Gamification strategies and speaking fluency in EFL elementary students

Estrategias de gamificación y fluidez oral en estudiantes de primaria de EFL

Byron Antonio Marin-Pacurucu
byron.marin.27@est.ucacue.edu.ec
Universidad Católica de Cuenca, Cuenca, Cuenca
Ecuador
https://orcid.org/0000-0001-7991-2595

Antonio Lenin Argudo-Garzón
alargudog@ucacue.edu.ec
Universidad Católica de Cuenca, Cuenca, Cuenca
Ecuador
https://orcid.org/0000-0003-4741-5935

Byron Antonio Marin-Pacurucu; Antonio Lenin Argudo-Garzón

ABSTRACT

Students in public schools from Ecuador have problems regarding speaking fluency due to the poor development of EFL teaching strategies and motivation issues. Students need constant teacher input, which provokes demotivation and low academic results. Gamification based on connectivism, constructivism, PPP methods, and communicative focus was used to solve and correct class deficiencies. In this context, this article has as objective to analyze the effect of gamification strategies in improving speaking fluency in EFL elementary school students from "Benjamin Sarmiento" School. The methodology used was based on mixed methods following an explanatory sequential design. A pretest and a posttest were created to measure starting points and development. The final result was the creation of a proposal integrating gamification tools into their learning that help them improve class motivation, their speaking fluency, and their acquisition of a new language.

Descriptors: Educational games; teaching materials; open educational resources. (UNESCO Thesaurus).

RESUMEN

Los estudiantes de las escuelas públicas de Ecuador tienen problemas de fluidez en el habla debido al escaso desarrollo de las estrategias de enseñanza de la lengua extranjera y a problemas de motivación. Los estudiantes necesitan la intervención constante del profesor, lo que provoca desmotivación y bajos resultados académicos. La gamificación basada en el conectivismo, el constructivismo, los métodos PPP y el enfoque comunicativo se utilizó para resolver y corregir las deficiencias de la clase. En este contexto, el presente artículo tiene como objetivo analizar el efecto de las estrategias de gamificación en la mejora de la fluidez oral en alumnos de primaria de la escuela "Benjamín Sarmiento". La metodología utilizada se basó en métodos mixtos siguiendo un diseño secuencial explicativo. Se creó un pretest y un postest para medir los puntos de partida y el desarrollo. El resultado final fue la creación de una propuesta que integra herramientas de gamificación en su aprendizaje y que les ayuda a mejorar la motivación en clase, su fluidez oral y la adquisición de un nuevo idioma.

Descriptores: Juego educativo; material didáctico; recursos educativos abiertos. (Tesauro UNESCO).

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INTRODUCTION

Speaking fluency is a problem for every EFL teacher, and the strategies developed are usually the same: repetition and memorization. Likewise, it is well-known that children can learn through different kinds of games. However, this is not entirely developed due to multiple facts like teacher skills, structural conditions, large groups, etc. Notwithstanding the problems are significant, it does not mean that alternative strategies cannot be applied in class, and Gamification is one of them.

This method has the primary focus to allow students to learn while playing. A syllabus and lesson plans incorporate different games during classes, including the content or abilities that students need to know. However, Gamification is not only based on technological games; traditional games and sports are other important sources. EFL school students do not have the required language level due to the reasons explained before, and one of the abilities that are difficult to teach is "Speaking." When speaking, students get demotivated since they cannot produce fluent English, and strategies used by teachers are still repetition and memorization.

Nonetheless Gamification allow types of games, technology must be fundamental to catch students' attention. During the era of technology, it has been incorporated different digital platforms that allows class interaction with excellent efficiency, which promotes having a better preparation within the field of EFL teaching-learning. However, there is still a gap in the ability to use these technologies in our students' learning in Latin American countries due to teachers' pitfalls to find new strategies and manage platforms, smartphones or apps.

Besides this, students usually have a null motivation due to traditional repetition and learning behaviorally. It is urgent to change this model into a new one applying modern theories such as the use of Connectivism, Constructivism, PPP Method or a Communicative Focus, in which teachers must facilitate the necessary tools to the student so that they create a scaffolding process that allows them to build their knowledge, responsibly, creating autonomy in the teaching-learning process.

Under this context, this article shows the development of a Gamification proposal to establish the effect on EFL students in the area of speaking fluency. This is why this

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article was developed to answer the questions: What is the effect of gamification strategies on EFL students' speaking fluency in elementary school students from "Benjamin Sarmiento" School? What are the main difficulties in the teachers-students interaction during EFL classes? What is the relation between gamification strategies and EFL speaking skills development? What is the students' perception of gamification strategies to improve speaking fluency? What are the main differences between a group taught EFL speaking fluency using Gamification and another acquainted with traditional approach? Taking this into account, the main objective of this research was to analyze the effect of gamification strategies in the improvement of speaking fluency in EFL elementary school students from "Benjamin Sarmiento" School.

THEORETICAL FRAMEWORK

The creation of a proposal must be based on concepts. Therefore, a Gamification proposal to be implemented to improve its efficiency with EFL students who need to practice speaking fluency, should take into account fundamentals on constructivism, connectivism, PPP, blended learning and, obviously, Gamification. In the next paragraphs a brief explanation of these concepts are showed.

Constructivism is a theory that establishes students as knowledge creators rather than passively information assimilators. As people experience the world and reflect on those experiences acquired independently, they begin to build their representations and add new information to their already existing knowledge. The learning process occurs from mental processes such as active and internal intellectuals of each person here teaching is seen as a collaborative and shared process of a vibrant, dynamic, and integrating nature, that is, a personal reconstruction in which several agents and a group intervene (Suhendi, 2018).

The Theory of Connectivism is based on principles of the theory of chaos; as of complexity, complex neural networks, and auto organization, where learning is the formation of connections in a network, it is necessary to create connections between people, concepts, ideas, as different things that cause a particular innovation in the education of our students (Underwood, 2016).

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PPP means Presentation, Practice, and Production. It is a procedure, model, paradigm, or approach to teaching language components related more to the linguistic ability to speak; this procedure is simple since the teacher presents the target language that he wants his students to acquire as a new language. Then students are asked to practice it, first in well-controlled activities. In more unrestrained activities, students are allowed to produce the desired language. In a third or final stage, it is used different materials that facilitate said production. This process begins with knowledge input and ends with production. The intermediate part is practice; perhaps it is the most crucial learning point since the new knowledge is constrained individually (Ihsan, 2020).

Technology has reorganized how people live, communicate, and learn. Learning needs and theories that describe the principles and processes of learning should reflect the social environments underlying (Siemens, 2005). Virtual platforms make up an essential pedagogical support tool for teaching-learning and help share information. Devices have been implemented within the higher educational institutions and at the secondary education level. Virtual instruction in the teaching and learning process on the acquisition of knowledge of the English subject, since very few strategies are used in the teaching of learning to make knowledge of the English language teaching meaningful (Garcia Salinas, 2000).

Blended learning combines face-to-face with the non-face-to-face study. It makes it easier for students to contact the teacher and develop the skills of each student in education. The adaptation of these resources, face-to-face, and non-face-to-face, has been shown favorable when it comes to increasing autonomy in our students to help them learn a foreign language, gaining a more significant development of both linguistic skills, as well as of non-linguistic skills, here we can rescue the use of platforms, software, apps, etc. (Czerkawski & Lyman, 2016).

This innovative method called Flipped Classroom is a modern pedagogical model which has kept importance in recent years due to the need to change the traditional learning system in education, to be able to adapt to current conditions, above all, to the children of the 21st century. With the Flipped Classroom, you learn by doing and not by memorizing. It is rescued from this methodology that the student is a dynamic

and participatory actor in the teaching and learning process, which means that the teacher shares his knowledge and provides students with more active opportunities (Nouri, 2016).

The Gamification process is a learning technique that transfers the mechanics of games to the educational-professional field, in order to achieve better results. This technique serves to absorb knowledge, to improve some skill, to reward specific actions, is a term that has acquired enormous popularity in recent years, especially in digital and educational environments (Díaz-Ramírez, 2020).

LITERATURE REVIEW

Multiple authors have developed different types of research on Gamification related to learning and ELF learning. Some of them defined it as a series of characteristics that knowledge has associated with games. However, defining Gamification can be more complex since people think it is only related to video games, but it can be connected to different things (Landers, 2015). For example, Lyu explains the way to develop what it is called GOAT (Gamified communication Tool) to teach English to Japanese students (Lyu, 2018).

Other researchers have used Gamification to increase students' participation, motivation, and performance in the classroom with varying degrees of achievement, using the gamified learning scenario as an activity to encourage students. To try new things and avoid the fear of making mistakes (Cahyani, 2016). It is stated that students need practical and interactive experiences that stimulate their learning and skills; that is, they need to participate in the learning process actively; this is where game-based wisdom comes into the picture (Maloney, 2019).

It is been shown that games are one of the best techniques that can be used in classes to achieve the goal of teaching English as a new language because, while people have fun and play, they do not think that they are studying and start to learn vocabulary or grammatical structure in a natural, original way in an easy and fun way (Dicheva et al. 2015).

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Games motivate people to improve themselves since they increase interest in certain subjects, reduce the dropout rate among students, improve grades, improve their cognitive abilities, and reduce stress and depression within the learning process: Teaching and learning (Martí-Pareño et al. 2016). It is mentioned that modern pedagogical paradigms and trends in education, reinforced by technology, require implementing new approaches and techniques within active learning, thus allowing students to use specific mechanics, aesthetics, and game-based thoughts. To engage people, motivate action, promote education and solve problems (Mohandas et al. 2020).

Much has been argued that digital Gamification is a fun and enjoyable method to support English as a Second Language (ESL) learning and bridge the gap between student learning and educational practice; this systematic review presents a visual overview of the state of the art of Gamification for ESL in digital environments (Dehghanzadeh et al. 2019).

Gamification strategies help students enhance and get motivated towards language acquisition (Smirdele & Rigo, 2020). Some studies consider that Gamification depends on the specific characteristics of users so it is need to notice what kind of games can be useful for learners' interests (Welbers et al. 2019). For example, some students play video games regularly, so it is interesting to use them as part of learning (Zainuddin et al. 2020).

Gamification offers a way to make education more enjoyable and increase student productivity in language skills in an interactive way that gives them confidence and self-motivation to continue advancing in acquiring a second language through an entertaining way of learning (Redjeki & Muhajir, 2021). Gamification incorporates game elements in non-game environments such as schools, colleges, universities because it provides the opportunity to help these institutions solve these complex problems through dynamic and interactive tools (Lee & Hammer, 2011).

In Ecuador, Gamification has been recently incorporated into the academic field since some teachers cannot apply it because the vast majority is related to the management of new digital technologies. However, this process can not only be done with

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technology, it can also be applied with other materials, even with traditional games where teachers motivate and use a set of vocabulary according to the activity, thus the desire to reproduce and acquire a new language through a different integrating dynamic (Díaz-Ramírez, 2020).

Speaking skills are usually challenging in Ecuador's EFL classes, but some authors have created motivating learning environments by using games. In a school in Guayaquil-Ecuador, researchers implemented games in a class to develop speaking skills, and they found that learners can move from imitation to spontaneous production (Ramires, 2016).

Consequently, Gamification is created to guide students in learning a second language by adapting games by online resources or traditional games to acquire new knowledge or improve abilities such as speaking. Therefore, students have to adapt their cognitive structures to receive said knowledge more effectively in their development.

In this way, according to literature, Gamification has had a positive impact when a pedagogical design supports the game, since it has been shown that this methodology promotes various skills in students, making them more active and more problem-solving, applying games not only technologically but incorporating playful methods such as traditional games that help to make students' lives more entertaining, thus reaching a level of learning in an appropriate way regarding a new language, where they could speak fluently.

METHODS

To analyze the effect of gamification strategies in the improvement of speaking fluency in EFL elementary school students, it has been decided to implement mixed methods, specifically, as a type of design, has been chosen the explanatory sequential design since it has been noticed the necessity of determining quantitative data first to be explained by qualitative data later.

Sixty students were part of the investigation, male and female seventh-grade students from "Benjamin Sarmiento" School. They are 11-13 years old. Students were divided into Group A (Experimental) and Grade B (Control). The experimental group had

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English-speaking classes using online games and digital resources to use gamification strategies. The control group was taught English with regular procedures such as repetition and the traditional book. The teacher in both groups was the researcher.

Students took a pretest with multiple questions from the last course content in the first research stage. Every student had five minutes with the teacher. A rubric based on the CEFR was used. Students took a posttest with a similar structure after applying the gamification strategies with one group and the traditional approach with another. Finally, students took an open question survey with motivation, opinions, perception, etc. Classes were recorded, and the teacher kept notes about outstanding or exciting information.

It is essential to mention that school authorities have been permitted to apply tests and surveys. However, a consent form was filled in by students' parents. No names appeared in the academic article to be published. Students whose parents did not fill in the consent were excluded from the research.

STATISTICAL ANALYSIS

Project implemented

There was applied two software to report the results. The first one is Jasp, which allows determining the effect size (mean). The other is SPSS, which helped draw the error bars and determine the p-value (p) using the tests. An effect size coefficient accompanies a non-parametric test called Wicoxon to evaluate the Gamification's impact. The significance level used to prove the hypothesis of the effect of gamification strategies on EFL students' speaking fluency was 0.05.

RESULTS

The results are divided into three sections. The first one regards the Cambridge Speaking Rubric. The second one is the result of a survey applied to the students before and after the gamification project, which showed the interactive difficulties, students' perceptions, and gamification effects according to the students' opinions. The last section regards the impact of Gamification on speaking skills.

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Interaction difficulties

To determine the main difficulties in the teachers-students interaction during EFL classes, the Cambridge Speaking Rubric was applied in two student groups. This rubric evaluates grammar and vocabulary, pronunciation, and interactive communication. The results show that Group A has the lowest scores compared with Group B. It occurred in the three rubric indicators; they all had a similar effect, around 2.5 over 5 points (see Figure 1). Interactive communication is higher than the other two indicators; however, it is insignificant. Therefore, it was proposed to work in this group (A) to improve their score.
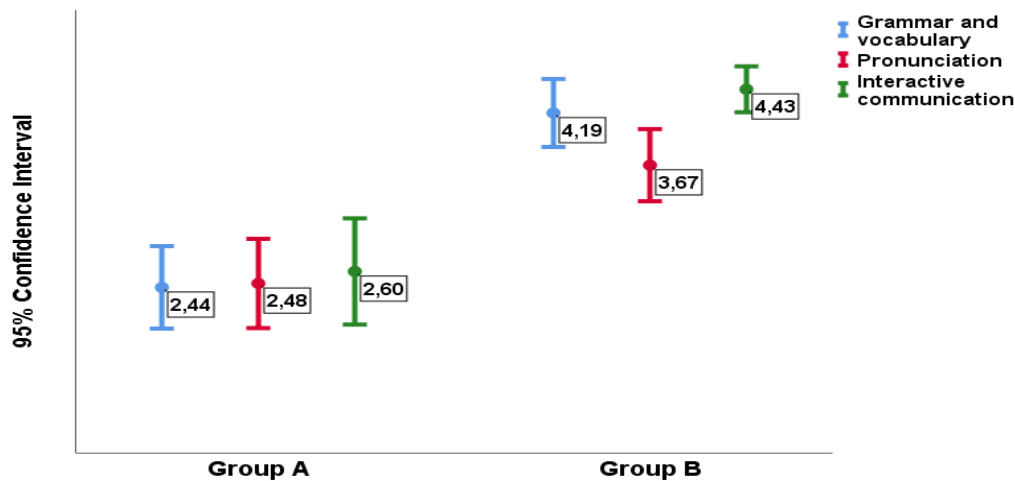
Figure 1. Error bar diagram of the Cambridge Speaking Rubric.
Source: Own elaboration.

The teacher asked the students' opinions about why they do not express themselves in English with their teacher. Most of the students said they feel that they are not ready to use English to communicate their ideas. They argue that they are ashamed of making mistakes. Some testimonies show their opinions.

1. When you ask me some questions, I am terrified of expressing my ideas in public.
2. The students manifest a limited vocabulary of English words that do not allow them to communicate in class.
3. They fear being teased by their peers and teacher for not knowing how to pronounce English words well.

In conclusion, shame expressed in public is the main difficulty in teacher-student interaction. This problem is related to English's low language skills and knowledge development.

Students' perception about Gamification

A survey was applied before and after the implementation regarding the students' opinions about the effect of Gamification on speaking skills and their general opinion about the gamification or platforms strategies. The Gamification or platforms activities were optional, so the results showed that not all the items had the same effect. According to the Mann-Whitney test, except for the last thing (related to the future tests), all the items changed significantly ($p<0.001$). Figure 2 shows that they prefer Gamification because the three highest increase in opinion has occurred in those items that mentioned this resource. For example, Gamification gives confidence (from 2.12 to 2.96), Gamification works like a hobby (from 3.76 to 4.76), and Gamification helps pronunciation (from 0.80 to 3.12). Contrarily, items related to the elevated platforms related to English learning as a foreign language have decreased their opinion level. For example, some grammar platforms are helpful (from 3.80 to 3.04), venues have a positive impact (from 3.84 to 1.40), and media are friendly to learning (from 4.40 to 2.88).

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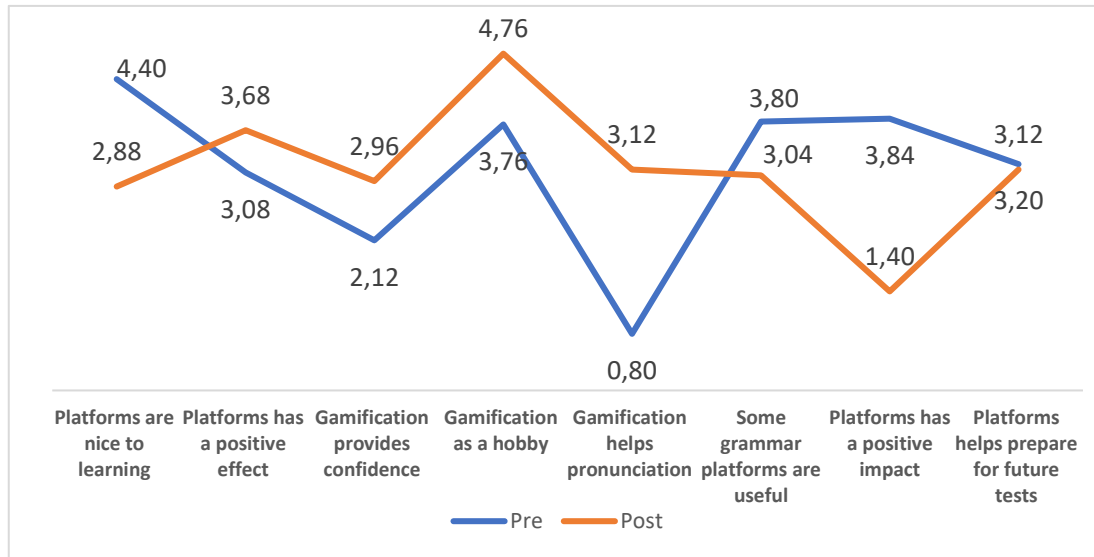
Figure 2. Lines diagram of the Gamification and platforms used to improve English as a foreign language.
Source: Own elaboration.

In conclusion, it is essential to highlight that the students prefer activities linked to the ludic area. All the items that consider Gamification increased their acceptance opinion level. However, the activities connected to elevated platforms have decreased their agreement with learning English as a foreign language.
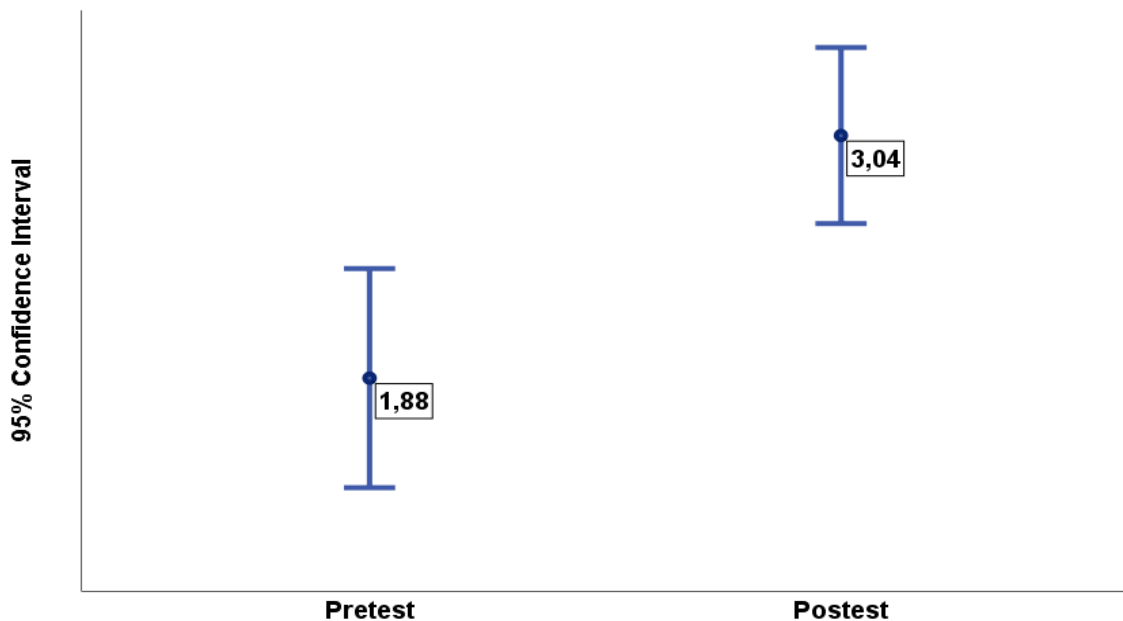
Gamification effect on speaking skills
An evaluation was applied to their language oral production before the program's implementation and after the performance to examine the main differences of EFL students' speaking fluency using gamification strategies.

The evaluation that was carried out with the students in a first phase only yielded diagnostic results that allowed us to analyze and place the students at their correct level of English to proceed with the next step of the work, where the same test after the students had already been in contact with digital educational platforms, it was possible to appreciate that the results were more encouraging since they became familiar with the interactive and playful didactics within the learning of English as a second language.

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The Wilcoxon test was conducted to verify if the improvement of the oral skill is significant (p<0.05). Figure 3 shows how the linguistic skill improved from 1.88 (equivalent to A.1.2) to 3.04 (equal to A.2.1.).

Figure 3. Error bar diagram of speaking skill before and after the implementation of the Gamification.
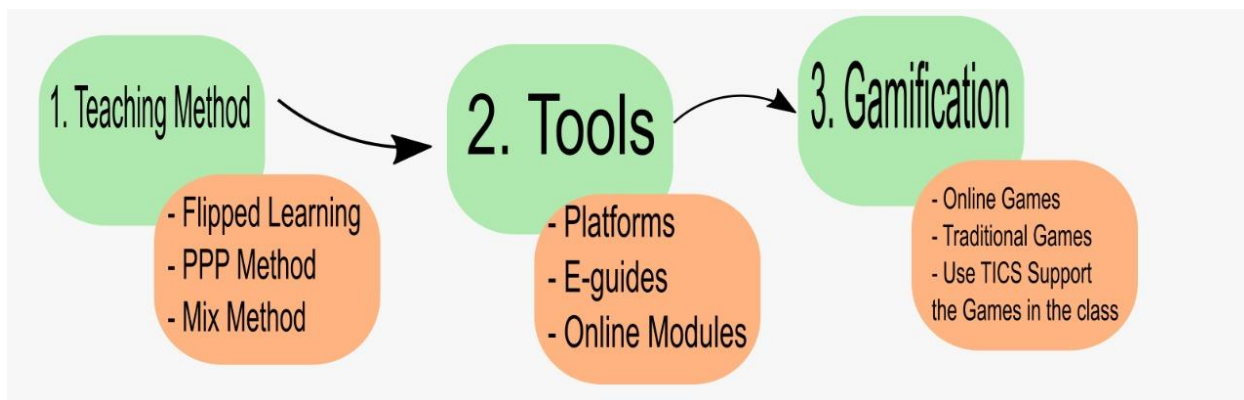**Source:** Own elaboration.

To answer the research question, what is the effect of gamification strategies on EFL students' speaking fluency in elementary school students from "Benjamin Sarmiento" School? It is possible to say that there is a high impact because the Rank-Biserial Correlation used as an effect size is 0.723.

PROPOSAL

The proposal scheme focused on three sequential processes, which is created to improve the management of second language acquisition through modern, dynamic and interactive methodologies in a mixed and interactive way.

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Figure 4. Process for Teaching and Learning English – Proposal Methodology.
Source: Own elaboration.

TEACHING METHODS

FLIPPED LEARNING: Students had to see videos and speaking exercises at home. During classes, teacher focused on getting students' production of target language.

PPP METHOD: As it was explained in the literature review and theoretical framework, PPP method have three stages that were used during classes. There was an emphasis on practice.

MIX METHODS: Mixed methods is an orientation that allows teachers to apply various techniques to improve any skills, by using different methods. This approach was useful to integrate Flipped learning and PPP.

GAMIFICATION

ONLINE GAMES: These games were functional to practice speaking at home or during virtual classes. Students practiced new vocabulary using online games such as:

i. AlphaBear
ii. Lingo Challenge
iii. ESL Fun Games Online

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TRADITIONAL GAMES: Physical, emotional, and social, a discussion and differentiation between traditional and virtual games are proposed. In both cases, they have the same purpose of helping the student learn dynamically playful as attractive a new specific knowledge. The following games were used in this proposal:

i. Boarding games
ii. Cards
iii. Puzzles
iv. Guessing games
v. Scramble
vi. Pictionary

USE TICS TO SUPPORT GAMES IN THE CLASS: Technology is part of our lives although it is difficult to accept it. Furthermore, our students have grown up with the Internet and network-connected devices in this modern age. They are considered digital natives or digital citizens of the new era. Its way of receiving and processing information and relating to the environment makes it essential to include technology in our classrooms. In addition, our commitment to training citizens of the future society forces us to adapt to these technological changes. In this way, students were able to get the most out of this new incorporation, taking into account that ICTs promote the following characteristics in the student, such as improving motivation, collaborative work, creativity, adaptation, and personalization, such as interactivity and above all the great interest it generates when learning new teaching methodologies through its exploration.

TOOLS
PLATFORMS: When using digital media in education, the functions such as the tasks assigned to the actors and factors that intervene in the educational event change. These media make it possible for transmission learning to be replaced by interactive

learning, making it more interactive, inclusive and dynamic. Among the platforms used in this proposal, it is possible to name the following ones:

i. Kahoot
ii. Woodward
iii. Quizziz

E – GUIDES: It was created an E-Guide for the course. Didactic guides in education acquire more and more meaning and functionality; they are a fundamental and vital learning resource that optimizes the development of the teaching-learning process by allowing the autonomy and cognitive independence of the student. For this reason, the present study was carried out to compile information about them in the context of language education, especially in English, and try to emphasize the importance of their use as an essential element for the work of the teacher and students. Today, these guides have been replaced from paper to digital, thus creating greater ease of access for students for their research and learning of various topics through the incorporation of these guides, thus transforming knowledge in a general and easy way.

ONLINE MODULES: Modules allow you to organize content to help control the flow of your course in the educational arena. Modules are used to organize course content by weeks, units, or different jobs in the organizational structure. Modules create a one-way linear flow of what students should be doing in a course. Today the modules have evolved from traditional presentations to electronic and digital ones. It can contain files in different formats, discussion forums on specific topics, personal and digital group assignments, innovative assessments, and modern learning materials. Module elements can be added to the course from the teacher's existing or new content containers within them. These modules can be organized with drag and drop functions that facilitate student selectivity within their teaching and learning process. One Online Module was created to help students optimize their learning.

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CONCLUSIONS

A structure of an educational program was designed to improve the acquisition of a second language through modern methodologies that help students be part of the class activity and learn to stop being just listeners to be participatory speakers. The literature and the theoretical framework showed that Gamification to improve speaking fluency have been effective not just to motivate students but to allow them improve considerably their speaking level.

The study was carried out through tests and a survey showed that students have problems regarding speaking fluency and that they are willing to have new learning methods to acquire language, and Gamification seemed to be the best choice.

Finally, it was implemented a manual of functions and processes based on Gamification, which help students be more productive in speaking fluently through modern methods and techniques aimed at the ludic activity. The proposal had the results expected since it was a different experience for students who needed an alternative for repetition and memorization.

FINANCING

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