Case Study: Gamification as a strategy for vocabulary learning in university students

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ABSTRACT

Research have shown that gamification can have a great and positive impact in students' motivation and engagement with their learning. Since Covid-19 and social distance happened, teachers needed to adapt and create the conditions for students to continue with their learning, to boost their interest and motivation in a virtual environment. As a result, the use of online games seemed to be a way to grab students' attention and to increase their level of participation in class while learning new vocabulary. Some authors have commented that at least 10 to 17 encounters might be necessary for word meaning to be recalled. Games used as a tool in vocabulary learning in a second language allow repetition through failure taking away the shyness or shame to try it again. The aim of this survey was to know the perception on the effectiveness of using online games when learning vocabulary at the English area of the Technical University of Babahoyo. The results showed that most teachers are willing to use online games. Even though some of them found it difficult to use games based on their content, they realized that gamification helped most of the students to engage in class. Students were more open to receiving information when experimenting with progress and persisted in their learning when they receive feedback repeatedly. Nevertheless, vocabulary acquisition also involves other aspects besides the meaning which opens new doors for this study to expand and explore in further research.

Keywords: Gamification; vocabulary acquisition; online games

Caso de Estudio: La gamificación como estrategia para el aprendizaje de vocabulario en estudiantes universitarios

RESUMEN

Investigaciones previas han demostrado que el buen uso de la gamificación puede tener un gran y positivo impacto en la motivación y el compromiso de los estudiantes con su aprendizaje. Debido al Covid-19 y el distanciamiento social, los docentes necesitaron adaptarse y crear las condiciones para que los estudiantes continuaran con su aprendizaje, impulsaran su interés y motivación en un ambiente virtual. Como resultado, el uso de juegos en línea parecieron ser la vía para captar la atención de los estudiantes y para incrementar su nivel de participación en clases mientras aprendían un nuevo vocabulario. Varios autores han comentado que se necesitan al menos entre 10 y 17 repeticiones para recordar el significado de una palabra. Los juegos utilizados como herramienta en el aprendizaje de vocabulario en un segundo lenguaje permiten la repetición a pesar del error quitando del medio la timidez o vergüenza al intentarlo de nuevo. El objetivo de esta encuesta fue conocer la percepción sobre la efectividad del uso de juegos en línea en el estudio de vocabulario en el área de inglés de la Universidad Técnica de Babahoyo. Los resultados mostraron que la mayoría de los docentes están dispuestos a utilizar juegos en línea. Aunque para algunos de ellos fue difícil la adaptación de su material a un juego, entendieron que la gamificación atrajo a la mayoría de estudiantes. Los estudiantes estuvieron más abiertos a recibir información cuando experimentaron algún progreso y continuaron su aprendizaje cuando recibieron retroalimentación repetidamente. No obstante, la adquisición de vocabulario también involucra otros aspectos además del significado de la palabra, lo cual abre nuevas puertas para que este estudio se expanda y explore en futuras investigaciones.

Palabras clave: Gamificación; adquisición de vocabulario; juegos en línea

INTRODUCTION

In English learning, vocabulary has an important role, student could have problems with their communication if they do not have enough vocabulary to express their needs. Hiebert and Kamil (2005) claim that "Productive vocabulary is the set of the words that an individual can use when writing and speaking. They are words that are well-known, familiar, and used frequently. In opposition, receptive or recognition vocabulary is that set of words for which an individual can assign meanings when listening or reading". (pg. 3). The process of linguistic development is the starting point of the acquisition of vocabulary that will serve the individual throughout his life. Vocabulary acquisition begins with interactions in the environment in which it unfolds and continues in the application of knowledge through formal learning experiences.

Systematic vocabulary acquisition allows people to learn new words, make semantic and contextual connections between the words they know, associate newly acquired words with the words they already know, and express the words in their vocabulary in written and oral communication forms (Genç & Boyacı, 2021). The need for the effective acquisition of words gave rise to the emergence of the vocabulary concept and of teaching methods such as gamification used to develop vocabulary.

Gamification is used as a strategy in the learning process, in all educational activities in which teachers use dynamics, structures, and game mechanics in environments that are not exactly a game, seeking to enhance motivation, concentration, effort, loyalty, and other positive values that are common to the students learning process (McGonigal, 2011). Also, according to Pellicer-Sánchez, A., & Schmitt, N. (2010) at least 10 to 17 encounters might be necessary for word meaning to be recalled

Kurniawati, Regina, & Rosnija (2015) state that learning vocabulary is increasingly considered essential in the language learning teaching process. Nowadays, there are many ways to teach vocabulary in a didactic way. To make the learning process easier and more interesting, teachers apply the appropriate teaching aids and teaching strategies related to the presentation of vocabulary. According to Hatch and Brown (2000), teaching strategies refer to everything teachers do or should do to help their learners learn. If teachers want their students to get new vocabulary, teachers need to use some interesting strategies of teaching in order to maintain the students' focus on learning by giving them some fun activities, such as vocabulary games, watching their

favorite film, matching with definitions and others activities related to the vocabulary building and vocabulary learning.

Traditional learning methods allow teachers to decide how they will convey information to their students, but online learning provides more flexibility and gives students control over their education. Nowadays in our online classes, teachers have to integrate technology and it has had important implications on the theoretical approaches adopted for the systematic teaching of vocabulary. In other words, as technology becomes integrated into language instruction, approaches such as gamification have started to replace conventional learning approaches. This work revealed that the use of gamification is beneficial to help university students in the process of learning new vocabulary and applying it in a real context using game-based learning and gamification creating an attractive learning environment where students find it easier to improve their vocabulary skills.

Most of the students learn vocabulary mechanically; they use it with difficulty in listening, writing, and speaking lessons. The problem manifests itself because there is no good practice in the acquisition and retention of all the content that has been learned during the teaching and learning process. Considering the reason above this research focuses on Gamification as a strategy for vocabulary acquisition and its effectiveness in helping students to retain the vocabulary learned at the English area of the Universidad Tecnica de Babahoyo. The research question that guides our study is: Could gamification enhance the acquisition of vocabulary in College Students? The objectives of this research are: i) to support students learning and retaining vocabulary, and ii) to analyze students' perceptions of using online gamification to review vocabulary.

The present study expresses several benefits and opportunities that can be obtained through the application of gamification in different activities during the process of teaching vocabulary. Among the main advantages is the positive attitude of the students and their interest in the learning process, demonstrating active participation in the different activities that led the students to autonomous learning. On the other hand, throughout the teaching and learning process teachers can identify and take corrective measures if the game is not well applied or if the game used does not meet the learning expectations of the group. Prevent students from losing interest in the real objective of

the activity or avoiding that the teaching and learning process ending in a simple game with no learning results.

METHODS

The methodology used in this research is exploratory and descriptive, based mainly on qualitative and quantitative methods, with a longitudinal cut strategy. It is developed through the Case Study method, focusing on students and teachers in the English area of the Technical University of Babahoyo.

Initially, we were looking forward to exploring the potential contribution of gamification in the acquisition of vocabulary in English students, thus, a semi-structured questionnaire was developed for teachers, and a second one for students, in which various variables proposed by Lui (2013) were analyzed, where in Table I the following variables stand out:

Table I: Indicators for gamification contribution to learning vocabulary

Variable	Indicator
Teachers' perception of vocabulary contribution:	Vocabulary learning
	Students' preferences
	Advantages perceived
Teachers' perception of the game played:	Challenging
	Interesting
	Emotions
	Motivation
	Feedback
Students' perception of the game:	Game dynamic
	Game Characteristic
	Class related
	Teacher's feedback

It is important to mention that EFL teachers in the Language Center of the university, during the first period of 2021 (May to September) carried out a 14-week course of educational innovation in which various strategies were proposed to increase motivation and the use of technology in classes, including gamification. This change was substantial

for the realization of continuous improvement in online classes and the strengthening of the skills of teaching English with the use of technology.

Thus, a census-type survey of all teachers who taught English classes during this term at the Technical University of Babahoyo was carried out, where 29 EFL teachers were interviewed, 47% male and 52% female, and having an average age of 41 years old.

On the other hand, convenience sampling was carried out to survey the students due to different factors: i) a limited population of students who are willing to answer the survey without bias and, ii) difficulty of access to 100% of enrolled students in the period, since the investigation was not developed by the Department of Languages, but by a group of teachers who belong to it.

Having remotely carried out 158 surveys to students, we rigorously validated only a total of 105 surveys, managing to saturate the sample, given the information previously collected by the teachers. Then, to analyze the data, we used descriptive statistics using tables and graphs to assess the information to explain appropriately the results obtained from collected data in the field.

Finally, as a gamification strategy, the EFL teachers selected the different platforms that they used during the semester where students could develop and acquire vocabulary, then, in Figure 1, we could review this information in detail:

Figure 1: Platforms used by EFL teachers to increase vocabulary

RESULTS AND DISCUSSION

Data from both surveys, teachers' and students', were converted then we could analyze using descriptive statistics, where frequencies, means, and standard deviations were calculated.

We started analyzing the data coming from teachers. Before the 14-week course, 51.38% of teachers from the language department has "rarely" or "never" used games in their online classes. Teachers were asked which game was the last they played with their students, to evaluate the questionnaire focusing on that activity, 31.03% of teachers used Kahoot and 27.59% used Wordwall, then we used those two platforms to evaluate students' and teachers' performance during the game. In Table II, we analyze the main teachers' perception of using online games to study vocabulary in online classes.

Table II: Perception of using online games o study vocabulary

Indicators	Yes	No
Teachers prefer using online games instead of traditional alternatives	25 (86,20%)	4 (13,79%)
Online games help to increase vocabulary in students	29 (100%)	0 (0%)
Students like to practice using games	29 (100%)	0 (0%)

Mostly, teachers prefer to use online games rather than traditional alternatives, just 13.79% of teachers didn't agree with these preferences, when analyzing the data, those teachers are older than 50 years old, then we can argue that age is a factor to stop using online games in classes, depending on the technological knowledge of the teacher. The total of teachers agreed that using online games in virtual classes supports teachers to review the vocabulary practically and also, helps students to remind those new words easily. Then, they all agreed, that students like to learn and practice using online games in virtual classes. In Table III, we analyzed the use of gamification to learn vocabulary, based on a general answer and in the last game answer.

Table III: The usefulness of online games to learn vocabulary

Indicator	Mean	Standard Deviation
Using games in online classes	4,52	0,63
The last game played in class	4,70	0,47

The average answer regarding the question about the usefulness of playing online games in virtual classes is high, when teachers were asked if they consider online games useful to learn vocabulary in their classes the mean is 4.52 with a standard deviation of 0.63, while, if they went back to the last played game (to be focused on the teachers and students improvement during the semester), the mean increase to 4.70, while the standard deviation decrease to 0.47. This variability reduction could support the fact they are more empowered in using games during classes than before.

On the other hand, teachers present some general advantages of using gamification during class that we show in Table IV.

Table IV: The usefulness of online games to learn vocabulary

Advantages presented by Teachers	Frequency	Percentage
Create more interaction	23	79,3%
Increase motivation	20	69,0%
Support difficult topics learning	15	51,7%
Help student reach their learning goals	12	41,4%
Stimulate the collaborative learning	11	37,9%
Stimulate the teamwork	10	34,5%
Improve the English performance	8	27,6%
Improve the English study	8	27,6%

Furthermore, we needed to analyze the teachers' perceptions about the last game played, checked their attitude towards the tool, and how easy or difficult was for them to adapt their content so students can learn vocabulary with a technological approach. Figure 2 presents an amoeba graph where we could review all the variables analyzed.
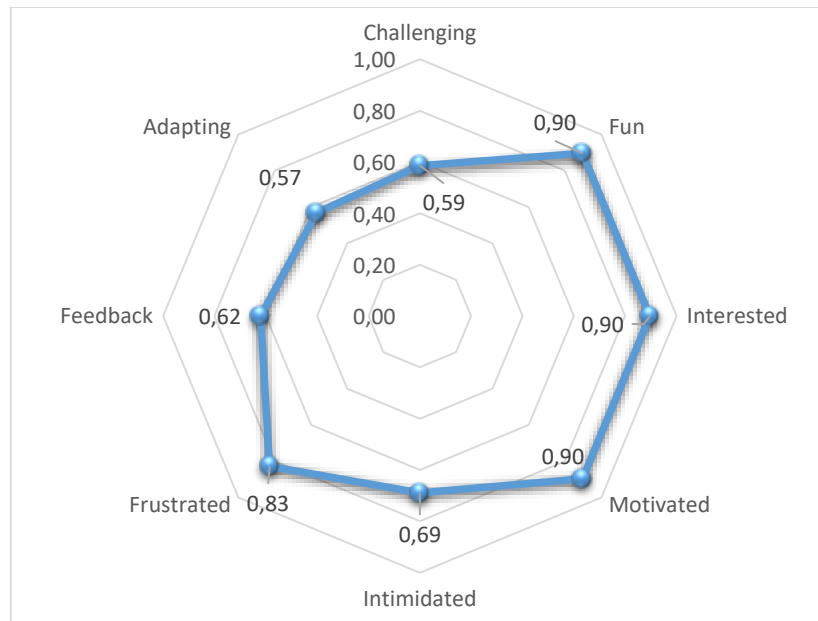
Figure 2: Teachers' Perception of the game played

Based on the responses about the teachers' perceptions in the last game played in a virtual class, we built an amoeba graph where we manage to locate all the indicators measured into one figure that could explain them better. An amoeba graph has a lower and higher limit, if the indicator reaches the higher limit, the variable analyzed has gotten the maximum level measured. Thus, we review different indicators, and teachers answer according to the dynamic of the game and the feedback received from students. Teachers watched students during the online session, play the game in a fun, interesting, and motivated way (0.90), but also, students get frustrated (0.83) trying to answer correctly or getting to the end in the top 3 players.

On the other hand, some students express an intimidating (0.69) and/or challenging (0.59) attitude while playing the game. Students got intimidated as the game advanced and some classmates were above them in the players' scores, however, they continue challenging themselves to do it better. Some teachers reflect after doing several gamification exercises, some students practice more than once, and some courses ask the teachers to repeat the exercise to practice.

Furthermore, teachers were struggling while adapting their classes (0.57) to include gamification tools that serve and generate add-value to their classes, mostly, to vocabulary acquisition that is fundamental in English as a foreign language learning. But

students' feedback (0.62) after playing those games is good enough to give it a try, reminding us as teachers that we learn from mistakes and the next game will be better. The last variable we wanted to measure was the students' perception of the game, they rated different variables than the teachers' and we created a new amoeba graph to explain its importance.
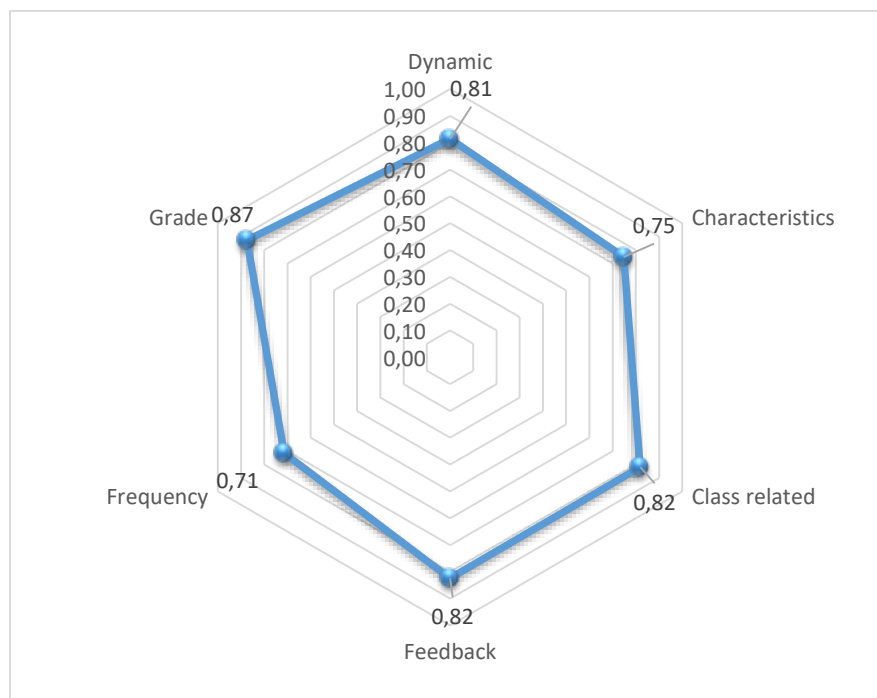

Figure 3: Students' Perception of the game played

Finally, we analyzed the students' opinions on the last game they played in the online class with their EFL teacher. The frequency in which their teachers use online games is the lower score (0.71), but it is still a great score when teachers include games in their weekly planning. The players consider that the characteristics (0.75) and the dynamic (0.81) of the game were good, and also, they received good feedback (0.82) from their teachers about the game results and consider the gamification tool was class-related (0.82) with the material they checked on their sessions. Finally, the students gave a very good grade on their last game played (0.87). To sum up, even if it is somehow difficult for us, as teachers to adapt our classes to the technological media and different current tools, it is imperative for students that we find new ways to get to them, mostly at this time, when all our lives changed abruptly because of the Covid-19 pandemic and they have had

to adapt as much as we have. We need to motivate them to learn, and gamification is a good path for vocabulary learning in our English classes.

Discussion

Gamification has not yet been fully incorporated into the activities of instructors in universities, although there is evidence that it seems to be a very useful tool in the learning process when acquiring new vocabulary in a second language (Vanduhe, Nat & Hasan, 2020). Multiple studies have indicated that gamification makes the class more fun, and dynamic; it attracts students' attention to the topic and it gives students the perception of a more flexible learning environment where mistakes are allowed (Garcia & Hijón 2020). Furthermore, it's through failures and repetition that knowledge takes place which is aligned with the purpose of gamification.

However, we need to remember that gamification has been shown to engage and motivate learners when used properly in or outside the classrooms (Lee & Hammer, 2011; Muntean, C. I. 2011) which means that online games should be used in a structured way to achieve the goal and to contribute to improving students' performance, otherwise the process of learning could be taken for granted and students could miss the mark focusing only on the fun part of the tool.

This study showed to some degree that it was difficult for teachers to use games as a tool and to adapt the content using gamification in class. If teachers are going to incorporate games into a lesson, it's fundamental that they develop a deep understanding of the task, the skills that are needed according to students' level of English, also, how other gaming platforms operate to be aware of the procedure that learners must fulfill before they even start using them, and how these will help them to achieve the desire learning outcome (Gros, 2007).

One possible danger of gamification is that it can transform a class into a game. This is not only about scoring points through each activity, teachers are supposed to treat gamification as any other tool in their teaching-learning process, which means they have to take into account all stages needed when preparing a class such as Planning, designing, executing, monitoring and feedback (Hernández, 2011). Furthermore, vocabulary knowledge also involves other aspects besides the knowledge of a form-meaning connection (Nation, 2013), which opens new doors for this study to expand and explore in further research

What we know so far is that it is possible to acquire vocabulary through repetition, in that sense gamification offers an environment to engage and motivate students to persist in their learning. The results of this study showed that gamification is useful to create more interaction among students and that motivation increases in the classroom when teachers have used it in vocabulary learning activities. Students enjoyed the games, found the class more dynamic, and fun, and suggested that online games were used more often in class. They seemed to appreciate the feedback which can help to raise learners' self-esteem and motivation.

CONCLUSIONS

This was a comparative research study that examined Gamification as a strategy for vocabulary acquisition which shows us in terms of students' learning performance was much better in their competency. Knowing how to motivate the present generation so that they can learn better and know what their learning styles are has become a new challenge for the educational system (Campbell, 2016). Students through gamification showed more competence in learning and mastering new vocabulary skills either in the classroom or outside of the class. Students were also able to use technology and ask critical questions, producing critical thinking. This can be summarized that students felt more competent as they had more opportunities to practice the vocabulary learned interactively and take ownership of their learning, as well as compete for the gamified activities.

In addition, the perceptions of most students about the use of online gamification to review vocabulary were positive since the activities were successfully integrated into the teaching-learning process in a flexible learning environment, focused learning was developed in the student, promoting autonomous learning and training critical thinkers.

In conclusion, it can be established that the use of Gamification as a strategy for the acquisition and retention of vocabulary contributes positively to the learning experience based on autonomy, motivation, and social interaction. In addition, students showed progress from an introverted mode of shyness and became more motivated based on the positive feedback and the elements of the game used. Although we focus on the learning outcomes of new vocabulary, the application of gamification has the potential to improve other aspects of the learning environment, such as gamut, reading, motivation, and satisfaction of students in many settings and disciplines (Rivera & Garden, 2021).

Through Gamification, the educator can create meaningful experiences that will move away from just a game-thinking mentality to a techno-constructivist mentality. To achieve success with Gamification in learning the objectives and goals need to be aligned and have formal assessment criteria. According to Fogg (2002), by selecting the proper tools positive changes in students' behavior will happen.

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