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Educational innovation into English as a Foreign Language Practices for Early Children: Neuroeducation and the Total Physical Response Method

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Abstract

This work aims to improve the practices of English as a foreign language of early children through the articulation of Neuroeducation and the Total Physical Response methodology. This work subscribes to the postmodern paradigm and the mixed educational research approach. The participants were thirty-five students from the second grade of primary education from Ecuador. The research team designed an educational intervention that mixed music and dance for creating more meaningful learning environments in language practices. The instruments used were contextualized observation, semi-structured interviews, and tests of English knowledge. The results allow determining the increase in the significant level of the classes and the motivation for learning English in all students. It is concluded that the articulation of the Total Physical Response methodology and Neuroeducation can contribute positively to the creation of meaningful learning environments and to the innovation of didactics for teaching young children of English as a foreign language.

Keywords: English as a Foreign Language, Educational Innovation, Neuroeducation, Motivation to Learn

1. Introduction

This work proposes the use of physical activities and musical videos as resources for the innovation of the English as a Foreign Language (EFL) practices since neuroeducation. The articulation proposed offers learners more rhythmic environments, faster learning, creativity sense, and improving of the learners memorizing through their motor actions. Furthermore, Ibrohim, Septianti, & Sadikin (2018); Bonnin, Alarcón, & Colomer (2020) argue that one of the important parts in the acquisition of a new language is the vocabulary allowing to learners communicate efficiently and exactitude their feelings and needs.

When, teachers mix Total Physical Response methodology and Musical videos for learning vocabulary in a foreign language, they encourage students' listening comprehension and oral expression (Hernando, Hortigüela, & Pérez, 2017). They applied Neuroscience using music and body movement coordination (Carballo, 2017; Joldersma,

2016). Nevertheless, in Ecuador persists a limitation concerning educational research on the relevance and efficiency of articulating arts, sport, music, body movements, etc., to the learning of a foreign language in childhood ages.

Total Physical Response (TPR) has a more friendly operational way that traditional methodology for teaching a language. It is more efficient for helping students learning English vocabulary because, students enjoy moving around and do not sit on the chair only (Susanti, 2019). They are activities that contribute to creating learning experiences to be remembered even the pass of the time (Bueno, 2019).

Teachers permanently review their procedures to introduce changes in didactics expecting to help learners to improve their educational results in the conditions of living (Rueda, Acosta & Cueva, 2020). Thus, physical and dancing activities can increase early children's motivation for learning a foreign language (Sari, Gea, & Fajrina, 2021).

The motivation of the authors to investigate Neuroeducation in the instruction of English as a foreign language in early childhood with the hope of contributing to the improvement of didactics for the teaching of hundreds of thousands of young children in the region. The research questions to answer in this work are:

- How is the teachers' experience using Neuroscience in EFL practice?
- What are students' parents impressions concerning physical activities and dance used in EFL practices?
- What are the differences between boys and girls about their participation, oral practice, and vocabulary acquisition during the EFL practices using music and Total Physical Response?
- What are the changes in students' motivation for learning EFL when they are exposed to the mixture of Musical videos and Total Physical Response?

This work aims to innovate the practices of English as a foreign language of young children through the articulation of Neuroeducation and the Total Physical Response methodology.

1.1. Neuroeducation

According to Joldersma (2016), Neuroeducation emerges as a relationship between the study of the brain and its use in education. The objective of Neuroscience is to integrate knowledge regarding the functioning and development of the brain to improve the pedagogical practice of teachers and professors. Scientists make use of technology and the study of images to explore the functioning of the human brain. In addition, neuroscience seeks to know the links between the brain, mind, and nervous system (Nouri, 2016).

According to Carballo (2017), Neuroscience is a transdisciplinary science that emerges from the interaction and interrelation between neuroscience, psychology, and education. The study of the brain through neuroscience confirmed its relationship with the learning process. However, brain plasticity is higher when the brain is more immature, that is, during childhood and early school grades. Therefore, the relationship between educational processes and relationships in the classroom emerges in this sense. Neural and synaptic plasticity allows the brain to modify itself based on lived experiences (Zhou & Shu, 2017). Therefore, quality, loving early care responds to the child's needs to support facing and overcoming stressors and negative situations that could arise in life. Its development contributes to the construction of a more resilient and assertive personality and is a protective factor of people in the presence of physical and mental illnesses (Dubinsky, Guzey, Schwartz et al., 2019).

Epigenetic modifications in the field of education are established by the interaction of people with the surrounding environment. Thus, to Bueno (2019), life experiences and learning themselves condition the functioning of genes to influence people's learning processes. In this sense, Doukakis (2019) argues that the study of the brain aims to expand the understanding capacity of the individual or team. In other words, it enhances the capacity for attention, decision-making, and communication. Thus, it is possible to generate specifically suitable learning itineraries for each person from the study of their brain activity and its contrast with factors such as each person's profile and educational framework.

Ruifeng, Qiaoyun, Jie, and Lun (2021) articulated that the neuroscientific evaluation method has processes of evaluating the knowledge of students and teachers. They studied the attention and emotion indexes of students and teachers. They centered their interest on teachers' capacity to teach, students' learning attitudes, students' learning effect, the selection of the course content evaluated to have a more objective evaluation base of the teaching-learning process.

1.2. Total Physical Response (TPR)

It combines psychology and human movement principles to increase the students' confidence tracing their memory towards a foreign language in a natural way (Saehu, Sariyati, & Syah, 2017). The evidence shows children have a good acceptance of this method, allowing students to improve their vocabulary acquisition through the physical and verbal movement articulation (Nafkhatul and Taranindya-Zulhi, 2017). One of the most common teachers' problems is to find a methodology to teach vocabulary to early children because, this age cannot write to copy the words and the memory is a key factor to develop using repetitions and activities children of this age can do (Ibrohim, Septianti, Sadikin, 2018).

When teachers use TPR techniques along with sports and games, they teach in a more entertaining way. It is very useful for teaching Mathematics in a foreign language (Coşar & Orhan, 2019). Nevertheless, not all teachers are comfortable using music and dancing in their practices (King, 2018) because, they do not have evidence of its real impact on students learning process.

To English Tina (2019) TPR incorporates skills and language components when learners execute different instructions given by the teacher, expecting students feel prepared and safe to repeat new words in the target language. Thus, the method used to introduce language skills in an action in which a teacher serves. It can help learners perform their movements joined to a foreign language until they can speak out without any limitation. It generally has three roles (1) an order taker, (2) a model provider, and (3) an activity monitor.

According to Khakim & Anwar (2019) teachers support students learning helping them to understand vocabulary and the correct ways to describe everyday situations in the use of the target language. Thus, TPR method contributes the children's learning process making the classes fun for reducing the monotonous traditional classes focus on the teacher (Susanti, 2019). Besides, *Mariyam & Musfiroh* (2019) argue the children show a great initiative for the development of learning through the EFL vocabulary acquisition. They dominate the use different categories of words used in diverse levels of complexity. TPR focused on stimulation through a response, this method helps students to learn through dance as an artistic expression, but also, as a more natural way to learn a language (Bonnin et al., 2020).

1.3. Music and Motivation for learning a foreign language

Motivation for learning ratifies its contribution as an essential factor in reaching learners' communication on the use of a foreign language, helping learners develop listening, reading, writing, or speaking skills constantly and progressively (King, 2018; Tobar and Álvarez, 2018).

Young children have movement as an everyday activity because they do it at home. For example, dancing and singing motivate learners and help them reduce the learning complexity barrier, allowing them to respond more efficiently to teachers' instructions (Yusuf and Rusdi, 2017). Music and movement provide students the motivation for learning probably because of diverse, colorful, new, sound materials. Those renewable resources may help them break the ice in language lessons and create a more positive atmosphere for learning (Kovacikova, 2018). Students meet the dancing steps, practice them, and use those steps to encourage their artistic expression (Amutan, Amutan, Ching, Ramalingam, Maruthai, & Ravindranath, 2018).

When teachers select their didactic material, they think about the most appropriate pieces according to learners' ages (Shi, 2018). Thus, dancing as a motivational act is extensively used in language training centers, expecting to enhance vocabulary learning (Tobar and Álvarez, 2018). Furthermore, teachers adapt classes and didactic

material to their learners' motivation and need to achieve class achievement (Purnama, Rahayu, & Yugafiati, 2019). However, a large amount of learning material is available in English, being one of the main factors that influence the learners' curiosity (Siregar and Siregar, 2020). Thus, songs motivate sources that benefit students' foreign language learning process in vocabulary acquisition, pronunciation, listening, and memory improvement (Ningsih, 2019; Kralova, Kovacikova, Repova, Skorvagova, 2021). In addition, music can help to improve those disruptive behavior appearing in some learners face to the complex lesson. It can help students memorize new language patterns, facilitate the assimilation of grammar rules, and relax after mastering a complex topic without departing from the main lesson's topic (Vishnevskaja and Zhou, 2019). Therefore, teachers need to provide feedback for the students to help them learn from their mistakes (Sari et al., 2021).

In addition, dance provides relaxation to some and creativity to others. It serves as a platform for the learner dance practicing (Yusuf and Rusdi, 2017). However, music is not present daily in classes, it is not established as a learning method yet, but through music, teachers allow learners to improve their integral development (King, 2018).

According to Amutan et al. (2018), dance produces a calm environment for emerging in people the security sensation. Such an effect may be caused because people communicate in the same way by practicing a speech until they can express it more naturally. Such activities represent a learners' challenge to reach, but they can also offer fun and meaningful experiences that active learning process (Nuraeni, 2019). Thus, music also helps teachers in cases where students are restless in classes. It allows students to assimilate and relate what they have learned without stray from the topic (Vishnevskaja and Zhou, 2019).

In previous studies appear the work of Windi (2017) assessed English vocabulary acquisition in autistic primary school students before and after an educational intervention using TPR method, reporting an increment of correct answers from 13.3% to 67.7%. Another study cited belongs to Bonnin et al. (2020), considers that even dance offers students the opportunity to develop skills in terms of creativity, identity, and sense of community. It seems that subjects of the curriculum do not use the dance contributions.

2. Material and Methods

This work is an action research project held for EFL instruction of early children executed in 2019-2020 in Ecuador. It used qualitative and quantitative approaches of educational research to collect information following the strategies presented by Buchanan and Bryman (2018).

2.1. Participants

The participants were 35 students of the 2nd grade of elementary schools located in Ecuador. There were 20 girls and 15 boys in ages between 6 and 7 years. Parents accepted the invitation to participate in this research project. They signed the informed consent letter.

The identity of the participants will be kept anonymous, and the information will be protected by the research team for 7 years. The information will be used only for research purposes.

2.2. Instruments

The research team chose the following instruments.

In-depth interview guide. - This instrument aims to collect data regarding teachers' perception about the use of the movement and dancing didactic for teaching EFL to children. The instrument was developed *ad hoc*, by the researcher team. It consisted of 5 questions in-depth interview. The instrument was evaluated for specialists panel integrated for professors of English teachers as a foreign language TEFL. They were affiliated to a national university located in Manabí, Ecuador. The interviews to three EFL teachers that commonly use movement and

dance activities in the EFL instructions participated in the in-depth interview using the informatic application ZOOM.

Focus group guide- The researcher team *ad hoc*, designed the instrument to collect EFL teachers' information regarding to 'Teachers' experiences using dance and movements in EFL practice'. The categories used in the analysis were (1) Activation of learning in children through stimulation with dancing in EFL practices. Subcategories (1.1.) Neural development: Affections, Collaborative work, (1.3.) Communicative process, and (1.4.) Physical laterality. The instrument was evaluated by a panel of specialists in the fields of EFL instruction, Education management and Psychology, all affiliated to a public university in Ecuador, They recommended to concentrate the instrument on the category related to the stimulation with dancing in EFL practices.

Assessment rubric. - The instrument used was Windi (2017) to assess vocabulary learning in EFL students at high school. However, the version used was adjusted to work with minors and online education. It consists of two moments: (1) Group evaluation: The class is asked about images/vocabularies previously taught. Then, students raise their hands to indicate they know the word and its meaning. (2) Individual evaluation: Each participant was evaluated individually following the same process. The scoring rubric indicates the response levels: (a) totally correct, (b) almost correct, (c) acceptable, and (d) incorrect.

A panel of specialists in EFL instruction evaluated the instrument. The panel of specialists recommended using the instrument before and after each EFL session as a permanent evaluation procedure.

2.3. Procedures

Stage 1: Selection of participants and schools. Obtained from parents' permission.

Stage 2: Interviews with English teachers and parents.

Stage 3: Execution of the educational intervention plan. The pre-test is administered at the beginning of the process and the post-test at the end of the 6 sessions of music video and body movement activities.

Stage 4: analysis of the information with categorical techniques and statistical analysis of the data.

3. Results

3.1. Teachers' experience using Neuroeducation in English as a Foreign Language practice.

Teachers' voices collected in the focus groups about their experiences using Neuroeducation and physical activities in EFL class. See table 1.

Table 1: Teachers' experiences using Neuroscience and Physical activities in EFL practice.

Categories	Teachers' voices evidence	Sub-categories
Activation of learning using body movements in EFL practice	<i>GF1.P5.19:30</i> "Students usually communicate their feelings using body postures or movements. Teachers should be in attention of such process."	Communicational process.
	<i>GF1.P1.0:30</i> "Through dance, we can transmit a message, this has a lot to do with the brain because dance helps to express your emotions through coordination."	Neural development. Affection.
	<i>GF1.P2.2:10</i> "Contributes to mental and physical balance. The brain works out by following the rhythms of music. This is a brain coordination activity."	Physical laterality.
	<i>GF2.P1.2:50</i> "It helps to control the energy of the group, unlike a monotonous class in which the children have a lot of energy collected in their bodies."	Neural development: Energy management. Neural development:

	GF2.P2.3:30 "Physical activity helps children to be more concentrated when they have linguistic practice using a foreign language. They really need the movements".	Energy management.
	GF2.P3.4:08 "Through body movement stimulates and motivates to achieve greater verbal and physical expression."	Communicational process.
	GF2.P4.6:30 "The first thing that must be developed is fine motor skills, knowing kids' right and left side, this allows children to keep a body balance.	Physical laterality.
	GF2.P5.24:00 "Kids communicate to others their feelings using their body language. However, when they spend hours and hours sat down it is hard to have the opportunity to express themselves".	Communicational process.
Movement for stimulation of Students' thinking process stimulator	GF2.P1.22:00 "People who practice dance improve their mastery of movement. In a similar way it happens when people think about solutions for math problems."	Mathematic and logic thinking.
	GF1.P3.22:00 "Dance is related to neuroscience and the management of emotions.	Affective thinking. Cultural thinking.
	GF1.P4.24:20 "Dance can be related and mentally processed with culture and with the ancestral legacy.	Mathematic and logic thinking.
	GF1.P5.25:30 "Activates the hemispheres of the brain and activates people's thinking."	Mathematic and logic thinking.
	GF2.P4.36:20 "The motor skills are exercised with dancing and singing contribute to the development of neural branches that provide children logical thinking. "	Mathematic and logic thinking. Affective thinking.
	GF2.P5.43:00 "Students think for possible solutions to the issues that affect them. They relax their bodies doing movements and their affective thinking is activated.	Cultural thinking.
	GF2.P3.43:00 "Movement also helps a lot with memory, mental agility because, through this practice people understand situations and issues around them.	

Resource: Teachers' voices collected in focus groups (Feb/2020).

3.2. Parents' impressions about the use of dancing in English as a Foreign Language practice

Table 2 shows the teachers' voices concerning the parents' impressions when the students are exposed to physical activities and dancing in school. They were organized in (1) the benefits of physical activity and dance and (2) the barriers to dance as a learning activity.

Table 2: Parents' impressions for the use of physical activities and dancing in EFL practices

Evidence	Sub-categories
Category 1: Benefits of physical activity and dance on children's development	
E1.3:00 "Through movement, possible bad formations, postures are detected, and it is possible to work on correction to help children."	Detection of harmful formations, disability, or diseases.
4:15 "Physical activity helps a lot, timid children. They coordinate their bodies through dance and movement".	Strengthening of self-confidence.
5:00 "The minors concentrate on physical activity that helps them to interact with classmates and teachers.	Promotes concentration.
12:00 "Through Physical Education and Culture at the initial level, we have the part of gross motor skills and body movement. They use physical activities and dance".	Socialization interaction. Motor development.
	Self-recognition of the body.

<i>E2.3:00. "Motor skills and movements that are incorporated into their knowledge of what children are capable of and develop skills as the child experiences movement techniques such as agility, endurance, strength."</i>	Motor development Motor development. Learners' concentration.
<i>E.4:30 "Activate children's brains. The hemispheres of the brain help control balance. Dance helps release that energy. Children are more focused because they like to move."</i>	Motor development. Learners' concentration.
<i>E.5:20 "Dancing brings a message, and it helps to develop physical abilities and motor skills through the execution of movements."</i>	Discipline. Learners' concentration.
<i>E.9:00 "Help students to have discipline, they begin to respect the times in music, they are disciplining themselves through body movement."</i>	Strengthening of self-confidence.
<i>E.12:20 "Dancing helps people to have the confidence to convey a message or feelings." GF2 P5 18:00 "Helps to learn and everything that has to do with activating and exercising their brains."</i>	Learners' concentration.
<i>E.21:30 "Dance is related to neuroscience. When people dance, they create more neural branches in the brain as a process of learning. Physical activity gives students a more significant learning capacity".</i>	Learners' concentration. Improve learning environments.
<i>E3.4:00 "Children repeat in the same way as the mother tongue is acquired as it creates a more natural and relaxed learning environment."</i>	Improve learning environments.
<i>7:00 "Ease of being used especially with initial education children, the pre-writing processes, to get to writing you must learn to have fine movements. E. 16:00 "Everything that has to do with fine motor skills, Spanish dance-type hand movements, start moving your hands."</i>	Motor development.

Source: Focus groups (August/2020).

To answer the question. What are the differences between boys and girls about their participation, oral EFL practice?

Ho: There are not significant differences for the variables: participation, oral practice, and vocabulary acquisition

Ha: There are significant differences for the variables: participation, oral practice, and vocabulary acquisition

Re-account

		Participation					Total
		6,00	7,00	8,00	9,00	10,00	
Students' sex	1,00	5	0	1	1	8	15
	2,00	2	7	3	1	7	20
Total		7	7	4	2	15	35

Re-account

		Oral practice and repetition of vocabulary						Total
		5,00	6,00	7,00	8,00	9,00	10,00	
Students' sex	1,00	0	3	2	3	1	6	15
	2,00	1	1	8	5	3	2	20
Total		1	4	10	8	4	8	35

Re-account

		Students' concentration in the class						Total
		5,00	6,00	7,00	8,00	9,00	10,00	

Students' sex	1,00	0	2	2	3	4	4	15
	2,00	1	3	8	4	2	2	20
Total		1	5	10	7	6	6	35

Re-account

		Oral repetition of movements practice						Total
		5,00	6,00	7,00	8,00	9,00	10,00	
Students' sex	1,00	0	2	3	3	2	5	15
	2,00	1	3	3	8	2	3	20
Total		1	5	6	11	4	8	35

Table 3: Chi-square of Pearson variables and factor sex

Variable	Factor Sex	Hypothesis
Participation	,066	Accepted Ho.
Oral practice and repetition of vocabulary	0,128	Accepted Ho.
Concentration in the class	0,339	Accepted Ho.
Repetition of movements	0,650	Accepted Ho.

The result of Pearson's Chi-square for all variables is greater than 0.050. The null hypothesis is accepted for all cases.

3.2. Changes in Students' motivation for learning EFL

The changes detected in the motivation of the participants when they are exposed to movement and dancing activities. It shows a comparison of the pretest and posttest in students' motivation.

Table 3: Motivation for learning of the participants before and after the educational intervention

Pretest: No stimulation with dancing and singing		Levels of motivation						Total
		4,00	5,00	6,00	7,00	8,00	9,00	
Student	Female	0	1	4	4	6	0	15
	Male	1	1	3	7	7	1	20
Total		1	2	7	11	13	1	35
Post-test: Stimulation with dancing and singing		Levels of motivation						
		5,00	6,00	7,00	8,00	9,00	10,00	
Student	Female	0	1	2	2	4	6	15
	Male	1	1	5	6	6	3	20
Total		1	2	7	8	10	9	35

Source: Research project registers (March. /2020).

The results show that Children's motivation for learning increases from the median of 8.00 pretest to 9.00 in the posttest. In the pretest, motivation reaches 9.00 points with a frequency of 1 participant, while the posttest reports a level of 10.00 in motivation, presenting a frequency of 9. Consequently, there is a significant increase in motivation for student learning.

The inferior line shows the number of words students remember when the class uses a conventional methodology. The upper line shows the students' new vocabulary when the class uses dance and singing activities, offering a more meaningful experience.

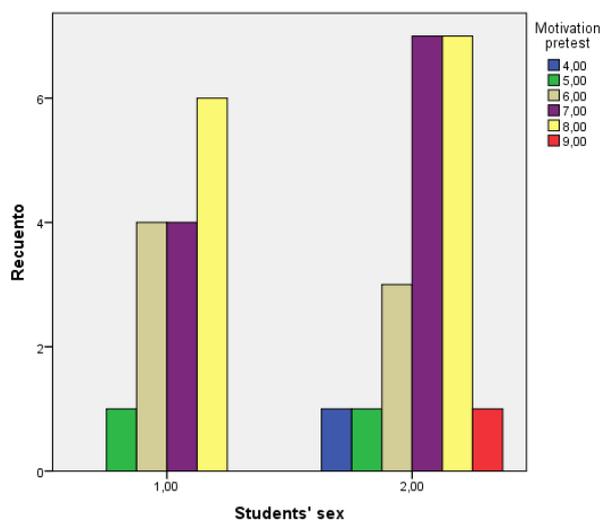


Figure 1: Pre--Test Motivation

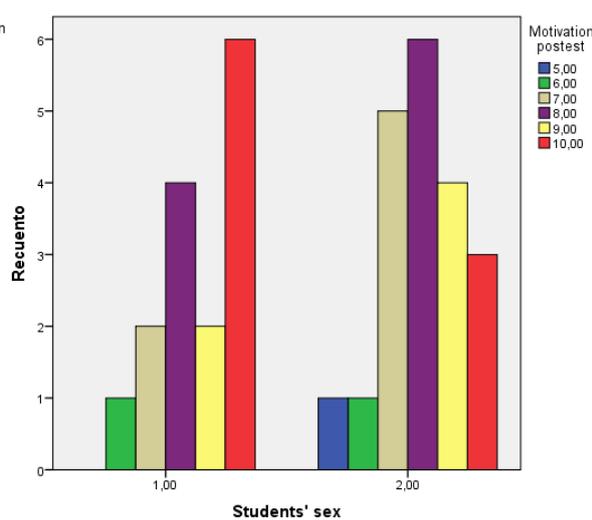


Figure 2: Post-test Motivation

Resource: Research project records (March /2020).

3.4. Hypothesis testing

The null hypotheses are:

Ho1: There are no significant changes in the motivation to learn English in children when working with and without dancing and singing.

Ho2: There are no significant changes in the vocabulary acquisition in pretest and post-test.

Ho3: There are no significant differences between the gender factor of the participants and the levels of the variables of participation, vocabulary acquisition, concentration, accuracy in the repetition of movements, and motivation to learn the EFL.

Table 4: Normality tests – motivation for learning

Normal Series test

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Estadístico	gl	Sig.	Estadístico	gl	Sig.
Motivation pretest	,212	35	,000	,886	35	,002
Motivation posttest	,154	35	,034	,909	35	,007

a. Significance correction Lilliefors

The results of the test Kolmogorov-Smirnov for the normality of the data series showed that motivation for pretest *p-value*=0.000 and posttest *p-value*=0,034 did not pass. Then, researcher team chose to use the nonparametric Wilcoxon test.

Motivation for learning. - The Wilcoxon test for the hypothesis motivation for learning shows *p-value* = 0.000. Thus, it rejects the null hypothesis, and the alternative hypothesis is accepted. Consequently, there are significant changes between the pretest and posttest of student motivation for learning when the classes use dancing and singing as a teaching tool. Asymptotic significances are shown. The significance level is .050.

	Hipótesis nula	Test	Sig.	Decisión
1	La mediana de las diferencias entre Motivation for learning y Motivation without stimulation with dance and singing es igual a 0.	Prueba de Wilcoxon de los rangos con signo de muestras relacionadas	,000	Rechazar la hipótesis nula.

Figure 4: Test of the Hypothesis Motivation for learning

Discussion

Based on the literature review and results obtained in this research, the authors agree with the position of Windi (2017) when affirm that, students achieve to retain more information and in a faster way.

Regarding the vocabulary acquisition variable results. - All students managed to improve the number of new English language words acquired when working with a methodology that stimulates learning and makes it more significant, achieving that the students maintain more excellent learning.

Teachers are encouraged to incorporate dancing and singing into the educational processes they carry out, Results are consistent with Rueda et al. (2020) regarding the fact that education requires teachers with a global vision, capable of using innovative communication styles to overcoming socio-educational problems in Ecuador, a result that is consistent with the position of Alemán et al. (2020) regarding the idea that each teacher should responds to their students' needs and the context.

Besides, the results allow to ratify the position of Sari (2021) concerning Total Physical Responds is a methodology that promotes the articulation of thought and movement of the body to activate the learners' act of learning.

Regarding the teachers and the use of dance and music. - They recognize the dance and singing contributions to EFL learning of children. However, it is an activity that the formal education does not practice very frequently due to:

"The dance requires unusual music and movement in the school context, which generates noise and disorder; and although it is not an expensive activity to implement, the teachers acknowledge that it creates difficulties for them with the school authorities, especially in the more traditional schools." E4.10.
"Dance undoubtedly promotes the generation of more relaxed learning environments. For its part, music has been frequently used in English classes, although in this case, the difficulty is in the selection of the ideal music; since the classes with a diverse population, minors have a wide diversity of preferences from a very young age." E5.19.

The didactic use EFL practices using dance allows better learning environments where children feel more confident, resulting in a more efficient learning process. It emerges as a learners' stimuli for more participatory and positive attitudes where kids learn faster and exercise their motor skills.

However, teachers should select the didactic materials in harmony with students' age and needs and evidence emphasized that teachers agree about the lack of balance between the activities of reading, writing, listening, and speaking in the teaching of English.

It is necessary to remind that most of the activities focus on reading comprehension and at times the traditional method that concentrates on learning grammar persists, causing children to lose interest in learning complex topics. Therefore, the authors of this work insist that teachers are permanent promoters of innovation for the improvement of education.

The authors recommend that the design of educational interventions that use music videos and that articulate images or movement with vocabularies in English are the most appropriate resources to work on this methodology. These are materials available on YouTube and other social networks that distribute free music videos.

Conclusion

Based on the literature review and the results obtained in this study, the authors declare the fulfillment of the proposed objectives presented in the introduction section. Thus, they concluded motivation for learning EFL increases in students when their EFL practice includes dancing and body movements activities. The results of the non-parametric Wilcoxon test confirmed this by evaluating the hypotheses for motivation and vocabulary acquisition before and after the educational intervention using dancing and singing as learning tools. Therefore, all the participants remember more new words in English as a foreign language. Total Physical Response generates more participatory learning classes and students feel stimulated and more active. When children practice English in a funny way, they do retain more information in the target language. Thus, dancing and singing as learning activities contribute positively to the children's acquisition of vocabulary.

The weakness of this research could be the size of its corpus which does not allow the results to be generalized. However, this work contributes to the decision of the teachers to introduce total physical responses in dancing and singing activities in the teaching of English to young children. This experience could open a work route to promote the teaching of English through TPR in Ecuador and in other nations of the region. Other teams of researchers in the field of the EFL are invited to carry out new studies in this line of research within the framework of public policies in this country.

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References

- Amutan, I., Sio, H., Jothi, S., Maruthai, E., & Ravindranath, L. (2018). Promoting Vocabulary Development Through Dance Education. Conference: International Conference on Education, Psychology, and Social Sciences. Thailand. In: https://www.researchgate.net/publication/324653444_Promoting_Vocabulary_Development_Through_Dance_Education
- Bermejo, J. M., Pulido, D., Galmés, A., Serra, P., Vidal, J., & Ponseti, F. J. (2020). Educación física y universidad: Evaluación de una experiencia docente a través del aprendizaje cooperativo. *Retos*, 39, 90-97. <https://doi.org/10.47197/retos.v0i39.77834>
- Bonnin, P., Alarcón, E., & Colomer, A. (2020). De la escena a las aulas: los artistas y la incorporación de la danza española y el baile flamenco a las enseñanzas generales (From the stage to the classrooms: artists and the incorporation of Spanish and flamenco dance into the general education). *Retos*, 40, 393-403. <https://doi.org/10.47197/retos.v0i40.83262>
- Buchanan, D. and Bryman, A. (2018). *Unconventional Methodology in Organization and Management Research*. Oxford: Oxford University Press (UK).
- Bueno, D. (2019). *Neurociencia aplicada a la educación*. Edit. Síntesis.
- Carballo, A. (2017). Neuroeducación de la neurociencia al aula. Integración: Revista sobre ceguera

y deficiencia visual, *Extra 70* (1), 1-15.

- Coşar, Z. & Orhan, R. (2019). Teaching kindergarten children English vocabulary by total physical response in physical education courses. *Journal of Physical Education and Sports Management*, 6(2), 70-76. DOI: 10.15640/jpesm.v6n2a8
- Doukakis S. (2019). Exploring brain activity and transforming knowledge in visual and textual programming using neuroeducation approaches. *AIMS neuroscience*, 6(3), 175–190. <https://doi.org/10.3934/Neuroscience.2019.3.175>
- Dubinsky, JM, Guzey, SS, Schwartz, MS, et al. (2019). Contributions of neuroscience knowledge to teachers and their practice. *Neuroscientist*, 25(1), 394–407.
- Englishitina, I. (2019). The use of total physical response (TPR) activities for teaching listening to young learners. *Journal of English Language Teaching and Islamic Integration*, 2(1), 113-120. <https://core.ac.uk/download/pdf/228759301.pdf>
- Hernando, A., Hortigüela, D., & Pérez, Á. (2017). Percepción de coordinadores de programas bilingües y docentes de Educación Física en inglés en secundaria sobre el proceso de implantación y desarrollo del bilingüismo en la Comunidad de Castilla y León (Perception of bilingual programs coordinators and. *Retos*, 33, 63-68. <https://doi.org/10.47197/retos.v0i33.54423>
- Ibrohim, A., Septianti, A., & Sadikin, I. (2018). Students' perception toward teaching English vocabulary through total physical response (TPR) method. *Project Prof. Journal of English Teaching*, 1(2), 145-156
- Joldersma, C. (2016). *Neuroscience and Education. A Philosophical Appraisal*. Reuters.
- Khakim, L., & Anwar, C. (2019). Improving students' vocabulary mastery through total physical response learning method. *Advances in Social Science, Education and Humanities Research*, 409(1), 506-512. DOI: <https://doi.org/10.2991/assehr.k.200225.110H>
- King, F. (2018). Music Activities Delivered by Primary School Generalist Teachers in Victoria: Informing Teaching Practice. *Australian Journal of Teacher Education*, 43(5). 48-59. <http://dx.doi.org/10.14221/ajte.2018v43n4.10>
- Kovacikova, E. (2018). Learning Languages through Music, Teaching Music through Languages. *Universal Journal of Educational Research*, 7(8), 1808-1813. <http://www.hrpub.org> DOI: 10.13189/ujer.2019.070819
- Kralova Z., Kovacikova E., Repova V., Skorvagova E. (2021). Activities in English classes inducing positive / negative emotions. *The Education and science journal*, 23(1). 136-155. <https://doi.org/10.17853/1994-5639-2021-1-136-155>
- Mariyam, N., & Musfiroh, T. (2019). Total physical response (TPR) method in improving English vocabulary acquisition of 5-6 years old children. *Tadris: Jurnal Keguruan dan Ilmu Tarbiyah*, 4(2), 257-264. DOI: 10.24042/tadris.v4i2.4071
- Nafkhatul, M. and Taranindya-Zulhi, A. (2017). Enriching vocabulary through total physical response (tpr) for young learners. *Britania Journal of English Teaching*, 1 (2), 1-11.
- Ningsih, N. (2019). The effect of song in teaching English. *Elties Journal*, 1(1), 1-12. DOI: <https://doi.org/10.24252/elties.v1i1.7413>
- Nouri, A. (2016). The basic principles of research in neuroeducation studies. *Int J Cogn Res Sci Eng Educ*, 4(1), 59–66.
- Nuraeni, C. (2019). Promoting vocabulary using Total Physical Response (TPR) method on early childhood English language teaching. *Journal Penelitian Humaniora*, 20(2), 67-79.
- Purnama, N. & Rahayu, N., & Yugafiati, R. (2019). Students' Motivation in Learning English. *Professional Journal of English Education, PROJECT*, 2(4). 539-544.
- Rueda, I., Acosta, B., & Cueva, F. (2020). Las Universidades y sus prácticas de vinculación con la sociedad. *Educ. Soc., Campinas*, 41(1), 1-20. Recuperado de <https://www.scielo.br/pdf/es/v41/1678-4626-es-41-e218154.pdf>
- Ruifeng, L., Qiaoyun, L., Jie, Z., & Lun, Z. (2021). A study on the evaluation method of foreign language classroom teaching process from the perspective of neuroeducation. *The International Journal of Electrical Engineering & Education*. <https://doi.org/10.1177/0020720920984686>
- Saehu, A., & Sariyati, I., & Syah, M. (2017) Total Physical Response Method for Mastering English Vocabulary. In 2nd International Conference on Sociology Education (ICSE 2017), pages 73-76. In: <https://core.ac.uk/download/pdf/234701395.pdf>
- Sari, D. F., Gea, E. R., & Fajrina, D. (2021). Autistic students learning English through Total Physical Response. *Studies in English Language and Education*, 8(1), 34-46. <https://doi.org/10.24815/siele.v8i1.18131>
- Shi, T. (2018). A study of the TPR method in the teaching of English to primary school students. *Theory and Practice in Language Studies*, 8(8), 1087-1093.
- Siregar, F., and Siregar. R. (2020) Students' Motivation in Learning English, *Fitri Rayani & Rahmadiny EEJ*, 8(2), 177-178. <http://jurnal.iain-padangsidempuan.ac.id/index.php/EEJ/article/view/3239>
- Susanti, R.D. (2019). The effectiveness of total physical response method in teaching english vocabulary to students with autism at inclusive school. *IOSR Journal of Research & Method in Education*, 9(6), 38-48. DOI: 10.9790/7388-0906053848

- Tobar, A. S. & Álvarez, O. (2018). Música como estrategia de enseñanza y comprensión lectora. Tesis de grado. Universidad de la Costa. En: <https://repositorio.cuc.edu.co/bitstream/handle/11323/2892/40993417-1123622338.pdf?sequence=1&isAllowed=y>
- Vishnevskaja, M., & Zhou, Z. (2019). The Impact of Using Music and Songs on Teaching EFL in China by Non-native English Teachers. *Universal Journal of Educational Research*, 7(8). 1808-1813. DOI: 10.13189/ujer.2019.070819
- Windi, R. (2017). The effectiveness of Total Physical Response Method in teaching English vocabulary to students with autism at SDLB Negeri 027701 Binjai. [Unpublished bachelor's thesis]. University of North Sumatra
- Yusuf, Y. and Rusdi, L. (2017). Listen, do, repeat, understand, and remember: Teaching English to very young children in Aceh. *Iranian Journal of Language Teaching Research*, 5(2), 113-132.
- Zhou, JX. & Shu, XY. (2017). The value and challenges of educational neuroscience: a dialogue with professor daniel ansari. *Global Educ*, 6(1), 3–10.