Using Gamification for English Written Vocabulary Learning

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Abstract

This qualitative, action-research and descriptive research takes advantage of the versatility of gamification for learning English vocabulary. Its objective is to analyze the incidence of the implementation of the gamification technique for the learning of English vocabulary in 4th grade students of the Santa Cecilia branch of the Institución Educativa Moderna de Tuluá. The study was developed in a group of 35 students and for its realization an intervention of 10 didactic sequences with gamified activities was implemented. The main result was that the students achieved 86% performance in the acquisition of the vocabulary studied, thus developing the ability to recognize an important set of words in basic phrases, as well as to identify useful questions and answers for an everyday conversation. Likewise, they were able to develop their ability to memorize more words and relate alphabetic symbols and sounds.

Key words: Gamification, English, learning, vocabulary.

1. Introduction

Studying foreign languages such as English is of utmost importance worldwide, not only for the individual, but for a community in general. Given that, for Latin American countries, learning English is a priority, considering that handling a language is essential for people to be able to develop in education and business, as well as in social environments; since learning a foreign language increases economic competitiveness and the possibility of access to better job offers.

In Latin American countries, there is a low level of linguistic proficiency in foreign languages, which limits many opportunities for economic development. In order to improve this situation, it is essential to analyse gamification and its impact on English vocabulary learning that can determine the achievement of positive results in the development of competencies in a foreign language. The research describes and analyses factors to be considered, so that, a given community can strengthen the linguistic competence of a foreign language such as English.

The first of these study factors, which can be identified as a problem, corresponds to the low level of English that prevails in the Latin American region, since it is evident that most nations exhibit worrying figures related to the level of performance in English. According to the report of the English Proficiency Index (EF EPI), from the global language training company Education First, Colombia is in the low proficiency category, occupying 77th place out of 111 countries worldwide, which places it only above Ecuador, Mexico and Haiti.

Unlike countries such as Argentina, which is in the high proficiency category, Costa Rica, Dominican Republic, Uruguay and Brazil are in the moderate proficiency category, thanks to great efforts to improve their population's level of English (BBC News, 2018). The same figures are presented by the Colombian magazine *Semana* (2021), which published an article where a ranking proposed by the educational firm called EPI is exposed, which also reports that Colombia is among the low proficiency and very low proficiency levels.

In this way, if Colombia wants to gets better results in the region, it must reflect on its educational process according to the study of English; for this purpose, the Saber 11° tests provide relevant information on student learning and level, which can be useful for carrying out intervention and improvement plans regarding their results.

Another object of study in this research corresponds to the foreign language teaching process, which is

expected to employ pedagogical strategies that generate interest in students, aiming for greater success in expected outcomes. Hence, the methodologies implemented by teachers should be creative and practical. One of the proposed approaches is the technique of gamification, understood as a suitable tool to achieve the goals of teaching English as a second language.

Firstly, it is important to highlight that gamification is a technique originated in the business world, with the term first appearing in 2008. According to López (2018), "Rajat Paharia was the first person to coin this term and defined it as the technique used to motivate people through data to help them reach their full potential" (p.10). This led to the need to apply this technique for practical purposes. Years later, this technique started being applied in fields other than business, allowing for different interpretations of its definition, one of them relates to the use of games in non-playful contexts becomes more relevant. Werbach and Hunter (2012) define gamification as "the use of game elements and game design techniques in non-game contexts" (p.11).

This definition is supported and complemented by Teixes (2015), who describes gamification as "the application of game resources (design, dynamics, elements, etc.) in non-playful contexts in order to modify individuals' behaviors, acting on their motivation to achieve specific objectives" (p.18). By contextualizing the proposed definitions with the problem addressed in this research, it is evident that gamification is a technique that can be used to change the landscape in educational contexts.

The process of learning a foreign language is a complex phenomenon to analyse, as it involves considering internal and external factors that have an impact on this process. Authors like Roncancio and Buitrago (2018) state that among these internal factors, motivation stands out, which is determined by the desire to learn and use a foreign language. Aptitude also plays a role, characterized mainly by the predisposition to study the language. Roncancio and Buitrago, add that another important factor is personality, as individuals who are extroverted or open have a higher likelihood of learning quickly.

Regarding external factors, the authors mention socio-demographic level, as there is a close relationship between learning and social class, which influences academic results, especially in terms of access to technology and associated life expectancy. This is a cultural issue, highlighting the importance of the education system in generating a different outlook for students regardless of their socioeconomic level.

It is essential to analyse the students' learning process and carefully examine each factor that hinders its proper development. It is urgent to implement innovative techniques that distance students from traditional education and monotony while promoting self-learning. Unfortunately, these tools are not considered in Colombian educational institutions, mainly due to the lack of necessary resources in public schools, knowledge or teacher training, time constraints, and motivation from both teachers and students.

It should be emphasized that if a satisfactory level of communicative competence among students is desired, it can be highly effective to start at an early age with one of the skills. Ensuring that students enter secondary school with a considerable vocabulary of the target language would allow for more elaborate classes and would have a positive impact on results.

The Institución Educativa Moderna de Tuluá, Valle del Cauca is located in the urban area of the municipality. It is an institution of mixed character and provides services for preschool, elementary, middle school, academic and technical levels.

This institution presents quality purposes focused on the application of ethics, defined from the social, financial, technological and institutional perspectives, following the regulations that allow it to act within a legal and formative framework.

It is highlighted that I.E. Moderna de Tuluá has as its main objective the development of basic, citizen and general labor competencies, in order to contribute to social improvement and the students training in the development of the region and the country. At the same time, it highlights its mission, which seeks to form people committed to life and the environment, through active methodology for the development of skills and abilities.

In the year 2025, this institution expects to be recognized for providing a comprehensive and inclusive education, leading in sports, cultural and scientific aspects, allowing its students to respond to the challenges that society demands.

2. Objectives

Main objective:

To analyze the incidence of the implementation of the gamification technique for the learning of English vocabulary in students of the 4th grade of the Santa

Cecilia branch of the Institución Educativa Moderna de Tuluá.

Specific objectives:

a. To diagnose the English vocabulary of the students through a test.
b. To design a didactic sequence incorporating gamification for the acquisition of English vocabulary in the students of the 4th grade of the Santa Cecilia branch of the I.E Moderna de Tuluá.
c. To implement a didactic sequence that includes gamification activities for the improvement of the vocabulary of the 4th grade students of the Santa Cecilia school of the I.E Moderna de Tuluá.
d. To evaluate the students' progress in English vocabulary through a test.

3.   Methods

This section describes each of the aspects that allowed the analysis and understanding of the information obtained in the study. These aspects include the research approach, scope and the research type. The different data collection instruments are described, followed by the analysis of results and discussion.

To achieve the proposed objectives, the research approach for this study is a Qualitative approach. This approach is characterized for providing depth to the data, interpretative richness, contextualization of the environment, details and unique experiences (Hernández & Baptista, 2010). One of the main characteristics of this approach is observation through the collection of non-numerical data, which is analysed to answer research questions and understand theories, concepts, experiences, and behaviors. This approach is useful for the purposes of this research, as it aims to observe the change or effect on the English vocabulary level of 4th-grade students at Santa Cecilia campus after being intervened with the gamification strategy. The study design selected for this research is the descriptive, considering that "descriptive studies allow for the detailed examination of situations and events, that is, how a certain phenomenon is and how it manifests, and aim to specify important properties of individuals, groups, communities, or any other phenomenon subjected to analysis" (Hernández & Baptista, 2010). It should be mentioned that this type of research aims to analyse and describe the consequences obtained from implementing

gamification techniques for English vocabulary learning. Considering that the general objective of this research is to find strategies that allow the dynamization of the vocabulary learning process in the target population, the appropriate method is action research, which focuses on educational praxis and improving problems in social contexts. Considering the goals of this research, this method seeks to investigate how gamification impacts the English vocabulary level of students at the Santa Cecilia Campus of the Institución Educativa Moderna in Tuluá.

To fulfill the implementation of this research considering the methodological process, different data collection instruments are described to achieve each of the proposed objectives. Among them, a diagnostic test was implemented to revise the prior knowledge of the students regarding specific vocabulary. The second instrument used in this research is a gamified sequence of didactic activities. For this purpose, a "lesson plan" format designed by The Cedar Grove Middle School is used, which is composed by different sections and stages.

It is important to mention that in order to develop the activities proposed in this lesson plan, as well as the thematic organization proposed in each of these sequences, the use of different documents was necessary to structure the intervention process at this stage. In this regard, the first of these documents used was the Humanities curriculum plan of I.E Moderna de Tuluá, the Suggested Curriculum, as it provides useful tools for planning and formulating achievable objectives and goals, and the graphic book called "A1 Movers Word list picture" taken from Cambridge Assessment English.

It is essential to mention that some instruments to evaluate the process were necessary. For instance, a vocabulary test designed by the researching teacher, considering the observations made by the advisors.

4.   Results

The results of the initial test are described, which aimed to diagnose the English vocabulary of the 4th-grade students at Santa Cecilia campus in the Moderna School of Tuluá.

According to the initial test results observed from the group of evaluated students, they achieved a 52% of effectiveness in the test. This means that, the group knows about 20 to 21 words out of a total of 40

questions in the test. The results also show that the group as a whole does not recognize 48% of the words proposed in the evaluation, which corresponds to an average of only 19 words.

When analysing each of the performance levels that determine the students' proficiency level, it can be observed that only 9 students managed to achieve an excellent performance. To be more specific, 7 males and 2 females reached this level. It is worth mentioning that these students stand out as the top performers in the group overall. During the test, they demonstrated great interest and competitiveness. Furthermore, it should be added that this result indicates that the students fully identify words related to familiar topics. Also, due to what was mentioned earlier, the students recognize short English phrases and words in books and places within their school environment. These students can perfectly match illustrations with simple sentences and answer basic questions. It should be noted that these students can transcribe words that they understand and frequently use in the classroom.

An outstanding performance was demonstrated by 21 students, indicating that the majority of the group knows between 20 and 30 words proposed in the evaluation. It stands out that 15 females achieved this performance level compared to only 6 males. Students classified with an outstanding performance, despite the low instructional intensity and the limited or lack of didactics used for teaching English, their positive attitude and interest in the subject have been significant factors in demonstrating this performance. It is evident that, according to the mentioned assessment table, these students are capable of recognizing words that are familiar to them, not only individually but also in short phrases in books, advertisements, and spaces within their context. Students in this performance level can relate images to simple sentences and respond to basic questions. An important factor to highlight is the low number of students classified as acceptable, which was only evident in two students, one male and one female. It can be seen that none of the students are classified as insufficient, demonstrating that, although the result could be better, this group has undergone a vocabulary learning process that allowed them to acquire a minimum number of words. Relevant aspects are highlighted, such as the dominant percentage of individuals classified as outstanding, which represents 52.5% of the evaluated group. Likewise, the null percentage of students in the insufficient performance level is noteworthy. However, the modest number of

students in the excellent performance level, which is around 26.4% of the group, draws attention, indicating the need to intervene with the group to expand the range of this performance level among the students.

Next, the results of the evaluative test applied to the 4th-grade students at Santa Cecilia campus of Moderna School in Tuluá will be explained. In order to understand the explanation of these results it should be considered this analysis has been done by the exam´s stages. It is observed that none of the examinees fall into the insufficient performance category, as well as the acceptable performance category. Some students are accounted for in the outstanding performance category, specifically 7 students. For the excellent performance category, the optimal result achieved by the participants is evident, as 25 of them managed to obtain between 9 and 10 correct answers in the questions proposed in the Part 1 of the test. When combining the results of the students who achieved an outstanding and excellent performance level, there is 100% of effectiveness. Considering this stage, students had to remember if the images corresponded to the proposed words, it can be affirmed that they demonstrated a better ability to memorize the vocabulary studied during the sequences and its immediate identification. This had an impact on the learning of the vocabulary, incorporating new terms into their personal set of words.

In the second section is observed that the behavior of the students is different from what was evidenced in the first stage. This can be noted as in the acceptable performance category, only 3 students managed to position themselves, thus achieving minimal recognition of some words. However, this result improves slightly with the students who were able to achieve outstanding performance, as a total of 16 students fall into this category. 13 students achieve excellent performance. When combining the last two performance categories, an effectiveness of 59.3% can be indicated. This result demonstrates that the student community encountered some more difficulty in relating the words, leading to a reduction in the outcome compared to the previous stage. However, the result remains optimal considering that the number of students in the acceptable performance category was minimal, and no one fell into the insufficient performance category. This exercise allows the identification of a notable development in the Decoding category, since students who achieved outstanding and excellent performances demonstrate

the ability to link the images with each word appropriately.

For the third section, a slight change in the students' performance can also be observed. It can be said that the result was similar to the previous one in general terms. In this regard, when expressing the behavior quantitatively, only one student falls into the acceptable performance category, 17 students achieved an outstanding performance, and 14 students achieved excellent performance. It can be concluded that there was an effectiveness of 96.8%, demonstrating that students can identify the studied vocabulary regardless of having multiple options to choose from. They can also identify the question associated with the image, showing that they can use the image in a given context. Referring to the categories in this exercise, students demonstrate a significant improvement in the Vocabulary category, considering the nature of this exercise. The students show their ability to understand the spoken or written language and develop their reading comprehension skills.

In the fourth section, there is presented a question and an image related to the question. The options to choose from are the studied words, which are placed inside a box, and the student must select the correct word and write it below the image. When analysing each performance level, it can be observed that no student falls into the insufficient level. Therefore, the effectiveness of the applied strategies is confirmed. There is a low number of students in the acceptable level, presenting only 4 students. 18 students achieved an outstanding performance, and 10 students achieved an excellent performance, resulting in a percentage of 87.5%. The positive effect of implementing these sequences is evident, as students understand a question and, based on that, they know the vocabulary to solve that question, using the images in the test to help them. This demonstrates not only the acquisition of words but also their decoding process.

The progress achieved is highlighted, considering the performance alongside the evaluative test and the categories. Advances in the micro- skill of vocabulary are emphasized, since an advance in the learning of the terms studied in the interventions is appreciated, which now allows students to identify and recognize words, especially in simple sentences, as well as their transcription. It is also evident how the students improved their ability to retain the words under study, thus developing the memory micro-skill, allowing progress in the use of words in different contexts, such

as identification of vocabulary in songs, videos and association of written words or their spoken equivalent. When decoding, it can be seen how the students developed the ability to string words together with their corresponding pronunciation or image, simultaneously writing the correct spelling of the words and using them in simple sentence construction exercises.

It is initially noted that one of the mentioned results was the effect of gamification on the English leaning motivation among the students. Zichermann and Cunningham (2011) state that "gamification is a process that relates to player thinking and game techniques to engage users in problem-solving." The main objective of this technique is to increase willingness and motivation towards the game.

The results showed that students improved their vocabulary memorization ability through the use of gamification, especially through word identification, which allows them to identify simple words in short phrases. Osorio et al. (2019) highlight in their research entitled "Gamification applied in the classroom as a methodological strategy and its influence on oral expression in 4th-grade students at Fray Martin de Porres School" that in the initial part of their implementation, 3 out of 15 students who took the initial speaking movers test showed positive results in using words and phrases related to personal introductions, as they progressed from a level ranging from 0 to 3 according to their measurement scale. The authors also mention that the students' results were influenced by the gamification, which was reflected in the use of words related to greetings, farewells, personal introductions, and memorization of new words introduced in topics such as numbers from 1 to 20, food, fruits, and vegetables. Cordero and Núñez (2017) point out that "the use of gamification in education motivates students, increases learning retention, improves transfer of learning, acquires knowledge, and instructs rapidly" (p.273).

There is an increase in vocabulary learning as 17 students achieved outstanding performance, while 14 students achieved excellent performance, resulting in a total of 96.8% of students placed in the English proficiency level ranging from A1.1 to A1.2. In other words, students are now able to respond to basic questions related to family and acquaintances, as well as transcribe words they understand and frequently use in the classroom. This result is similar to those obtained by Bustillo et al. (2017), where positive

results were obtained in vocabulary learning. According to the numbers obtained in the initial test, only 50% of the students were able to identify vocabulary related to daily routines. After using an application that applies the gamification technique, the positive results increased to 83%. Rodríguez and Foncubierta (2014) state that this technique "has a significant influence on the learning process since, apart from increasing motivation, gamification allows for addressing dispersion, inactivity, lack of comprehension, and the feeling of difficulty" (Rodríguez and Foncubierta, 2014, p.2). The acquisition of a specific set of terms is facilitated.

The result regarding the decoding process showed that 56.2% of the evaluated students achieved an English level ranging from A1.1 to A1.2, demonstrating their ability to understand and identify vocabulary through images, as well as their reading and writing agility. Vesga et al. (2021) in their research titled "Pedagogical strategies mediated by a gamification resource for strengthening the English component in fifth-grade students" highlight the fact that the gamification strategy had an effectiveness rate of 50% in terms of reading comprehension and listening, demonstrating the progress the students made in understanding short phrases or texts.

Rodríguez and Foncubierta (2014) affirm that "gamification allows for improvement in the acquisition of new skills and knowledge by students, allowing the process to go beyond traditional methods and approach experiential learning" (p.02).

5. Discussion

The research findings revealed that, following the implementation of gamified instructional sequences, students showed significant improvements in vocabulary retention, identification, and usage in simple sentences. Moreover, notable progress was observed in reading micro-skills, particularly in memory and decoding. Students became more adept at linking words with their corresponding pronunciation and correct spelling, enhancing their ability to use these words in different contexts.

Gamification not only improved vocabulary acquisition but also increased student motivation to learn English, as reflected in the improved post-test results. Zichermann and Cunningham (2011) highlight gamification's effectiveness in engaging learners by integrating game-thinking and problem-solving techniques, which helps increase motivation and willingness to learn.

Other studies support these findings. Osorio et al. (2019) noted that gamification positively influenced students' use of new vocabulary, such as greetings and personal presentation phrases. Similarly, Bustillo et al. (2017) reported a marked improvement in students' vocabulary acquisition after using a gamified learning app, with identification of routine vocabulary increasing from 50% to 83%. This highlights the effectiveness of gamification in fostering vocabulary learning and comprehension, particularly in areas like reading and listening, as Vesga et al. (2021) also observed in their research on gamification in primary education.

In conclusion, gamification as a pedagogical strategy boosted vocabulary learning and enhanced student motivation and engagement, making the learning process more dynamic and experiential, as noted by Rodriguez and Foncubierta (2014).

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