

Level up your lexicon: Exploring english vocabulary proficiency through gamification

Eleva tu nivel de léxico: Explorando el dominio del vocabulario en Inglés a través de la gamificación

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1. INTRODUCTION

In the process of language learning, vocabulary plays a crucial role and represents a major challenge, as it can hinder effective communication and comprehension in the educational setting. According to Setiawan and Wiedarti (2020), "Vocabulary can be defined as many words used to communicate with other people. Many words also have special connotations which provide different meanings" (p.85). This means that vocabulary is not only related to words but also to their meanings, which are considered essential and important elements for learners to understand the overall content of spoken or written texts in the educational context.

However, most of the students have not improved their English language proficiency, and this is affected by various factors that limit learning and do not complete the required level in the English language, including vocabulary. As a matter, through teaching practice in a public school, the researcher detected that most students have problems understanding or expressing their own ideas, and this is due to a lack of vocabulary. That is, they have serious difficulties using the right words in certain contexts because they do not know the meaning, form, and use of words, which was supported by other researchers who also found that their students were not able to understand or express (Elyas & Alfaki, 2014; Wilkins, 1972; Mutalid et al., 2014).

In the context of the mentioned problem, the researcher set out to determine vocabulary improvement through the application of new strategies. One of the strategies considered important and appropriate by the researcher is the use of gamification, as it encourages constant practice and positive reinforcement, which can improve vocabulary retention and mastery in the long run. Therefore, the present study aims to measure the effectiveness of gamification in English vocabulary learning.

Consequently, the integration of gamification techniques for English vocabulary learning is of significant importance. In fact, previous studies have identified that the incorporation of gamification strategies not only facilitates the creation of diverse vocabulary-oriented games, but also enriches the educational environment,

thus enhancing the overall English language learning experience. In addition to this, it is worth noting that “Gamification or gamified learning has paved its way and gained proliferating popularity in EFL education, particularly in the context of vocabulary learning, which is perceived to have a pivotal role in language learning” (Fithriani, 2021, p. 146).

Due to the aforementioned, then general objective that was established to carry out this research work was to improve English vocabulary learning by using gamification among high school students at a public institution in Loja, during the school year 2023 – 2024. Based on this objective, the researcher set out to validate the effectiveness of using gamification in improving English vocabulary learning.

2. THEORETICAL FRAMEWORK

Gamification

Gamification is a primary strategy used by teachers to encourage students’ motivation and participation within the classroom. According to Khaleel et al. (2020), this strategy refers to the application of game elements to the educational fields to make the teaching-learning process more entertaining and interactive. In that regard, Kapp (2012) describes it as an important and powerful tool to attract students’ attention and interest. From the above concepts, it can be concluded that gamification is a primary technique to promote fun and innovative learning.

Many authors mention that gamification is closely related to educational or entertainment games, which are physical and mental activities played through rules. To Bigdeli et al. (2023), “Games are product-oriented activities that progress based on predetermined rules and mostly comprise centralized decision-making” (p.1). Given this definition, games can be described as useful resources for enhancing students' thinking skills and facilitating their learning.

Elements of gamification

Within teaching, gamification has been divided into game mechanics, dynamics, and aesthetics in order to develop students’ language skills efficiently and appropriately. This is corroborated by Lu and Ho (2020) who summarize the three components through the MDA framework (Mechanics, dynamics, and aesthetics)

which comprises the rules, points, and badges for active players' engagement. Together, these elements allow teachers to design their classes with innovative and interactive activities.

Game mechanics. The first element refers to the system of rules that governs the players throughout the game. As Edusei (2022) claims "Game mechanics are rules that dictate how players achieve the game goal, interact with other players, and, in digital games, how the system responds to the actions they take" (p.5). Therefore, these are considered fundamental resources for motivating students to dynamically engage within the teaching-learning process.

In turn, game mechanics include elements such as points, badges, leaderboards, levels, and challenges that help teachers to arouse their students' interest, motivation, and curiosity. According to Ofosu-Ampong (2020), "Game components such as leaderboards, badges, points systems and levels that translate inputs to outputs are game mechanics" (p.115). Thus, these aspects help participants to be active learners and build their own knowledge.

Game dynamics. The second element of the gamified system refers to the different actions that users must do to play the game effectively and correctly. This is supported by Tao et al. (2021) who define game dynamics as "the various ways the player interacts, makes choices, and plays the game. Examples of Dynamics include resource management, time pressure, cooperation, collection, building, or other strategies" (p.3). Undoubtedly, the dynamic part is a key element since it allows students to have clear instructions about how to develop the game without problems.

Game Aesthetics. As noted by Tao et al., (2021), this game feature has to do with the emotional reactions that a participant has when playing a game. In this perspective, Schwarz et al., (2020) listed 8 kinds of game aesthetics that can make players experience different types of reaction such as Sensation, fantasy, narrative, challenge, fellowship, discovery, expression, submission.

Benefits of Gamification in Education

Interestingly, Lampropoulos et al. (2022) reported some appealing data of the effect of gamification in education going from generating a new class setting to foster technology usage. In their words, they referred to this approach as a peculiar way to influence the development of student-centered classrooms, assist educators in their practice, and pave the way for seamless integration of technology-enhanced learning. Accordingly, Mei and Yang (2019) manifested that the application of gamified teaching can enhance environmental awareness and language learning experience. In consequence, gamification affects positively in enhancing the immediate learning environment as well as the way in which the participants (players) communicate.

Moreover, several studies have listed many other benefits and contributions of this methodology in Education. For instance, Pektaş and Kepceoğlu in 2019, after reviewing several authors, they came to the conclusion that transforming teaching to gamified teaching can 1) nurture students' motivation to persistently pursue learning objectives. 2) Engage learners into teaching instruction without inducing monotony or imposing rigid directives. 3) Empower participants to undertake new challenges without apprehension regarding real-life consequences. 4) Foster collaboration and the development of social skills essential for teamwork, decision-making, and problem-solving. Finally, gamification provides students with timely progress feedback. This last benefit allows them to observe and correct their mistakes as they perform the task which heightens their learning experience.

Gamification in teaching English language.

Studying the gamification phenomena into language teaching and learning has recently become a compelling subject-matter for many researchers (Jun et al., 2020). For instance, Alomair and Hammami (2019) argued gamification can be highly adaptable to work on language acquisition in this contemporary context. As proof of this statement, there is the experimental work conducted by Yukselturk et al. (2018) with a group of 62 first-year university students in which gamified applications were implemented to nurture the development of English skills. According to this study, it was found that students' task-focus increased, keeping their concentration

on language concepts during longer time-lapses. Moreover, it fostered students' creativity and active use of the language in comparison to the traditional teaching method of lecturing.

Importance of applying gamification for teaching vocabulary.

The significant role that gamification plays in vocabulary development falls in its characteristic to making language concepts more comprehensible and interesting (Castillo-Cuesta, 2020). In other words, during gamified classes students begin to acquire vocabulary not because they are asked to, but because they enjoy it (Fithriani R., 2021).

This provides a grasp on how gamification boots students' interests by allowing them to explore an anxiety-free learning environment while improving their vocabulary. Moreover, this methodology expands vocabulary instruction in regards to learning activities. For instance, students can begin using their smartphones not only for social media but also to download apps that can help them in vocabulary learning. This can help them greatly to keep in contact with the target language vocabulary even when they are not inside a formal class environment. Besides, through gamification applications teachers can monitor their students' progress while showing them educational usages for their mobile devices (Panmei & Waluyo, 2023). Finally, in the research by Zou et al., (2019) about the impact of using gamification in vocabulary instruction in which they analyzed 21 research papers on the matter, they concluded that "(1) digital games promote effective vocabulary learning; (2) interactions in game environments are conducive to vocabulary learning; (3) game-embedded multimedia facilitates vocabulary learning; and (4) over-specified vocabulary information is better than isolated or minimally specified information." (p. 22–23). Within this framework, there are a plethora of scientific articles which have studied numerous applications to enhance vocabulary learning, some of these are explored in the topic below.

Games to Teach Vocabulary

Within the vast body of literature on gamification and vocabulary enhancement, some applications that have been found beneficial to develop EFL vocabulary have

been, 1) wordwall (Çil, 2021), Baamboozle (Hieu, 2021), Bingo (Syukron & A.E, 2022), and Board game (Quinchuela Andrade, 2023).

Wordwall. As noted by Çil (2021), Wordwall.net is an educational and entertaining website that offers a variety of interactive and individual game options, including information matching, picture matching, quizzes, wheel of fortune, puzzles, and more. These games are specifically designed for vocabulary practice. Users, typically teachers, have the ability to create their own games by utilizing pre-existing templates and adding their own content, such as words and images. Alternatively, teachers can also utilize games that have been created by other educators available on the platform.

The practical study carried out by Hasram et al. (2021) on the effects of this application on English vocabulary among year 5 pupils found out that according to the pre-test and post-test scores, students' vocabulary improved after the utilization of WordWall. In their study, they also reported that incorporating mobile phone applications for language educational purposes enhances students' comprehension and vocabulary understanding. They also argued that vocabulary elements were presented in the form of images, accompanied by audio or video recordings which promoted the correct pronunciation of the words. Finally, the wide range of game options within the application facilitated engagement through repetitive practice, leading to a more profound understanding of the vocabulary and an increased ability to easily recall correct spelling.

Bamboozle. Utilizing this software, educators have the opportunity to use it as a means to incorporate various English teaching games into their instruction. These games involve dividing the class into smaller groups, typically two or three, fostering a competitive environment where each group strives to emerge as the victor. The inclusion of visual elements within the game not only facilitates children's comprehension but also enhances their ability to retain the information over an extended period. Consequently, this software offers a time-saving advantage for teachers, as it eliminates the need to invest excessive effort in creating an active and engaging learning environment specifically tailored for children (Hieu, 2021).

In the quasi-experimental research conducted by Arequipa Tandalla (2022), she studied the effectiveness of bamboozle and some other digital games on EFL vocabulary learning among 58 fifth-grade Ecuadorian students divided into a control and an experimental group. In this study, a web 3.0 survey, a structured survey, a pre-test and post-test, and a TAM questionnaire were implemented to both assess students' vocabulary prior and after the intervention and document their perceptions towards the use of the digital games utilized. Moreover, the study used the Group Statistics and Independent-Sample T-test to interpret the difference between students' scores while the SPSS Statistics served to process students' reactions on the implementation of digital games to improve their vocabulary. The P-value being $p=0 < 0.05$ showed that bamboozle and some other digital games positively influenced the development of EFL vocabulary. Thus, the researchers concluded that digital games such as bamboozle can engage learners in wordplay due to their interest in gameplay mechanics that include a variety of learning ways.

Bingo. It is a game that allows a wide range of benefits in learning languages such as English, especially in learning vocabulary. Bingo, a game that can be adapted in a variety of ways to practice vocabulary. It is a fun and participatory way to reinforce learning. It also encourages attention, concentration, and interaction among students. This is supported by Syukron & A.E (2022) who says that "Games like Bingo provide an interesting and motivating way to review and reinforce vocabulary words" (p.173). Without a doubt, the game of bingo is an effective and motivating tool that allows students to strengthen their English vocabulary learning through active participation and interaction among the students.

Board game. The "board game" is a board game that combines several aspects of gamification. That is, a fun, standardized, and visually appealing game that encompasses content, design, players, and game mechanics. Typically, players move pieces on a pre-marked surface or board according to a set of rules. This means that players move around each square using dice or other methods of movement, which may present challenges in the form of words or questions related to the vocabulary in play. As participants move around the board, they must demonstrate their mastery of the vocabulary by correctly answering the questions or identifying the

proposed words, which allows them to advance more quickly towards the goal and, above all, in an interactive and entertaining way. As illustrated by Quinchuela Andrade (2023) who says that, "a well-designed board game acts as an effective educational tool that motivates the player so that he or she can learn more" (p.12). Consequently, using this board game to learn vocabulary facilitates the stimulation of learners' interest and improves their level of engagement.

Vocabulary

Vocabulary is the set of words used by human beings to interact effectively in a foreign language. According to Setiawan and Wiedarti (2020), "Vocabulary can be defined as many words used to communicate with other people. Many words also have special connotations which provide different meanings" (p.85). This means that vocabulary is not only related to words but also to their meanings considered essential elements to understanding the general content of spoken or written texts.

Within the teaching-learning process of a new language, vocabulary is an essential element to express feelings, emotions, opinions, and experiences related to any topic. As Guaqueta and Castro-Garces (2018) mention "Among the language skills that any learner needs to be able to develop a linguistic competence, vocabulary is foremost a key component" (p.63). Therefore, it is necessary for English teachers to encourage their students to acquire words used in various contexts in order to enable them to interact accurately with people from other places.

One of the most relevant aspects of vocabulary is the term "word" which represents the smallest unit of language used to form different sentences, expressions, and phrases. In accordance with Shavkatovna (2022), "A word is the main structural and semantic unit of a language that serves for naming objects and their properties, phenomena, relations of reality, having a set of semantic, phonetic and grammatical features specific to a given language" (p.69). From this concept, it can be stated that every word is a unit of sound and meaning which are the root of communication in areas such as listening, reading, speaking, and writing.

Importance of Learning Vocabulary in English as a Foreign Language

In the English language, vocabulary provides students with multiple benefits. First of all, this allows them to communicate properly with each other since without vocabulary nothing can be transmitted. Sari and Aminatun (2021) state that “Vocabulary plays an important role in communication, so we cannot be able to communicate well without sufficient vocabulary” (p.16). Based on this, it can be determined that vocabulary is key to mastering the language and sharing opinions.

Secondly, vocabulary helps students significantly develop their listening, reading, writing, and speaking skills. This is supported by Ariffin (2021) who carried out a study where she found that vocabulary knowledge allows students to successfully perform their receptive and productive skills. From this research, it can be highlighted the importance of teaching vocabulary through pictures and interactive activities which allow students to acquire a large number of words for different real-life situations.

Finally, vocabulary offers students the possibility of having academic achievements and successful careers where they can use their knowledge of the English language to generate a positive impact within the working market. Researchers such as Bekteshi and Xhaferi (2020) have concluded that students who learn vocabulary in their English classes have high levels of stimulus for future job opportunities. As a result, vocabulary has been recognized as a vital factor in the educational field and in the work environment.

Types of Vocabulary

The vocabulary has been divided into four types related to listening, reading, speaking, and writing skills which play a specific role during the teaching-learning process. This is corroborated by Rustamova and Bahodirova (2023) who claim that “The four vocabularies of listening, speaking, reading, and writing are frequently taken into account by educators” (p.1101). Consequently, teachers need to prepare their lessons with tasks, activities, and games that motivate students to reinforce their vocabulary within each type; otherwise, they cannot develop their language skills effectively and productively.

Listening to vocabulary. This type refers to the words we hear to understand the messages. As Putri (2022) points out, “A person's listening vocabulary is all the words they can recognize when listening to speech” (p.2). Based on this concept, it can be said that the term “vocabulary” is an essential tool to effectively and easily develop listening comprehension skills, especially when students must recognize the main ideas and specific details conveyed by the speakers during their speech.

Spoken vocabulary. The second type is related to the words used by people when expressing their ideas or opinions toward others. To Dalimunthe and Haryadi (2022), spoken vocabulary can also be defined as the ability to express the meaning of words during conversation or verbal discourses. Undoubtedly, this highlights the importance of teaching a wide variety of lexical ranges to students who need to learn meaningful, helpful, and appropriate vocabulary to communicate in today's globalized world.

Reading vocabulary. The third type refers to the words that a reader needs to know in order to understand the content of the reading. It is also defined as the indirect acquisition of the meaning of words through conversations and readings in various situations (Ibhar, 2022). In this sense, teaching vocabulary has been one of the best methods to motivate learners during their learning of English as a foreign language, as it allows them to acquire useful words to communicate effectively with people from other countries.

Writing vocabulary. The last type consists of the words used by people when writing a text, which are an important element in conveying clear messages and ideas. In accordance with Barus and Panjaitan (2022) “When writing, our vocabulary determines how we express our thoughts clearly and accurately to others” (p.13). Therefore, it is necessary for students to have a broad and useful vocabulary that allows them to develop this skill effectively; otherwise, they will not be able to produce a text with coherence and cohesion, which will prevent readers from understanding what they have transmitted in their writing.

In order to expand the students' vocabulary in writing skills, English teachers must follow some steps. First of all, they have to motivate students to learn new

words that allow them to write their ideas clearly since without vocabulary and grammar the texts do not make any sense. Secondly, teachers need to teach students vocabulary on different topics according to their interests in order to encourage them to produce their own writing by using the words learned in the classroom. Finally, they also must implement technological resources and digital platforms where students can practice and improve their writing skills. This has been supported by some studies developed by researchers who have found out the impact of websites to increase students' vocabulary use when writing a text (Rong and Noor, 2019). From these statements, it can be claimed that vocabulary and writing are closely related as the first one is key to developing the second one.

In conclusion, vocabulary is an essential factor to develop the four skills and make sense of the language. Therefore, teachers need to focus mainly on looking for new ways to expand the students' vocabulary within their lessons through interactive and innovative tasks, activities, and games aimed at creating a positive learning environment where the students feel motivated. In addition, it is fundamental to use technology as a tool to arouse the students' curiosity as today's modern teachers must adapt their teaching-learning process to the new technological era.

Aspects of Vocabulary

As Alharthi (2020) stated, developing vocabulary requires students to understand the form-meaning link of a word. He also expressed that there are other kinds of vocabulary knowledge which are involved within the nurturing of receptive and productive skills such as word form, word meaning, and word use. All these aspects of vocabulary knowledge are analyzed in depth in the work by Nation (2022).

Components of vocabulary

Spelling. This component is defined as the ability to write words that accurately follow the orthographic rules of a given language. Even though nowadays there is spell check software freely available for writers to automatically correct, complete or replace a spelling error, it continues to be of utmost significance for language users to not relegate this spelling responsibility entirely to a software-based writing aid since some limitations of these are still present (Pan et al., 2021). This

significance is observed within the employment and business fields where appropriate spelling may result in providing job security, whereas incorrect spelling may produce negative effects in terms of credibility, sales, and professional capabilities. Finally, spelling has been found useful to endorse the development of appropriate reading and writing skills since the use of the correct graphemes allows learners to access higher-order skills that are required in text production and understanding (Graham, 1999).

Meaning. As noted by Bender and Koller, (2020) meaning is defined as the relationship between any linguistic form (word, phrase, clause, etc) and the communicative purpose that the language user wants to convey. Although this definition may sound concrete, they warned that it is a more complex concept to understand in the world of linguistics. In this research, the researcher studies the concept of “meaning” in the field of conventional or standing meaning. That is to say, what a word stands for depending on the context provided (Quine, 1960).

Association. According to Nation (2022) this component has to do with the items to which a given concept can be referred. For example, the word friend can be related to a person with whom we keep a close or tight-knit relationship; in consequence, hearing this word can lead us to think about our own friend. Indeed, that is what this term “association” refers to, it is “an idea or a memory that is suggested by somebody/something; a mental connection between ideas” (Oxford, 2023).

Grammatical function. In linguistics, grammatical function refers to the syntactic role of the words and phrases within the context of sentences or clauses, which consist of a subject, and an object. According to Dalrymple and Lodrup (2000), “This is defined in terms of a functional hierarchy, usually taken to represent relative syntactic obliqueness” (p.1). That is to say, these grammatical functions focus on the functional relationships of the elements present in a sentence in order to ensure the correct meaning of the words during the transmission of the messages.

To illustrate the grammatical function, it is necessary to take into account the following example: “Carlos bought a house”. In this case, Carlos is the subject defined

as the person who performs the action (Aliyevna, 2023), whereas the house is the object affected by the verb. In general, both subject and object have different functions in the sentence; however, they complement each other to make sense of the message.

Collocations. In lexicology, collocations are the combinations of words or phrases within a sentence that can be made up of nouns, verbs, adverbs, and adjectives. This is supported by Umar (2021) who claims that “Collocations are used mainly by semanticists, lexicologists, and phraseologists to refer mostly to different forms of word combinability” (215). Therefore, these constitute an important part of the teaching-learning process since they allow students to acquire the language successfully and learn new vocabulary for a wide variety of contexts and situations.

In the English language, there are many collocations such as breakfast or butterfly that arise from the combination of the different parts of speech. For instance, the term breakfast is formed by the verb “break” and the adjective “fast”, while the word butterfly is made up of the noun “butter” and the verb “fly”. In both examples, it is observed the importance of using collocations since they help to form diverse words and phrases with new meanings. In this sense, some studies carried out by researchers have recommended teachers teach collocations through interactive, entertaining, and innovative activities to increase students’ lexical range during their learning cycle (Noroozi, 2022).

3. MATERIALS AND METHODS

Research Design

In general terms, the research project adopted a mixed-method approach within the framework of an action research model. This approach involved not only conducting research but also implementing an intervention proposal as part of the study.

To begin with, Molina (2016) defines a mixed method approach as “the combination and integration of qualitative and quantitative methods in the same study” (p. 37). On the one hand, qualitative research assumes a fundamental research role, as it provides a means to explore and understand how individuals or

groups attribute meaning to a social or human issue. In such a way, the research process involves the development of inquiries and methodologies, the collection of data usually in the participant's setting, the analysis of the data by extracting general patterns from specific cases, and the interpretation of the meaning of the data by the researcher (Creswell, 2008). On the other hand, the quantitative research method is collecting and analyzing numerical data. This method is ideal for identifying trends and averages, making predictions, verifying relationships, and obtaining general results. Similarly, this can be evaluated through the use of instruments, typically resulting in numerical data that can be subjected to statistical analysis methods (Creswell, 2008). Consequently, the mixed method is the most appropriate for this project, since through it, the researcher collected and analyzed quantitative data corresponding to students' vocabulary scores, as well as qualitative data comprising students' perceptions of the use of gamification for vocabulary learning.

Data Collection Sources and Techniques

First, a pretest and a posttest were used to collect quantitative data, the questions contained questions such as, sorting, matching, space filling, etc. The purpose of this data collection was to help the researcher determine the level of knowledge about vocabulary learning before and after the intervention proposal.

Furthermore, an observation technique using the instrument of field notes on a weekly basis was used to collect data on the students' progress after introducing the use of gamification as a learning strategy.

Data Analysis

From the point of view, Yellapu (2018) asserts that descriptive statistics is a way for researchers to organize and summarize data they have collected. It helps them to understand the relationship between different things they are studying. By putting the data in an organized form, connected things can be seen and learned in research. It is like sorting the data into groups to make it easier to understand.

Research Participants

In this research project, the participants of the following work were the researcher, who acted as a teacher and was part of the study considering that it is

action research. Likewise, 23 eighth-grade students from a public institution in Loja, whose average age ranges between 11 and 13 years old, were part of this study. This sample was taken for convenience because it presents some deficiencies in vocabulary learning.

Timing

The intervention plan had a duration of two months of English classes that were developed in eight weeks, with 3 hours of classes per week that were taught in the morning session during the 2023-2024 school year. In this intervention proposal, the teacher used the gamification strategy to improve the students' vocabulary learning.

Procedure

The present research followed the five steps of the action research cycle suggested by Yasmeeen (2008), which emphasizes collaboration, participation, and learning, which allowed the researcher to find solutions and achieve significant change to the problem previously identified within the classroom.

Diagnosing

In the first stage of the research, it is essential to begin by identifying the problem, since this will establish the basis for the planning and execution of innovative actions. Then, the researcher analyzes what has happened in the English classes through the new experiences and will look for problems or things that did not work well.

Action Planning

After identifying the problem, during the action planning stage, the researcher created an intervention plan that listed all the actions intended to solve it. In other words, the plan detailed what steps would be taken to enhance and accomplish vocabulary learning. Consequently, the plan explained how the use of gamification was implemented to address issues in English vocabulary learning.

Action Taking

During the action taking stage, the researcher put the intervention proposal into practice, implementing what had been planned. In other words, the researcher

selected the course of action for the research and the use of gamification to enhance vocabulary with the target group. To achieve this, data collection instruments were utilized, including a pre and post-test, field notes.

Evaluating

During the evaluating stage, the collected information on the results of the intervention plan was analyzed and interpreted. Subsequently, the quantitative data was presented in tables and graphs.

Specifying

Finally, after evaluating and obtaining results during the research process, all significant findings were acknowledged. At the end of the research work, everything that had been learned during that period of development was discussed and questioned, demonstrating how well the use of gamification for vocabulary learning worked. These findings were communicated through conclusions and recommendations in the report.

4. RESULTS

In the following section, the results obtained through the research instruments, which encompass quantitative approaches, are shown. With the help of these instruments, which were a pre- and a post-test, the researcher was able to evaluate the students' performance after the intervention proposal in terms of vocabulary, considering indicators such as spelling, meaning, association, collocation, and grammatical function.

Pre-test and Post-test Results

Objective: To validate the effectiveness of gamification on the improvement of English vocabulary learning among superior basic education students at a public institution of Loja.

First of all, the pre-test results are presented as follows:

Pre - Test Results

Table 1

Pre-test scores on vocabulary learning of 8th grade students

Grading scale (2/2)	Spelling		Meaning		Association		Collocation		Grammatical function	
	f	%	f	%	f	%	f	%	f	%
0 - 0,5	12	52	7	30	10	43	10	43	16	70
0,6 - 1	8	35	14	61	12	52	12	52	6	26
1,1 - 1,5	3	13	1	4	0	0	0	0	1	4
1,6 - 2	0	0	1	4	1	4	1	4	0	0
Total of students	23	100	23	100	23	100	23	100	23	100
Mean	0,67		0,75		0,74		0,87		0,48	

Table 1 displays the number and percentage of eighth-grade students who achieved scores in the ranges 0–0,5; 0,6–1; 1,1–1,5; and 1,6–2 across some vocabulary indicators, such as spelling, meaning, association, collocation, and grammatical function.

In the item 1 which was about spelling vocabulary words correctly, 52% of the students achieved a score between 0 and 0,5 in "spelling" words. This indicates that they face significant challenges in spelling, either due to insufficient practice or a lack of interest. Additionally, 35% of the students scored in the range of 0,6 and 1, which is still a low score because students show limitations in spelling vocabulary written exercises. Lastly, 13% of the students got a score between 1,1 and 1,5 in spelling vocabulary. It is evident that most students have problems spelling words in the English language vocabulary. This indicator got a total mean of 0,67 out of 2.

Regarding the item about "meaning" vocabulary the results showed that 61% of the students scored between 0.6 and 1. This indicates that most of the students have difficulties identifying meaning through the use of pictures and recognizing the meaning of their vocabulary. In addition, 30% of them scored between 0 and 0.5, which means that a substantial part of the student population also had difficulties recognizing the meaning of the vocabulary. Finally, 4% of the students scored in the upper ranges of 1.1 to 1.5 and 1.6 to 2. This suggests that very few students performed well on the test, achieving above-average scores.

Within the "association" vocabulary, the majority of students scored between 0.6 and 1, with 52%, which shows that they have a moderate level of understanding of the meaning of words and are able to associate them. Meanwhile, 43% scored between 0 and 0.5, which shows that they have too much difficulty associating words with each other based on their meaning. And only 4% scored between 1.6 and 2, indicating a high level of comprehension—that is, they can connect words based on their meaning. Taken together, these data gave a mean score of 0,74 out of 2.

Next, regarding item 4 of the vocabulary "collocation," 52% of the sample obtained a score of 0.6 to 1, which shows that most of the students have mastered the combinations of words within a sentence. However, 43% of the students had difficulties with the use of collocations, with a score between 0 and 0.5. In addition, only a small percentage, 4%, demonstrated a high level of proficiency, with a score between 1.6 and 2. In summary, the results show an average score of 0.87 out of 2.

Finally, in the "grammatical function" of the vocabulary, 70% of the students obtained a score between 0 and 0.5, which shows that most of the students could not recognize the correct grammatical function of the word or phrase. This result indicates a lack of learning the grammatical structures of the tenses and the use of vocabulary. In addition, 26% of the students obtained a score between 0.6 and 1, which is still considered low, and they have difficulties with grammatical functions. Instead, 4% of the students scored between 1.1 and 1.5, which indicates that there is a minority of students who have demonstrated some mastery of the grammatical functions. Overall, the results indicate a mean score of 0.48 out of 2.

In summary, the weak points of the students were mainly evident in spelling proficiency, with over half (52%) scoring between 0 and 0.5, indicating significant challenges in spelling vocabulary words correctly. Additionally, 61% were found to have difficulties relating vocabulary to their respective meanings, with an average score of 0.6 to 1. Similarly, 70% received a score between 0 and 0.5, indicating a notable weakness in understanding grammatical functions, as they were unable to comprehend how to use words correctly in sentences. While some students demonstrated moderate proficiency in areas such as word association and

collocation, overall, the results underscore substantial areas for improvement in various aspects of vocabulary acquisition and application.

Post – Test Results

Table 2

Post-test scores on vocabulary learning of 8th grade students

Grading scale (2/2)	Spelling		Meaning		Association		Collocation		Grammatical function	
	f	%	f	%	f	%	f	%	f	%
0 - 0,5	1	4	0	0	2	9	6	26	6	26
0,6 - 1	2	9	0	0	2	9	9	39	5	22
1,1 - 1,5	8	35	1	4	0	0	3	13	8	35
1,6 - 2	12	52	22	96	19	83	5	22	4	17
Total of students	23	100	23	100	23	100	23	100	23	100
Mean	1,67		1,87		1,78		1,11		1,15	

After the intervention period of eight weeks, a post-test was administered to the students to measure their vocabulary level, such as spelling, meaning, association, collocation, and grammatical function. Table 3 shows the number and percentage of eighth graders who scored between 0-0,5, 0,6-1, 1,1-1.5, and 1,6-2 on each vocabulary indicator.

As can be seen in Table 2, the "spelling" component showed that 52% of the students who scored between 1,6 and 2 did not have any difficulties in ordering letters and forming words. On the other hand, 4% of them scored between 0 and 0,5, indicating that some students were limited in their knowledge of basic and common vocabulary. This limitation is reflected in the confusion and misspellings present in their writings. As a result, this component obtained a mean of 1,67 out of 2.

In addition, in the "meaning" indicator, 96% of the students scored between 1.6 and 2, which shows that they had no problems identifying the meaning of words since their score was as good as expected. On the other hand, only a small percentage, which is 3% of the students, scored between 1, 1, and 1,5, which

indicates that some might have had a little difficulty in their basic vocabulary knowledge. In summary, the overall mean score is notably high at 1,87 out of 2, suggesting a solid overall mastery of vocabulary among most of the students tested.

Regarding "association," 83% of the students obtained a score between 1,6 and 2, which shows a high knowledge of associating and understanding the meaning of words in the appropriate context. However, 9% scored between 0 and 0,5, as they showed an attempt to associate with their respective word meanings. This indicates that they have some difficulties associating words with their correct meaning. Therefore, the mean score is relatively high, with a value of 1,78 out of 2.

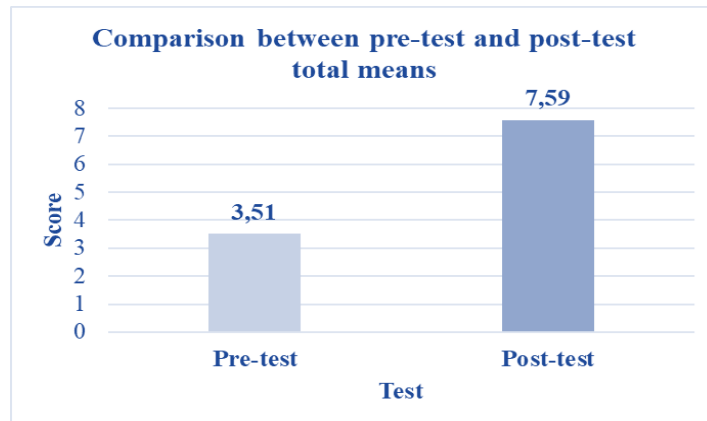
About collocation, the results obtained in the post-test revealed that 39% of the students obtained a score between 0,6 and 1, which shows that they still have problems with "collocation." They could not adequately adapt word collocations within a sentence due to a lack of understanding of the appropriate collocations in each context. On the other hand, 22% of the participants scored between 1,6 and 2, indicating a stronger ability to effectively use word collocations. The overall mean is 1,11 out of 2.

Finally, in the "grammatical function," 35% of the students obtained a score between 1.1 and 1.5, which shows that most of the students recognized the grammatical use of words and had an improvement, as expected. However, 26% of the students scored between 0 and 0.5, which shows that there was a small problem with identifying the correct grammatical function of the words; they were confused in some cases. Therefore, the average obtained for this indicator was 1.15 out of 2.

To summarize, the results obtained revealed that the use of gamification was effective in terms of improving vocabulary such as spelling, meaning, association, collocation, and grammatical function with eighth grade students. In fact, the improvement could be evidenced by comparing the pre-test and post-test. To this end, the results of the questionnaire helped to analyze data on vocabulary improvement.

Figure 1

Comparison between the total pre-test and post-test means on the performance of eighth grade students' vocabulary knowledge



As shown in Figure 1, the mean scores obtained for students' vocabulary performance in the pretest and posttest are summarized. The purpose of the application of both tests was to measure and determine the improvement of English vocabulary learning in eighth graders, considering vocabulary indicators such as spelling, meaning, association, collocation, and grammatical function.

Accordingly, the overall pretest mean was 3.51 out of 10, while the posttest mean was 7.59 out of 10. Undoubtedly, these results revealed that the application of gamified elements and strategies was effective in increasing the level of vocabulary in eighth grade students. Moreover, the great improvement in vocabulary knowledge could be evidenced by comparing the pre-test and post-test.

5. DISCUSSION

The present study was designed to improve English vocabulary learning by using gamification. Therefore, the researcher proposed a main research question: How does gamification improve the English vocabulary learning among high school students. The study revealed a remarkable impact on the improvement of English vocabulary learning with eighth grade students. After the application of gamification, the mean score of the post-test increased with respect to the pre-test. It is supported by Thiagarajah et al. (2022), who found that the use of gamification tools can help and improve English vocabulary learning and students' motivation, as students indicated that it was more academically interesting, fun, engaging, and

well organized, allowing them to communicate their thoughts and ideas in a more constructive way, and this was confirmed by the students' results and scores.

In this regard, the first sub-question was: What is the effectiveness of gamification in English vocabulary learning among superior basic education students at a public institution in Loja? The results showed that the use of gamification had an impact on effectiveness since the post-test score was 7.59 out of 10, while the pre-test had a difference of 3.5 out of 10. This means that it was very useful, as gamification promotes the expansion of vocabulary and the improvement of indicators such as spelling, meaning, association, collocation, and grammatical function following the implementation of gamification. Similarly, previous studies have indicated that the use of gamification helps students learn unfamiliar words and phrases through games (Ketola 2019).

This author adds that incorporating games into vocabulary learning is highly effective, and consequently, using gamified elements such as points, rewards, and challenges was a highly effective strategy for enhancing students' vocabulary in an engaging and enjoyable way. Furthermore, Khaleel et al., (2020) established in their findings that the implementation of gamification in the educational field offers significant advantages, as these elements are fundamental for enhancing individuals' effectiveness and understanding in a pleasant and enjoyable educational environment, resulting in exceptional performance.

6. CONCLUSIONS

The use of gamification to improve English vocabulary learning with eighth-grade students had a significant positive impact, improving various aspects of vocabulary such as spelling words, meanings, association, collocation, and grammatical function. Students found that this methodology provided them with fun and engaging learning while expanding their vocabulary, resulting in a noticeable improvement in the English language vocabulary learning.

The results of the pre-test and post-test clearly indicate that the implementation of gamification was effective in improving English vocabulary learning. The comparison between the average scores obtained in both tests reveals a substantial

increase in vocabulary knowledge as well as in recognizing form, meaning and use of new words. These findings confirm that gamification is an effective methodology into the English language vocabulary teaching learning process.

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