Variance Explained reaches a value of 50% or more.
- Eigenvalue (representing the variation explained by each factor) > 1, then the extracted element has the best information summary significance. Multiple regression analysis: To test the regression model to assess the model's fit, identify the main factors affecting the research results in the order of more or less of each element, and analyze and explain the significance of the study.

2.2. Data check

2.2.1. Cronbach's Alpha reliability test

During the analysis of the results, 1000 questionnaires were processed using SPSS 23 software; the scales were preliminarily evaluated through Cronbach's Alpha coefficient test and the calculation of the total correlation coefficient. According to Nguyen Dinh Tho et al. (2009), this test checks the degree of the close correlation between the observed stations in the single-factor cf. Cronbach's Alpha test before the principal component EFA to eliminate inappropriate variables because these variables make the research results inaccurate.

The results of the reliability analysis of the scale of the independent and dependent factors are presented in Table 2.2. Initial official survey data includes 32 observed variables for 6 independent factors (29 observed variables) and 1 dependent variable (3 observed variables) after performing reliability analysis for all variables. The scale shows that 34 observed variables are reliable enough to carry out the next steps of research (only variables H4-3 = -0.11 and H5-8 = 0.238 less than 0.3 are not reliable enough. removed from the scale).

Table 2.2: The results of Cronbach's Alpha test of the scale

Symbol	Factor name	Alpha. coefficient
TT	Eco-Ethical Consciousness (Knowledge)	0.614
NT	Eco-Ethical Consciousness (Belief)	0.970
YC	Eco-Ethical Consciousness (Will)	0.899
CM	Eco-ethical standards	0.835
HV	Eco-ethical behavior	0.811
Ecological ethics	Dependent variable: Ecological ethics of students	0.616

Source: Compiled from analysis results on SPSS

2.2.2. EFA. exploratory factor analysis

The results of the first EFA analysis presented in Table 2 show that 27 observed variables are extracted into 5 factors, of which:

- KMO coefficient = 0.886 in the test for independent variables and KMO = 0.629 (Table 2.2) at the Sig level of significance (Bartlett test) = 0.000 < 0.5; this shows that the factor analysis is examined. Analysis of factors that are entirely relevant, reliable, and meaningful indicates that the observed variables are correlated with each other in the population.
- The analysis results (Table 3) also show that all factors have Eigenvalues > 1; the extracted variance is 61.594% > 50% is satisfactory. With the method of extraction and analysis of principal components and Varimax rotation, 5 factors were extracted from 27 observed variables; this shows that 5 extracted factors explained 61,594% of the variation of the variable depending on the observation/data population.

Table 2.3: EFA analysis results for the scale of independent and dependent variables

Variable name	Factor loading factor
Eco-Ethical Consciousness (Knowledge)	
H1-1	0.721
H1-2	0.709
H1-3	0.694
H1-4	0.576
Eco-Ethical Consciousness (Belief)	
H2-1	0.922
H2-2	0.933
H2-3	0.915
H2-4	0.920
H2-5	0.812
Eco-Ethical Consciousness (Will)	
H3-1	0.701
H3-2	0.761
H3-3	0.847
H3-4	0.836
Ecological Ethical Standards	
H4-1	0.663
H4-2	0.685
H4-4	0.775
H4-5	0.827
H4-6	0.783
H4-7	0.624
H4-8	0.607
Behaviors showing concern for the ecological environment	
H5-1	0.653
H5-2	0.764
H5-3	0.787
H5-4	0.708
H5-5	0.634
H5-6	0.538
H5-7	0.555
Dependent variable: Ecological ethics of students	
N1-1	0.789
N1-2	0.685
N1-3	0.788

Source: Compiled from analysis results on SPSS

Based on the table of research results, the conclusion is made: The observed variables have loading coefficients greater than 0.5 (Hair & Ctg, 2009), so they will be kept in the model.

Since then, the research team has identified 5 main factors related to students' ecological ethics that will be used in the analytical model instead of 5 latent variables like the original hypothetical model, such as: in the table above.

2.2.3. Regression analysis

The research team used SPSS software with 1000 valid questionnaires to analyze the linear regression of "Student's Eco-ethics" according to 5 independent variables, namely "Eco-ethical consciousness (Knowledge)," "Eco-ethical Consciousness (Belief)," "Eco-ethical Consciousness (Ethical Consciousness)," "Eco-ethical Standards," "Behaviours showing concern for the ecological environment."

The table in the Appendix shows that the adjusted R squared is 52.8%, which means that the research factors contribute 52.8% of the change of the dependent variable, so there is enough basis to confirm the effect of the independent variable on the dependent variable. The Durbin-Waston coefficient is 2.075 ($1 \leq 2.075 \leq 3$), so the model does not have autocorrelation.

Table 2.4: Regression model

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		REMOVE	Std. Error	Beta		
first	(Constant)	.489	.198		12,367	.000
	TT	.205	.046	.127	10,736	.007
	NT	.138	.036	.171	12,207	.001
	YC	.167	.051	.269	8,527	.008
	CM	.300	.034	.424	6.544	.005
	HV	.240	.039	.155	12.721	.000

Source: Compiled from analysis results on SPSS

Based on the above table of results, all variables TT, NT, YC, CM, and HV have sig test t less than 0.05, so these variables are statistically significant, and all variables in the model with all shapes affect the dependent variable of Crescent.

Linear Regression:
$$\widehat{DDST} = 0.489 + 0.205*TT + 0.138*NT + 0.167*YC + 0.300*CM + 0.240*HV + \varepsilon$$

According to the Beta coefficient and sig coefficient of the above table, we see that the variable that has the most impact on students' ecological ethics is "Eco-ethical Standards," with a beta coefficient of 0.300; ranked second is the variable "Behavior shows concern for the ecological environment" (beta = 0.240), third is "Knowledge" (Beta coefficient is 0.205), followed by "Will" with Beta coefficient = 0.167 and the last is "Belief" (beta coefficient = 0.138).

2.3. The ecological ethics status of Vietnamese students majoring in Economics and Business Administration

Eco-ethical consciousness includes the following factors: knowledge, emotion, belief, and eco-ethical will.

About eco-ethical knowledge: The survey results show that most students have the correct eco-ethical knowledge. This is reflected in the student's awareness of the role of the ecological environment in human life, the relationship between humans and the natural world, and the impacts of humans on nature.

Up to 86% of the students surveyed said the ecological environment is critical to human life. Humans must live in harmony with nature. Correct perception is the prerequisite for forming the proper behavior. With a clear

awareness of the importance of the ecological environment, most students also have an accurate perception of the relationship between humans and the natural world.

According to the survey results, most students acquire ecological knowledge through primary sources such as the subjects in the university curriculum (78.5%), television, the internet, and social networks (89.2%), books, newspapers (outside the issue) (66%). In addition, there are other sources such as family and friends (49.8%), propaganda activities of the Youth Union (38%), and other sources (27.1%). Most students felt their ecological knowledge needed improvement and wanted to learn more (74%). Although ecological knowledge is accessed from many different sources, more is required, and the need for ecological knowledge is a practical requirement of students. Students have a relatively high demand for ecological knowledge. Therefore, it is necessary to include the content of ecological knowledge and ecological ethics education in universities.
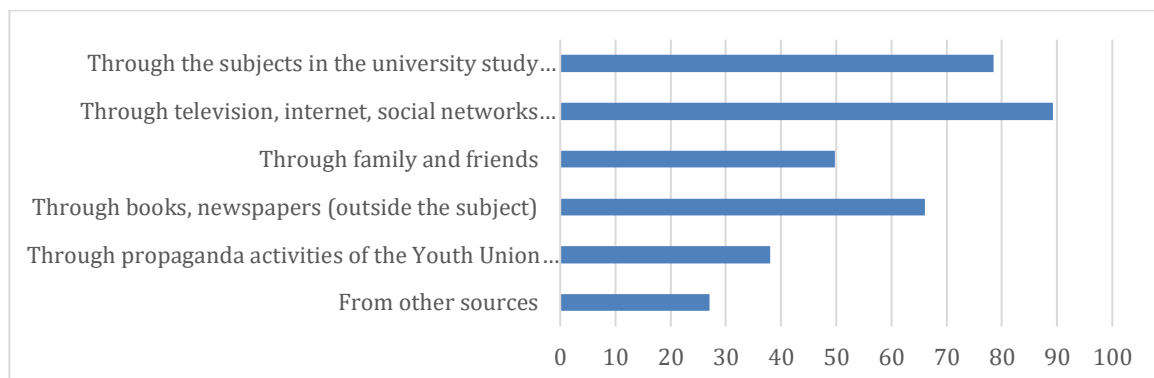

Chart 2.1: Sources of Income for Students' ecological knowledge
Source: Author's group compiled according to survey results

About eco-ethical beliefs*:* Conclusion The survey results show that the majority of students have an idea that their actions will help protect the environment, this belief is really "strong" when 45.1% agree, and 46.8 % agree with the view that "students themselves will be able to contribute to environmental protection." At the same time, students also believe that family, community, NGOs, and government will be essential contributors to protecting the environment. In it, self-belief is expressed at the highest level.

Table 2.5: Survey Results of Students' Ecological, ethical beliefs
Who can contribute to environmental protection?

	Totally disagree	Disagree	No idea	Agree	Totally agree
Myself	5.0	0.1	2.1	46.8	45.1
My family	4.7	0	3.0	48.3	43.5
People in the area where I live	4.6	0	3.6	47.0	44.1
Government	4.9	0	3.2	44.4	46.8
Non-governmental organizations	5.4	2.3	6.0	41.1	44.9

While most students believe their actions will help protect the natural environment, a few do not believe in themselves, the community, and society. A small percentage (less than 5%) do not express their eco-ethical belief about themselves, the community, and culture, and a part fluctuates (less than 6%) when not expressing personal views.

The change of an entire community, a country, or the whole of humanity begins with the evolution of each individual. Students' beliefs about participating in their actions to protect the natural environment will create a ripple effect, creating a broader instability, not only within the school campus.

About the eco-ethical will: The eco-ethical intention is the factor that helps students overcome all difficulties and is determined to fight and prevent activities that harm the ecological environment.

According to the survey results, over 90% of students agree or completely agree that protecting the ecological environment is the responsibility of themselves, individuals, their families, and the whole society, not just the government or non-governmental organizations. However, besides the majority of students who have the right innovation will, there is still a small number of students whose perceptions could be more accurate. Some students still think that they and their families cannot contribute anything to protecting the environment (5%) and that they are not responsible for severe ecological problems (4.5%). Many students know that environmental protection is necessary but consider it a macro-level job, a task of the government and large organizations. They need to realize that significant change must start with small actions.
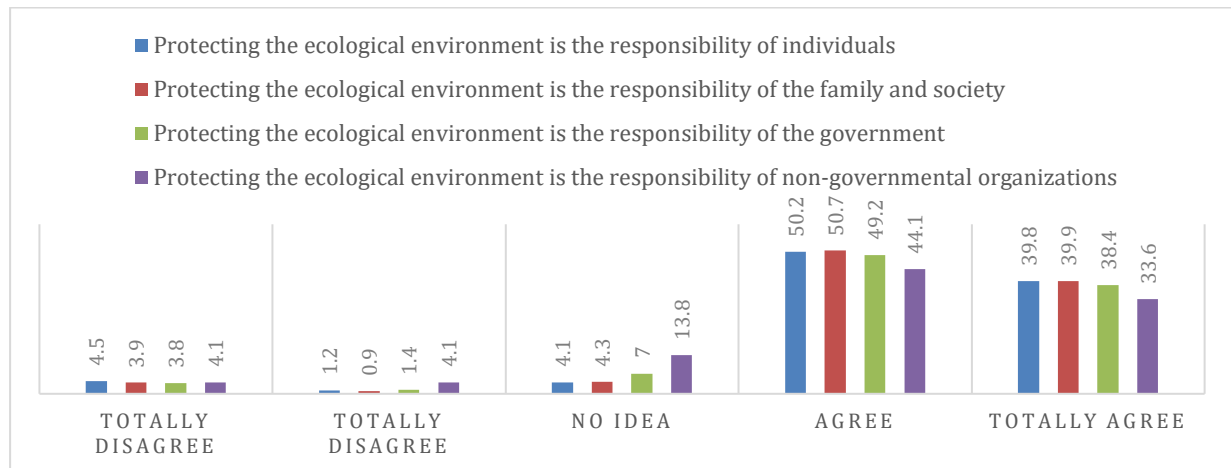

Chart 2.2: Survey Results on the Ecological, ethical will of Students
*Source: Author's group compiled according to survey results*

2.3.1. Status of ecological ethical standards

The eco-ethical standards represent a measure of the eco-ethical behavior of each individual. For students, it is reflected in fundamental issues such as: saving in the use of resources, respecting and protecting biodiversity, and actively propagating environmental protection.

When asked, "For projects that harm the ecological environment, what would your attitude be?", 69.3% of students expressed the determination to "resolutely oppose." The majority of students also said their personal opinions clearly when they did not choose to "follow the majority opinion" (11.7% of students answered completely disagree, 34.2% of students replied that they disagreed with "follow the majority opinion" majority opinion").

At the same time, the eco-ethical standards also require the implementation of all objects. They are reflected in the individual's sense of reminding and persuading others in the community to follow eco-ethical standards. According to the survey results, when asked, "When you see other people wasting resources, you will?" the percentage of students choosing to agree or completely agree with the view "persuade until the person changes, if not, prevent such behavior" is relatively high (78.7%); the percentage of students choosing not to agree or completely disagree with the point of view "persuading but not working" also accounted for 46.2%. Students have adequately recognized Eco-ethical standards and are considered a daily must-do.

Table 2.3: Survey results on ecological, ethical standards of students

When you see others wasting resources, you:

Legend: ■ Totally disagree   ■ DisagreeNo idea   ■ No idea   ■ Agree   ■ Totally agree
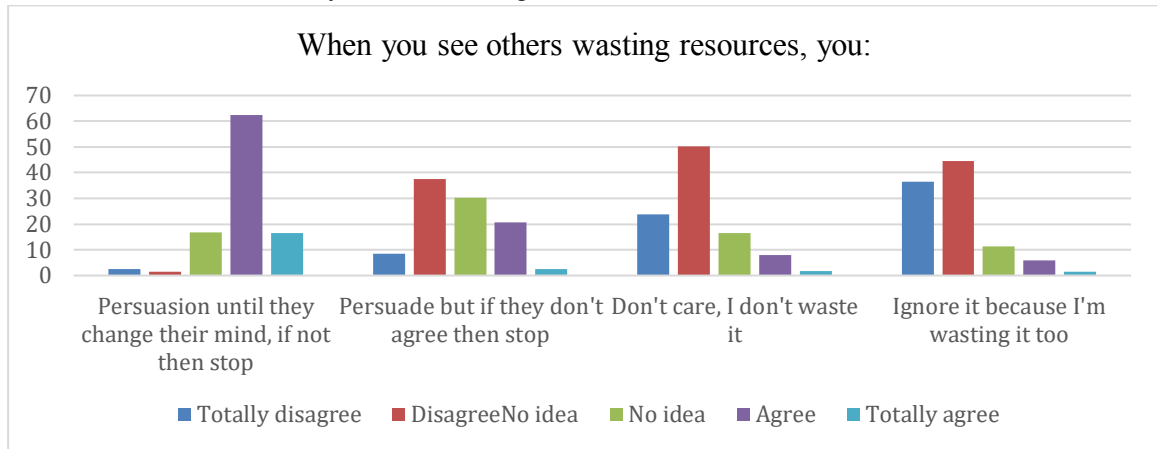
Source: Author's team compiled from survey results

However, from the survey results, it can also be seen that there is still a part of students who have not shown their determination in ensuring innovation standards are implemented in life when still more than 20% Agree or agree with the point of view "Persuasion but not," and up to 30% of students did not give an opinion on this point of view.

Most students also complied with regulations on environmental protection, accounting for 90.4%. Students also have a sense of "going green" when protesting against the use of products from rare and precious animals and plants, although the rate is not high, only 76.3%; at the same time, still, 21% did not clearly express their personal views on this issue. Using products from rare animals and plants (such as rhino horn, bear bile, red coral, etc.) in some places and individuals are considered normal. This status is an act worthy of condemnation. Young people need to be more aware of the dangers of widespread use of these products.

Students have initially recognized the basic standards of ecological ethics; it is necessary to continue to improve the standards and help students understand from there to practice eco-ethical behavior.

2.3.2. Status of eco-ethical behavior

Eco-ethical behavior is manifested in particular and daily life issues such as throwing garbage in the right place or strictly observing regulations on environmental protection. Most students had the correct behavior and perfect self-awareness about their behavior.

The survey results show that most students are self-conscious about participating in garbage cleaning at their residence (60.3%), the number of which needs to be consciously accounted for only a tiny part (5.2%). The students also changed their daily lifestyle when purposely limiting the use of products that are harmful to the environment (61.5%) and regularly choosing to use eco-friendly products (71.9%). Although students were aware of eco-ethical behaviors, the frequency of students' practice of eco-ethical behavior was not high, when about one-third of the students surveyed answered that implementing eco-ethical behaviors is only "occasionally."

Table 2.4: Survey Results on Ecological, ethical behavior of Students
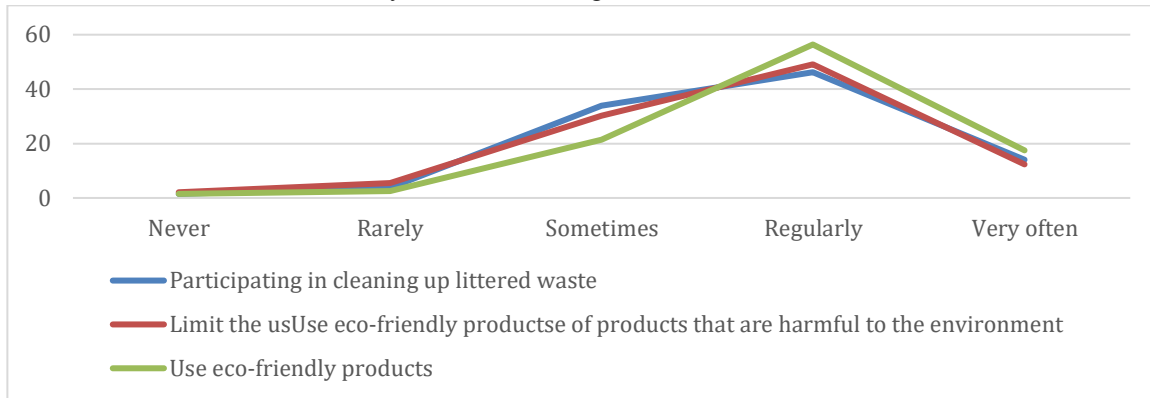
Source: Author's team compiled from survey results

The survey results showed that the students also actively cleaned up the garbage left indiscriminately in the places where they lived, studied, and even traveled. These actions are all voluntary actions stemming from the individual's awareness and needs; it shows young people's responsibility for their own lives and the future of humanity. In daily life, the behavior of biodiversity is also clearly demonstrated in saving resources (such as electricity, water...), limiting plastic waste, or opposing the use of products from animals and rare plants.

Table 2.5: Survey Results on Ecological, ethical behavior of Students
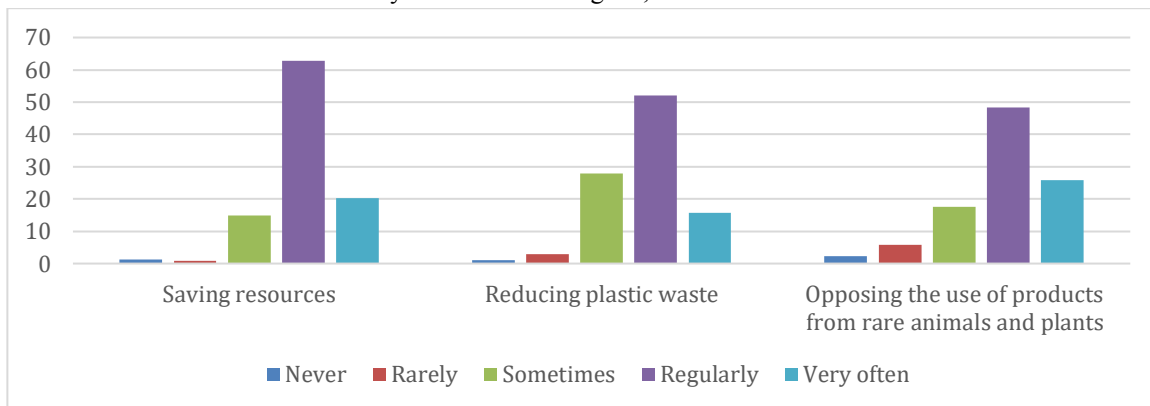
Source: Author's team compiled from survey results

They automated their behavior, and the students proactively reminded them to correct their friends' misbehavior. 74.7% confirmed that they regularly remind their friends when they see them throwing garbage in the wrong place. These seemingly small actions will gradually create a substantial spillover to change an entire generation's behavior.

The students also actively participated in environmental protection propaganda activities organized by the Youth Union and the Student Union of the schools or participated in the programs of non-profit organizations. Environmental clubs have also been established in many universities, such as Environment Club 360 º - under the Student Union of National Economics University, which is one of the oldest units operating in the world. Both: Environment and Volunteering. All activities and programs are associated with the goals and directions that the unit always aims for, which is to propagate and promote environmental protection and preservation in the student community and the general community.

Foreign Trade University also has a 350 Vietnam Environment Club - FTU. With the slogan: "Be the change you want to see in the world" - "For the environment, let us act together," Environment Club 350 Vietnam - FTU was born to give young Vietnamese people new opportunities. To join hands to act for a better environment – for today and the future. The number 350 has a special meaning. According to the research scientists, the maximum limit of safe CO_2 concentration in the atmosphere is 350 ppm (units 1 part per million). It is also the level of CO_2 that we

must strive to reduce helping prevent further global warming. Therefore, 350 is a significant symbolic number known to the whole world.

The club is a gathering place for many students conscious of environmental protection. At the same time, this is also the place to create many changes in the awareness and actions of students, attracting more and more students to participate in environmental protection movements. This makes excellent changes in students' understanding and actions when environmental protection movements become more and more popular and practical for life. Students had a sense of transition from the minor activities, such as instead of using bottled water; students actively brought a water bottle to use many times.

However, many students are still aware that their behaviors may harm the ecological environment but have yet to change their behavior actively. For example, the use single-use plastic products, we all know that disposable plastic products such as bottled water, plastic cups, plastic straws, and plastic bags... are products that are difficult to decompose and cause terrible harm to the environment; however, members still use these products daily as a bad habit hard to break. Restaurants and service areas on school grounds still use disposable plastic products rampantly. This requires a drastic change in awareness from the students and the school to have stricter regulations on using single-use plastic products.

3. Conclusions and recommendations

The current environmental problems in our country have posed a requirement to improve the eco-ethics of the people in general and students in particular. Therefore, special attention should be paid to eco-ethical education for students.

Eco-ethical education for students is a long-term and regular task of each individual and society, not a separate task of the education sector. However, to effectively educate students on innovation, it requires Party committees, authorities, mass organizations, and the school's leadership board to thoroughly understand and implement all policies and guidelines of the university. Party, policies, laws of the State, directives of the Ministry of Education and Training related to eco-ethics education for students. However, the reality shows that the implementation of the Party's guidelines and guidelines, the State's policies and laws, and the task of educating students on eco-this is still passive, confusing, heavily formal, and not paying attention. Focus on quality and efficiency.

At the current universities of economics and business administration, eco-ethical education for Students is mainly carried out through activities of the Youth Union and the school's Student Union.

Therefore, it is necessary to continue to research and make necessary changes in training content and programs so that all students and majors can learn and be educated on issues related to eco-ethics and consider this as one of the "standards" required of a global citizen.

It is necessary to take adequate measures to meet the quantity and quality requirements of lecturers teaching eco-ethics at universities and colleges. Because even if it is late, we must also train and foster a team of lecturers with deep expertise in eco-ethics. Besides, there should be close coordination between schools, families, and society in eco-ethical education for students. This must be done because it is the "key" to managing and protecting the environment and the country's natural resources.

One of the challenging points in educating students on eco-ethics is the "warmness" between theory and reality. At school, in class, students can listen to lectures on fundamental theoretical issues about environmental protection and its meaning, with deeply humane, compassionate, and sublime content. However, in real life, even in a specific part of the school, students can witness phenomena and behaviors lacking in innovation and ecological counterculture. Not only at school but also in the place where they live, students can also encounter eco-cultural and non-trivial behaviors, from indiscriminate littering to the use of resources wastefully. In addition to society, violating eco-ethics occurs and brings terrible impacts to the ecological environment.

The contradiction between the lessons on morality, eco-ethics, and reality poses a big problem for students in practicing eco-ethics. Students must promote their positivity, initiative, and self-discipline in practicing eco-ethics; if active, proactive, self-conscious, and consistent, the formation of consciousness, standards, and behavior is manageable.

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Measuring the Learning Effectiveness of Two Courses in a Program in Accounting Data and Analytics

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Abstract
Driven by rapid technological innovation, information technology (IT) is expected to significantly alter the way that accountants work. However, both accounting researchers and practitioners have observed a shortage of accounting professionals who currently possess the relevant technology skillsets to exploit technological advances. In response, the School of Accountancy of a Singapore-based university launched a second major program in Accounting Data and Analytics in 2018. In this study, we examine the learning effectiveness of two courses – Business Data Management and Data Modelling & Visualization – offered as part of the program. Overall, our results suggest that the courses are effective in enhancing the learning of participants in the areas of business data management, data modelling, and data visualization. These findings are important to students, educators, and employers.

Keywords: Accounting Data and Analytics, Skills and Competencies, Course Evaluation

1. Introduction

Driven by rapid technological innovation, information technology (IT) is expected to significantly alter the way that accountants work (Pan et al., 2016; Nielsen 2018; Hoffman 2018; AICPA, 2019; Seow et al., 2021). In particular, Richins et al. (2017) highlight that IT will allow accountants to play a bigger role in creating value for organizations because data and analytics that are enabled by IT complements accountants' skillsets and knowledge. However, they also highlight that educators must update their curriculums to include relevant technology skillsets in order for accountants to fully capitalize on technological advances. In this regard, both accounting researchers and practitioners have observed a shortage of accounting professionals who currently possess the relevant technology skillsets to exploit technological advances (ACCA, 2016; ISCA and ICAEW, 2017; Daff, 2021).

In recent years, there have been calls for universities to include coverage of technological skills in their accounting curriculums (e.g. Albring and Elder, 2020; Sarkar et al., 2021; Myer 2021). The Association to Advance Collegiate Schools of Business (AACSB) has recommended that accounting degree programs develop skills and knowledge related to the integration of IT in accounting and business. Specifically, AACSB's International Accounting

Accreditation Standard A7 (Information Technology Skills and Knowledge for Accounting Graduates) highlights that these experiences should include the development of skills and knowledge related to data creation, data sharing, data analytics, data mining, data reporting, and storage within and across organizations (AACSB, 2021). Similarly, the International Federation of Accountants (IFAC) recommends that relevant technology skillsets - including those in IT, statistics, and data modelling - be integrated with university programs (Sirois and Savovska, 2017).

In response to these demands and developments, the School of Accountancy of a Singapore-based university (UNIS) developed and launched a second major program in Accounting Data and Analytics (AD&A) in 2018. The AD&A second major program seeks to equip accounting undergraduate students with relevant skillsets in data and analytics that can be readily applied in the accounting industry. In this study, we examine the learning effectiveness of two courses offered as part of the second major in AD&A program: Business Data Management (BDM) and Data Modelling & Visualization (DMV). We choose to examine the learning effectiveness of the BDM and DMV courses because data management (Olsen 1999; Levine and Siegel 2001; Lawson and Street 2021), data modelling (Stout 2015; Goh 2018, 2019), and data visualization (Janvrin et al. 2014; Kokina et al. 2017; Goh 2020, Williams 2020; Goh et al. 2021) are relevant data and analytics skillsets that have important and wide-ranging applications in accounting.

We examine the learning effectiveness of the BDM and DMV courses using a 2 (*both_courses* versus *neither_course*) X 1 between participants experiment conducted with 83 undergraduate students enrolled in the Bachelor of Accountancy program at UNIS who are in at least the third year of their studies. In the *both_courses* condition, participants had completed both the BDM and DMV courses. In the *neither_course* condition, participants had completed neither of these courses. Participants in both conditions accessed the experimental instrument via Qualtrics and were asked to answer ten multiple choice questions (MCQs) related to business data management and ten MCQs related to data modelling and visualization. Overall, our results indicate that participants in the *both_courses* condition performed better (i.e. had more correct answers) on both the questions related to business data management and data modelling and visualization than participants in the *neither_course* condition. This suggests that the courses are effective in enhancing the learning of participants in the areas of business data management and data modelling and visualization.

Our findings are important to students, educators, and employers. With the increasing use of data technology in the accounting profession, the demand for accounting graduates equipped with relevant data and analytics skillsets is growing rapidly (Tschakert et al. 2016; Richins et al. 2017; Nielsen 2018; Dow et al. 2021; Kokina et al. 2021). While accounting programs in universities around the world, including in Singapore, have increased their offerings of technology-related courses (Seow et al. 2021; Dzuranin et al. 2019; Richardson and Shan 2019), the effectiveness of these courses in imparting relevant technology skillsets to students is often unclear. To the extent that our results suggest that the courses in BDM and DMV are effective in introducing students to relevant technology skillsets, they would provide important insights to students, educators, and employers.

In particular, a key goal that universities and other educational institutions have when introducing data and analytics related skillsets to their accounting curriculum relates to ensuring students possess up-to-date skillsets being demanded by the accounting profession (Al-Htaybat et al. 2018; Richardson and Shan 2019; Qasim 2020). Stakeholders of the accounting profession, including academics (Sledgianowski et al. 2017), professional bodies (AICPA, 2019; AACSB, 2021; ISCA & ICAEW, 2017), and employers (PwC 2015; Spraakman et al. 2015; Meyer 2021), have highlighted the critical importance for accountants to possess data and analytics skillsets. To the extent that our results suggest that the BDM and DMV courses offered by UNIS are effective in helping students learn data and analytics skillsets, they would provide assurance to both students and employers that students participating in such courses are effectively learning relevant data and analytics skillsets. Further, it is important that universities and educational institutions consider the needs of employers when designing educational programs (Mari et al. 2019). Accordingly, insights from our study would also be relevant to universities and other educational institutions as they make plans to adjust their accounting curriculum to improve the employability of their students.

The rest of our paper proceeds as follows. Section 2 discusses relevant background to the study and develops our hypotheses. Section 3 introduces our method and section 4 presents our results. Finally, section 5 concludes the paper.

2. Background and Hypotheses Development

2.1. Second Major in Accounting Data and Analytics

The second major in AD&A program was launched in 2018 and requires students to complete eight courses in addition to the requirements of the Bachelor of Accountancy program at UNIS. The courses offered by the AD&A second major relate to three key pillars: (i) data technology, (ii) accounting application, and (iii) accounting analytics capstone. First, as part of the data technology pillar, students have to complete four compulsory courses relating to data technology. These courses are designed to provide students with basic data and analytics skillsets that are required in the performance of data and analytics related tasks in the accounting setting. These four courses include accounting information systems, business data management, data modelling & visualization, and statistical programming. Second, as part of the second pillar, students have to complete three elective courses relating to accounting applications. These courses are designed to enable students to apply the basic data and analytics skillsets acquired under the first pillar in specific accounting contexts and functions. Electives offered under the second pillar include forecasting & forensic analytics, analytics for value investing, audit analytics, and auditing information systems. Third, as part of the accounting analytics capstone pillar, students have to complete a capstone course. This course is designed to require students to apply their data and analytics knowledge obtained from the first two pillars to solve real-word accounting problems. The capstone course applies a unique award-winning experiential learning pedagogy that seeks to shift the focus from teaching to learning (Seow et al. 2021). The curriculum structure for the AD&A second major is presented in Figure 1.

Figure 1. Curriculum Structure for the Second Major in Accounting Data and Analytics.

Data Technology (Compulsory) Four Courses	Accounting Application (Electives) Any Three Courses
• Accounting Information Systems • Business Data Management • Data Modelling and Visualization • Statistical Programming	• Forecasting and Forensic Analytics • Analytics for Value Investing • Analytics for Financial Instruments • Audit Analytics • Auditing Information Systems
COMPULSORY: Accounting Analytics Capstone (Experiential-learning format)	

2.2. Evaluating the BDM and DMV courses

The Kirkpatrick's model has been used in examining the effectiveness of training programs, including those offered in universities (Kirkpatrick and Kirkpatrick 2006; Praslova 2010). The model consists of four levels relating to reaction (level 1), learning (level 2), behavioral change (level 3), and organizational performance (level 4). The Kirkpatrick's model is relevant to our setting because it provides a structure for program evaluation that can be adapted to suit the specific situation and intentions of the program being examined in order to ensure adequate and appropriate appraisal (Paull et al. 2016).

We focus on level 2 (i.e. the learning aspect) of the Kirkpatrick's model which evaluates specific aspects of the skills and competencies that students have gained from a program. In particular, we examine the extent to which two courses offered as part of the AD&A second major have achieved their intended learning outcomes by measuring the knowledge that students gain from the courses in BDM and DMV (versus students who have not taken the courses).

The BDM course offered at UNIS covers the fundamentals of relational database theory. It also covers important data management concepts such as data modeling, database design, implementation, data access, and practical

data-related issues in current business information systems. Upon successful completion of this course, students are expected to be able to understand the role of databases in integrating various business functions in an organization, query a database using Structured Query Language, and gain familiarity with some commercial database tools (e.g. MS VISIO, MySQL).

The DMV course offered at UNIS introduces a variety of quantitative techniques used in the development, implementation, and utilization of analytical data models that accountants regularly use in decision making. These techniques include regression analysis, time-series analysis, optimization, text analytics, and simulation. In addition, the DMV course introduces students to key principles and techniques for data visualization. At the end of the course, students are expected be able to create visuals including dashboards and interactive visualizations for decision making in the accounting context.[1] To the extent that both the BMD and DMV courses are effective at improving students' learning and achieve their learning objectives, it would lead to the following hypotheses.

H1: Students who have taken the BDM course will have greater knowledge about business data management than students who have not taken the course.

H2: Students who have taken the DMV course will have greater knowledge about data modelling and visualization than students who have not taken the course.

3. Method

To examine our hypotheses, we conducted an experiment with 83 participants recruited from undergraduate students enrolled in the Bachelor of Accountancy program at UNIS who are in at least their third year of study.[2] Overall, 8 (9.6 percent) participants were between the ages of 18 and 21, 70 (84.3 percent) participants were between the ages of 22 and 25, and 5 (6 percent) participants were above 25 years of age. In addition, 37 (44.6 percent) participants were in their third year of study while 46 (55.4 percent) of participants were in either their fourth or fifth year of study. Further, 36 (43.4 percent) participants were male. A total of 81 (97.6 percent) participants reported that they had completed at least one internship and 28 (33.7 percent) of participants reported that they had completed at least one internship that had exposed them to data and analytics. Finally, 41 (49.4 percent) participants reported that they had completed both the BDM and DMV courses and 42 (50.6 percent) participants reported that they had completed neither course.[3]

We used a 2 (*both_courses* versus *neither_course*) X 1 between-participants experimental design to test our hypotheses. The experiment was administered via Qualtrics. Participants were first asked to state their year of study and if they had completed the BDM and DMV courses. Participants were allowed to proceed with the experiment only if they reported that they (i) were in at least their third year of study and (ii) had completed both BDM and DMV or had completed neither course. Participants who reported that they had completed both BDM and DMV were assigned to the *both_courses* condition while participants who reported that they had completed neither course were assigned to the *neither_course* condition. Across both conditions, participants were then asked to provide demographic information. Following that, they were presented with twenty MCQs. The first ten questions relate to content covered in the BDM course while the final ten questions relate to content covered in the DMV course.[4] Participants were given cash vouchers worth twenty-five Singapore dollars for participating in the study.

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[1] Synopses extracted from the course outlines of the BDM and DMV courses are presented in Appendix A.
[2] We obtained approval to conduct the experiment from our institution's Institutional Review Board.
[3] The age, year of study, gender, and number of internships (including those that exposed them to data analytics) reported by participants who had completed both course and participants who had completed neither course do not differ significantly (all $\chi2<5.13$, all $p>0.27$).
[4] The questions were set by instructors who had taught the BDM and DMV courses at UNIS. We pre-tested the experimental instrument with two faculty members who had taught in the second major program and with five students who were enrolled in the second major program. Overall, they highlighted that the instrument was adequate in testing participants' knowledge of business data management and data modelling and visualization, suggesting that the external validity of our questions is high. The twenty questions used in the instrument are presented in Appendix B.

4. Results

H1 states that participants who have taken the BDM course will have greater knowledge about data management than participants who have not taken the course. H2 states that participants who have taken the DMV course will have greater knowledge about data modelling and visualization than participants who have not taken the course. As an overall measure of participants' knowledge of data management and data modelling and visualization, we computed the number of MCQs relating to data management (*BDM_correct*) and data modelling and visualization (*DMV_correct*) that participants answered correctly. We also computed the sum of the total number of MCQs relating to both data management and data modelling and visualization that participants answered correctly (*all_correct*).

Panel A of Table 1 presents the number of participants who answered each of the twenty questions relating to business data management and data modelling & visualization correctly (incorrectly). Panel B of Table 1 provides descriptive statistics for *BDM_correct*, *DMV_correct*, and *all_correct* while panel C presents simple main effects tests. Overall, we find that the proportion of correct answers is higher in the *both_courses* condition than in the *neither_course* condition for eight of the ten BDM questions (all $\chi^2 > 5.49$, all $p < 0.01$, one-tailed) and eight of the ten DMV questions (all $\chi^2 > 2.03$, all $p < 0.08$, one-tailed). In addition, the proportion of correct answers is no different in the *both_courses* condition and the *neither_course* condition for the remaining two BDM questions (all $\chi^2 < 0.33$, all $p > 0.28$, one-tailed) and two DMV questions (all $\chi^2 < 0.60$, all $p > 0.22$, one-tailed).

Further, *DM_correct* (t=7.27, p<0.01, one-tailed), *DMV_correct* (t=5.51, p<0.01, one-tailed), and *all_correct* (t=7.87, p<0.01, one-tailed) are significantly greater in the *both_courses* condition than in the *neither_course* condition. Overall, these results suggest that participants who have taken the BDM and DMV courses have greater knowledge of the two subject areas than the students who have not taken the courses, and are consistent with both H1 and H2.

Table 1: Participants' MCQ Responses.
Panel A: Number of Correct Responses (Number of Incorrect Responses)

Question	Condition		χ^2	P-value*
	Both_courses	*Neither_course*		
BDM Q1	23 (18)	24 (18)	0.01	0.46
BDM Q2	34 (7)	20 (22)	11.38	0.00
BDM Q3	30 (11)	16 (26)	10.33	0.00
BDM Q4	26 (15)	13 (29)	8.78	0.00
BDM Q5	21 (20)	11 (31)	5.49	0.01
BDM Q6	30 (11)	12 (30)	16.51	0.00
BDM Q7	16 (25)	19 (23)	0.33	0.28
BDM Q8	30 (11)	9 (33)	22.30	0.00
BDM Q9	32 (9)	13 (29)	18.54	0.00
BDM Q10	26 (15)	6 (36)	21.14	0.00
DMV Q1	38 (3)	23 (19)	15.32	0.00
DMV Q2	23 (18)	17 (25)	2.03	0.08
DMV Q3	38 (3)	31 (11)	5.27	0.01

DMV Q4	39 (2)	26 (16)	13.48	0.00
DMV Q5	31 (10)	16 (26)	11.89	0.00
DMV Q6	23 (18)	20 (22)	0.60	0.22
DMV Q7	33 (8)	17 (25)	13.87	0.00
DMV Q8	16 (25)	9 (33)	3.05	0.04
DMV Q9	32 (9)	25 (17)	3.31	0.03
DMV Q10	14 (27)	13 (29)	0.10	0.38

Panel B: Total Questions Correct: Mean (Standard Deviation) [Number of Participants]

Condition	BDM Questions	DMV Questions	All Questions
Both_courses	6.54 (2.00) [41]	7.00 (1.69) [41]	13.54 (3.17) [41]
Neither_course	3.40 (1.93) [42]	4.69 (2.10) [42]	8.10 (3.13) [42]

Panel C: Simple Main Effects

Effect	t	p-value*
Both_courses versus *Neither_course* for BDM questions	7.27	0.00
Both_courses versus *Neither_course* for DMV questions	5.51	0.00
Both_courses versus *Neither_course* for all questions	7.87	0.00

Table 1 presents results for participants' response to MCQs. Panel A presents the number of questions that participants answered correctly and incorrectly. One-tailed tests are indicated with a *. Panel B presents descriptive statistics for the *both_courses* and *neither_course* conditions while panel C presents simple main effects tests.

5. Conclusion

UNIS launched the second major in AD&A program in 2018 to equip accounting undergraduate students with technology skillsets that can be applied in the accounting context. This program was launched in response to calls from both the industry (PwC 2015; ISCA and ICAEW 2017; AICPA, 2019; AACSB, 2021; ISCA & ICAEW, 2017) and academia (Dzuranin et al. 2019; Richardson and Shan 2019; Dow et al. 2021) for accounting education programs to incorporate technology skillsets, including those relating to data and analytics, in their curriculums. In evaluating the second major in AD&A program, one important aspect relates to the learning effectiveness of the courses offered (Kirkpatrick and Kirkpatrick 2006; Praslova 2010). In this study, we focus on evaluating the learning effectiveness of students in two courses offered in the AD&A second major program: BDM and DMV.

We conducted an experiment to evaluate the learning effectiveness of the BDM and DMV courses offered to accounting undergraduates at UNIS as part of the second major in AD&A. Overall, we find that participants who had completed both the BDM and DMV courses performed better when answering twenty MCQs related to business data management as well as data modelling and visualization compared to participants who had completed neither of these courses. These results suggest that the BDM and DMV courses are effective in enhancing students' learning of data and analytics skillsets related to business data management as well as data modelling & visualization. These findings are particularly important for students, employers, and educators. In particular they are informative to students and employers because they provide insights into the learning effectiveness of two courses related to data and analytics skillsets in two important areas (i.e. business data management and data modelling and visualization) that are in demand in the accounting sector. They are also informative to educators because they provide insights that are relevant in the planning and implementation of an accounting curriculum that will increase the employability of students.

Our study is subject to limitations. In particular, because we only examine the learning effectiveness of the BDM and DMV courses offered as part of the second major in AD&A at UNIS, our finding may not generalize to other contexts. For example, it is possible that the learning effectiveness observed in this study may not generalize to courses relating to other technology skillsets (for example, other skillsets covered in the second major program include programming, fraud analytics, etc) or to courses covering the same technology skillsets but which adopt a different pedagogical approach than that employed by UNIS (for example, while UNIS employs seminar-style classes of approximately 45 students, courses offered by other institutions may adopt alternative pedagogical approaches such as lectures, which typically involve a larger number of students and less two-way interaction between the instructor and students).

There is scope for future research to extend our findings. First, future studies could examine if our findings relating to the learning effectiveness of the BDM and DMV courses extend to courses relating to different technological areas or to when alternative pedagogical approaches are employed. Second, the Kirkpatrick model (Kirkpatrick and Kirkpatrick 2006), which can be used to evaluate educational programs, consists of four levels relating to reaction (level 1), learning (level 2), behavioral change (level 3), and organizational performance (level 4). In this study, we focus on level 2 by examining the learning effectiveness of the BDM and DMV courses. Future research could extend our findings by evaluating the program via the other three levels identified in the Kirkpatrick model.

Acknowledgement

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Appendix A
Course Synopses Extracted From Course Outlines

Business Data Management
This course will cover fundamentals of relational database theory, important data management concepts such as data modeling, database design, implementation, data access, and practical data-related issues in current business information systems. Upon successful completion of this course, students will be able to understand the role of databases in integrating various business functions in an organization, query a database using Structured Query Language and gain familiarity with some commercial database tools (MS VISIO, MySQL).

Data Modelling and Visualization
Accountants regularly work with large amounts of financial and non-financial data. Data modelling is an important means through which accountants can analyse such data for trends, patterns, relationships, and other useful information for decision making. This course will introduce a variety of quantitative techniques used in the development, implementation, and utilization of analytical data models that accountants regularly use in decision making. It will cover techniques including regression analysis, trend analysis, optimization, text analytics, and simulation. Visualization provides an important means through which accountants can communicate insights obtained via data modelling to their intended recipients. Well-designed visualizations can improve the memory, comprehension, and decision making of intended recipients of this information. This course will introduce students to key principles and techniques for data visualization. Students will create visuals including dashboards and interactive visualizations for decision making in the accounting context.

Appendix B
Multiple Choice Questions

Business Data Management

1) Which of the following is not a valid SQL type?

 a. NUMERIC
 b. FLOAT
 c. DECIMAL[5]
 d. CHARACTER

2) Which operator is used to find a value within a list of values?

 a. FIND
 b. BETWEEN
 c. AT
 d. IN

3) Which of the following is true about the HAVING clause?

 a. A: Similar function as WHERE clause but it is used for groups rather than rows
 b. B: Similar function as WHERE clause but it is used for columns rather than rows
 c. C: Similar function as WHERE clause but it is used for columns rather than groups
 d. D: It works exactly as a WHERE clause

4) Which command can be used to change a table's definition in SQL?

 a. CHANGE
 b. UPDATE
 c. MOD
 d. ALTER

5) When using an SQL SELECT statement querying a single table, the asterisk (*) means that:

 a. All records meeting the LIKE wildcard definition are to be returned
 b. All records with NULL values are to be returned
 c. All records meeting the full criteria are to be returned
 d. None of the above is correct

6) Which of the following is the correct order of a SQL statement?
 a. SELECT, GROUP BY, WHERE, HAVING
 b. SELECT, WHERE, GROUP BY, HAVING
 c. SELECT, HAVING, WHERE, GROUP BY
 d. SELECT, WHERE, HAVING, GROUP BY

7) The SQL statement: SELE ROUND (724.109, -1) AS RoundValue;
What is the value of RoundValue?

 a. 0
 b. 720.000
 c. 724.000
 d. NULL

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[5] Correct answers are indicated in bold font.

8) Which statement is used to retrieve all data from staff table whose name starts with 'p'?

    a. SELECT ALL FROM staff WHERE COLUMN IN 'name' and col_name LIKE 'p%'
    b. SELECT ALL FROM staff WHERE COLUMN IN = 'name' and col_name LIKE 'p*'
    c. SELECT ALL FROM staff WHERE name LIKE 'p%'
    d. SELECT ALL FROM staff WHERE name LIKE 'p*'

9) Which of the following query finds the name of students who have borrowed at least one book?

    a. SELECT DISTINCT s.sname FROM students s, borrowed b WHERE s.sid = b.sid
    b. SELECT sname FROM students, borrowed WHERE 'sid students' = 'sid borrowed'
    c. SELECT UNIQUE name FROM students, borrowed WHERE sid IS EQUAL in students, borrowed
    d. SELECT s.name FROM students, borrowed WHERE 'sid students' = 'sid borrowed'

10) Evaluate the following statement:

SELECT a.emp_name, a.sal, a.dept_id, b.maxsal FROM employees a,
(SELECT dept_id, MAX(sal) maxsal FROM employees GROUP BY dept_id) b
WHERE a.dept_id = b.dept_id AND a.sal < b.maxsal;

Which of the following statement is true?
    a. The statement produces a NULL match
    b. The statement will throw an error at Line 3
    c. The statement produces the employee name, salary, department ID, and maximum salary earned in the employee department for all departments that pay less salary than the maximum salary paid in the company.
    d. The statement produces the employee name, salary, department ID, and maximum salary earned in the employee department for all employees who earn less than the maximum salary in their department.

Data Modelling & Visualization

11) Simulation should be used to analyse spreadsheet models where one or more of the input variables _____ .

    a. is subject to random variability (i.e. uncertainty)
    b. is a discrete variable
    c. is non-negative
    d. has a defined mean

12) Which of the following best describes the time series below?
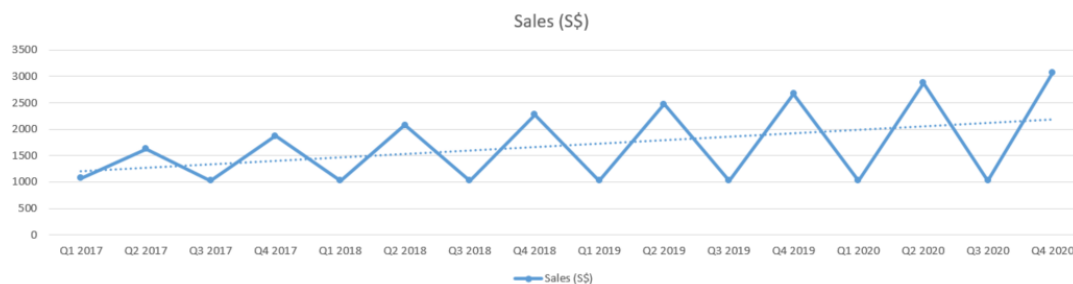
    a. Stationary time series
    b. Stationary time series with additive seasonal effects
    c. Non-stationary time series with no seasonal effects
    d. Non-stationary time series with multiplicative seasonal effects

13) In a simple linear regression _____ .

   a. an arithmetic equation is used to explain the relationship between an independent variable and a dependent variable
   b. there is always more than one independent variable
   c. independent variables are always subject to uncertainty
   d. we always seek to minimise the sum of weighted percentage deviations

14) Dummy variables are used in a regression model when potential explanatory variables _____.

   a. are negative
   b. are categorical and cannot be measured on a quantitative scale
   c. are outliers
   d. do not measure the outcome accurately

15) The objective function in a goal programming problem seeks to _____.

   a. maximise the common denominator of goals
   b. maximise the multiple of weighted percentage deviations from goals
   c. minimise the multiple of percentage deviations from goals
   d. minimise the sum of weighted percentage deviations from goals

16) Constraint functions in a linear programming problem _____.

   a. are always non-negative in nature
   b. contain deviational variables
   c. represent hard constraints
   d. represent soft constraints

17) A visualization distorts the visual representation of data if _____.

   a. the visual effect is not consistent with the corresponding numerical representation of the data
   b. it contains chart junk
   c. there are inconsistencies in visual encoding
   d. it contains a non-stationary time series

18) Which of the following is not one common way in which the graphical integrity of a visualization is compromised?

   a. Distortion of the visual representation of data in the visual
   b. Design variation in the visual
   c. Lack of context in the visual
   d. The overuse of colour in the visual

19) The lie factor measures the amount of graphical distortion in a visual. Which of the following lie factor values indicates no graphical distortion in a visual?

   a. -0.50
   b. 0.50
   c. 1.00
   d. 2.00

20) The narrative framework introduces three elements that a visualization should possess. Which of the following is not one of the three elements?

   a. Visual design
   b. Messaging
   c. Interactivity
   d. Colour usage