Revista de Lingüística y Lenguas Aplicadas
Vol. 19 año 2024, 33-43
EISSN 1886-6298
https://doi.org/10.4995/rlyla.2024.19932

# THE IMPACT OF A GAMIFIED APPROACH ON VOCABULARY LEARNING AND VOCABULARY SELF-EFFICACY: EVIDENCE FROM A CHILEAN PRIMARY EFL SCHOOL

Marco Cancino
Camila Viguera
*Universidad Andres Bello*

***Abstract:*** *Although many studies addressing gamified approaches have documented the performance and perceptions of adult EFL learners, little research has been conducted with younger students and with a focus on specific linguistic components. Therefore, the present study assessed the impact of a gamified approach involving the use of Kahoot! on the vocabulary learning and vocabulary self-efficacy of 122 primary EFL school learners. A quasi-experimental design was applied where participants were divided into an experimental group (n = 57) that was exposed to vocabulary learning through Kahoot! and a control group (n = 65) that received traditional coursebook instruction. Ten target words were assessed through a vocabulary learning post-test, while vocabulary self-efficacy was evaluated through a questionnaire. Results revealed that both groups performed equally well regarding lexical gains, and that students in the experimental group significantly increased their vocabulary self-efficacy when compared to the control group. Pedagogical implications are discussed.*

***Key words:*** *gamification, vocabulary learning, vocabulary self-efficacy, EFL learning.*

## 1. INTRODUCTION

One of the most relevant educational changes over the past decades has been the shift from an instructivist (i,e., teacher-centered) to a constructivist (i.e., student-centered) approach to knowledge building (Félix, 2005). Although teachers have typically played a central role in educational settings, addressing the impact of students' learning experiences has gained relevance since the mid 1990s (Poon, 2013). Thus, new educational approaches and strategies that focus on learners have emerged. Teachers have been prompted to acknowledge the learning needs of the students, provide support when it is needed, and select the most appropriate materials to meet those needs. One of these approaches is gamified learning, a methodology that has been systematically introduced in educational contexts to foster students' participation and learning. The term gamification is used to refer to the application of game features in non-gaming environments, such as commerce, business, informatics, and education (Cancino & Castillo, 2021) with the purpose of promoting learning, employee performance, and customer engagement, among other goals (Busch, 2014). More specifically, gamification in education is characterized by the introduction of game elements in the design of language learning approaches, which makes the process more collaborative, flexible, and student-centered (Félix, 2005), and nurtures a sense of fun and accomplishment. In order for learners to access the benefits of gamified lessons, resources such as leaderboards, quick feedback, badges are introduced in an environment that reduces learner anxiety. Teachers typically perceive that gamified approaches tend to increase students› motivation to learn and make them value the educational process more significantly (Alabbasi, 2017). If learners "do not experience effective learning without the motivation to do so" (Tan Ai Lin et al., 2017: 567), then their perceptions towards learning will likely influence their learning outcomes. These perceptions can be related to motivation, satisfaction, and the learning process (Chen & Jang, 2010).

A construct that is closely related to the outcomes of a gamified approach is self-efficacy, defined by Bandura (1997: 48) as "the perception an individual has of their own abilities to carry out a task or to acquire new knowledge". As Cancino et al. (2022: 2) state, "those individuals who perceive outcomes as determined by their behavior are more likely to succeed than those who view them as determined by external factors". Cancino et al. go on to argue that teachers should create activities that allow learners to gauge their own success and the success of their peers, so that they can engage in self-regulation processes and in turn modify their beliefs about what they can do. This will likely impact the effort that is placed when learning linguistic skills or components (Wang et al., 2014). Moreover, students with higher levels of self-efficacy have been found to feel more confident in their own

**To cite this article:** Cancino, M., & Viguera, C. (2024). "The impact of a gamified approach on vocabulary learning and vocabulary self-efficacy: evidence from a Chilean primary EFL school". *Revista de Lingüística y Lenguas Aplicadas*, *19*, 33-43. https://doi.org/10.4995/rlyla.2024.19932
**Correspondence author:** marco.cancino@unab.cl



Received: 2023-06-23 Accepted: 2024-05-15

abilities and perform at a higher cognitive level (Mizumoto, 2013). Most of the quantitative research in the area of gamification, vocabulary learning, and self-efficacy has focused on learners at secondary education or university levels. Little research in general has been conducted with younger students in primary education linking a linguistic component such as vocabulary learning with vocabulary self-efficacy in a gamified environment. Therefore, the purpose of the present study was to assess the impact of a gamified approach involving the use of the learning tool Kahoot! on the vocabulary learning of primary school EFL learners. In addition, the study sought to explore the perceptions of students toward learning with the gamified approach regarding vocabulary self-efficacy. The research questions of the present study are as follows:

RQ1: What is the impact of a gamified approach involving Kahoot! on young EFL learners' L2 vocabulary learning?

RQ2: Does vocabulary self-efficacy increase after being exposed to the gamified approach?

## 2. LITERATURE REVIEW

### 2.1. Gamification and education

The term "gamification" can be defined as the use of game elements in non-game contexts such as educational settings (Figueroa, 2015; Sanchez et al., 2016). This is done to improve engagement with a given activity and reduce tediousness towards the learning task (Goehle, 2013). The game elements can be incorporated to any task, assignment, or content. Thus, the objective of gamification is for the learner to be motivated by the inclusion of these game elements in the classroom, because "this creates in the user a sense of empowerment and engagement" (Figueroa, 2015: 38). Furthermore, gamification seeks to increase motivation through involvement by means of game mechanics and game-based elements that improve the user experience (Seaborn & Fels, 2015; Toledo et al., 2019). Points, badges, and leaderboards are introduced in the gamification process, as they encourage students to be more goal oriented, increase their persistence, work in teams, and engage in friendly competition with their peers (Ding, 2019). There is evidence suggesting that the use of gamification strategies increases students' motivation and engagement in educational settings (Toda et al., 2019). Gamification is then considered to be a methodological strategy where the application of game design elements in a nongame context is used to promote expected behaviors or to solve problems (Zichermann & Cunningham, 2011) with the objective of engaging and motivating the learners. Indeed, the use of gamification in educational contexts has steadily increased (Majuri et al., 2018), mainly due to more extensive learner access to cellphones and laptops (de Byl, 2013). The use of gamified strategies can have a positive effect on the students' attitude and behavior, which in turn can influence learner-content interaction and how learning objectives are achieved (Rivera & Garden, 2021). It has been documented that teachers› main classroom issues are related to low student involvement and a lack of learning drive (Lee & Hammer, 2011). Thus, gamification has emerged as a consistent technique for addressing motivation and engagement challenges (de-Marcos et al., 2014).

Gamified learning settings can boost students› motivation, knowledge, critical thinking, independence, and cooperation as well as promote teamwork (Campillo-Ferrer et al., 2020). According to Chapman and Rich (2018), gamification implies taking the motivational ideas derived from games and including them as a layer of interaction in non-game scenarios. This provides students with a safe space to make mistakes during their learning process (Clark et al., 2011). Failure does not involve high-stakes risk for learners engaged in game-like activities, as is the case with traditional classroom instruction where failing is typically avoided. Consequently, learners' anxiety and stress brought about by the fear of failure is reduced (Lee & Hammer, 2011). In gamified contexts, players can fail as many times as they need to, and the teachers' role is to provide helpful feedback and encourage learners to persist in their learning activity.

### 2.2. Gamification on EFL settings: The use of Kahoot!

With the advent of digital technology, there has been a rapid rise in the demand to learn English as a second or foreign language (Jin, 2017). This rapid development has signified a switch from traditional learning to more active learning methods (Renandya & Widodo, 2016). The shift is very relevant in EFL settings, since students in many such contexts regard language learning as a challenging, stressful, and difficult process (Turgut & İrgin, 2009). In order to increase EFL students› motivation and learning outcomes, it is necessary to consider their views and feelings toward gamification in the language learning process. For young learners, the use of gamified strategies can make classes more entertaining and engaging, providing an atmosphere that increases their motivation and the development of metacognitive achievement (Mahayanti et al., 2020). In this respect, recent studies have reported positive findings in relation to the adoption of gamified approaches for vocabulary learning in EFL learning settings (Fithriani, 2021). Applications such as Kahoot! have been increasingly included as gamified approaches in the EFL classroom. This application is a "game-based student response system where the classroom is temporarily transformed into a game show where the teacher is the game show host, and the students are the contenders" (Wang & Tahir, 2020: 2). The platform allows teachers to create their own content, and students can join without a need to register. Learners

can use nicknames and engage in learning quizzes and similar activities to increase their knowledge in particular content areas. Students are awarded points when they answer correctly as part of a classroom competition. A literature review conducted by Wang and Tahir (2020) revealed that Kahoot! is an engaging and motivating approach that enhanced learners› language learning outcomes, along with heightening their focus and attentiveness. Figure 1 displays a sample of a vocabulary activity that is projected on the classroom board.

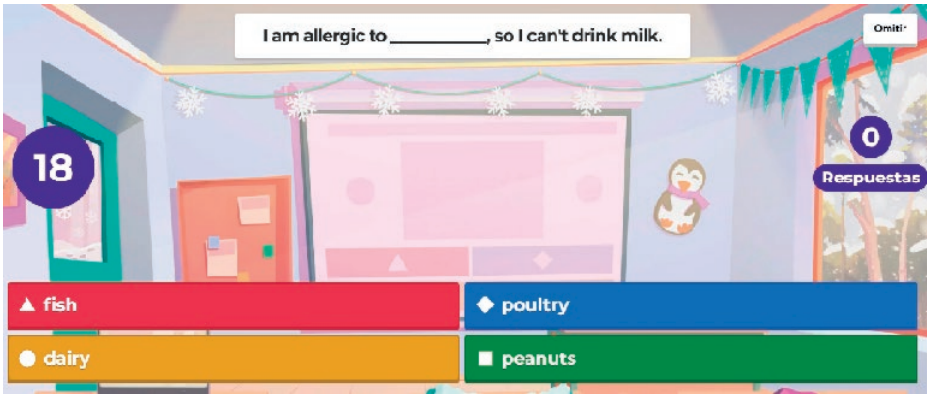


**Figure 1.** Kahoot!'s sample quiz item.

### 2.3. Vocabulary learning

Vocabulary is a basic component of language knowledge found in several L2 language skills (Fithriani, 2021). Typically, L2 vocabulary represents two dimensions of knowledge that need to be considered: vocabulary depth and vocabulary breadth. Vocabulary depth refers to the learner›s degree of knowledge of various aspects of a given word, while vocabulary breadth refers to the number of words for which a learner has at least some minimum knowledge of meaning (González-Fernandez & Schmitt, 2019). The degree to which a learner processes the lexical items can also be mediated by the nature of the activity in which those lexical items are learned. Thus, vocabulary can be learned in two main ways: incidentally or intentionally (Wilkinson, 2017). Incidental learning refers to "the acquisition of a word or expression without the conscious intention to commit the element to memory" (Hulstijn, 2013: 2632), while intentional learning is the "deliberate attempt to commit factual information to memory" (Hulstijn, 2013: 2632). It has been suggested that most of the L2 vocabulary that is learned by an individual takes place through listening and reading activities that do not focus on vocabulary learning (Webb & Chang, 2020). Intentional learning, on the other hand, can increase specific learning of a discrete number of items, but may not help increase vocabulary breadth (Lee, 2022). While incidental vocabulary acquisition is achieved by carrying out activities without the intention to learn the vocabulary, such as extensive reading, intentional learning occurs when learners complete activities with the specific purpose of acquiring vocabulary (Wilkinson, 2017). In language learning studies involving vocabulary learning, the approach has been labeled "incidental" when participants are not told in advance that their vocabulary will be assessed by means of a test (Godfroid et al., 2018).

### 2.4. Self-Efficacy and EFL learning

Bandura (1997: 48) defines self-efficacy as "the perception an individual has of their own abilities to carry out a task or to acquire new knowledge". He found that individuals with high self-efficacy are typically more motivated to take on more challenging and difficult tasks than individuals with lower self-efficacy, who tend to avoid such tasks because they believe they will not be able to successfully complete them. Thus, individuals who display high self-efficacy will tend to challenge themselves with difficult tasks because they believe they can achieve good results through their completion. On the other hand, people displaying low self-efficacy concentrate more on their flaws and potential shortcomings when facing challenges, which prompts them to give up easily. In educational settings, self-efficacy has been correlated with academic achievement (Pajares & Urdan, 2006). More specifically, in language learning contexts, the way in which learners perceive their abilities to complete tasks can influence their linguistic performance (Raoofi et al., 2012), and their perceptions toward and enjoyment of the learning of those linguistic skills (Genç et al., 2016). Furthermore, self-efficacy increases motivation in language learners, promotes learner strategy use, and facilitates learner autonomy (Mizumoto, 2012). Students› motivation, attitude, self-esteem, and self-efficacy may decrease if they are unable to meet literacy requirements at school, which may involve vocabulary learning. Mizumoto (2012) identified a significant relationship between self-efficacy, vocabulary size, and vocabulary learning strategies, which suggests that students with higher levels of self-efficacy achieve better learning outcomes and make more use of vocabulary than learners with low self-efficacy.

### 2.5. Empirical studies on gamified approaches and EFL vocabulary learning

Studies addressing gamified approaches have identified benefits for the L2 learning process (Mahayanti et al., 2020). Solano (2022) analyzed the impact of online gamified strategies using "Genially", a web-based media platform on 65 Ecuadorian adult EFL students. They were divided into an experimental group receiving gamified instruction for 16 weeks and a control group. Results revealed that learners who received gamified instruction outperformed learners in the control group in grammar and vocabulary post-tests. In addition, semi-structured interviews showed that use of the gamified tool increased students' motivation when it was accompanied by effective feedback. In contrast, Panmei and Waluyo (2022), applied a quasi-experimental design to assess the effect of gamification on the vocabulary learning of 100 Thai undergraduate EFL learners. To this end, they selected the learning application *Quizziz* and created a treatment for an experimental group that would be exposed to the tool and included a control group that received traditional textbook learning. Learning outcomes were assessed along with learners' perceived usefulness of gamification in increasing learners' autonomy in vocabulary learning. Results showed that although the gamification application fostered vocabulary growth, there were no overall significant differences between the experimental and control groups in terms of vocabulary learning and autonomy perceptions. The authors surmised that utilizing an application that was not specifically created for vocabulary learning may not yield higher vocabulary gains. Similar vocabulary outcomes were reported by Sadeghi et al. (2022), who compared the vocabulary growth and motivation of 32 Turkish students enrolled in an English language preparatory program. The participants were divided into an experimental group that was exposed to gamified learning, and a control group. Vocabulary test results and motivation questionnaire data revealed that gamified instruction had a favorable impact on students' motivation, but there were no significant differences in the vocabulary learning achieved by both groups. Cancino and Castillo's (2021) mixed-methods approach yielded comparable findings. They divided 51 ninth grade EFL learners into an experimental group that received gamified instruction on vocabulary learning by means of a card game and a control group that received traditional textbook vocabulary learning instruction. Results from vocabulary test data revealed that the participants that were exposed to the card game performed at least as well in the vocabulary tests as the students in the control group, which highlights the relevance of gamified approaches involving non-virtual games in learning. In addition, semi-structured interviews revealed that learners who played the card game reported increased engagement with vocabulary learning.

With a focus on the gamified application Kahoot!, Rojabi et al. (2022) sought to evaluate how Kahoot›s course materials affected the motivation, engagement, and vocabulary test scores of 82 first-year university students undertaking a compulsory EFL course. Quantitative and qualitative results suggested that using Kahoot! for vocabulary instruction enabled students to deepen their comprehension of vocabulary and course concepts – as shown by exam score improvement – and that the approach had a positive impact on students' engagement and motivation. Focusing on perceptions toward Kahoot!, Alawadhi and Abu-Ayyash (2021) applied a mixed-methods approach with 112 undergraduate Arab students completing a one-year English language program. The authors found that students displayed positive feelings when using Kahoot! and that it could positively influence their motivation, classroom engagement, and learning experience. However, students did not think that the gamified approach increased their actual academic performance. This could be explained by the lack of evaluation regarding specific linguistic components when implementing gamified approaches. Finally, Chen (2022) investigated whether the translation skills, motivation, and engagement of 75 university undergraduate Taiwanese EFL students could be enhanced with a gamified application and Google apps. Participants completed vocabulary tests, a survey, and semi-structured interviews, which revealed that both the gamified application and Google app approaches could enhance learner performance, and their motivation to learn. Overall, the studies reviewed suggest that introducing a game-based approach to language learning can increase learners' performance in linguistic skills, their motivation toward the learning process, which is in turn related to higher levels of self-efficacy. At the very least, game-based language learning was found to be as effective as regular coursebook instruction, with the added benefit of increasing learners' motivation, engagement, and self-efficacy. However, the impact of the approach on specific linguistic components in young EFL learners remains unexplored. Thus, it becomes relevant to assess the impact of a gamified approach on young EFL learners' vocabulary learning and their vocabulary self-efficacy.

## 3. METHODOLOGICAL FRAMEWORK

### 3.1. Overall research design

The purpose of this study is to assess the impact of a gamified approach involving Kahoot! on the vocabulary learning and the vocabulary self-efficacy of fifth grade students in a Chilean private school. A quasi-experimental design was applied where participants were divided into an experimental group ($n$ = 57) that was exposed to vocabulary learning through Kahoot! for six weeks and a control group ($n$ = 65) that received traditional coursebook vocabulary instruction. Ten target words were assessed by means of a vocabulary learning post-test, while vocabulary self-efficacy was evaluated through a questionnaire. Descriptive and inferential (independent t-tests) statistics were reported with the findings.

### 3.2. Participants and context

The participants in the present study were 122 students in fifth grade (10-11 years old) at a Chilean private primary school. The proficiency level of the participants was controlled by means of the Cambridge Flyers (Cambridge English, n.d.) exam assessing reading and writing skills. Baseline test results showed that the average level of the participants was A1 (based on CEFR levels). Additionally, no significant differences ($p$ >.05) in baseline proficiency scores were found between the control ($M$ = 40.94) and experimental ($M$ = 41.89) groups in the reading and writing component. Regarding the EFL educational setting background for the study, Chilean education has gone through some reformulations in relation to the EFL curriculum over the last 30 years. At the turn of the century, listening and reading development was the main focus in the curriculum, rather than productive skills (i.e., speaking and writing). In the following years, adjustments to the English curriculum were introduced by the Ministry of Education, acknowledging that the focus on receptive skills was not enough to allow students to be competent in a globalized world. Further adjustments involved the development of both receptive and productive skills as part of a communicative approach (Barahona, 2014).

### 3.3. Instruments

#### *3.3.1. Yes/no checklist and target words*

An adapted version of a Yes/No checklist (Lee & Pulido, 2016) was used to identify ten unknown target words. The instrument included 25 words taken from Unit 4 *Sports and Health* of the coursebook *On Screen* (Express Publishing, 2015), which was used by both the experimental and control group in the EFL lessons. Participants were asked to respond whether they knew a word and provide its L1 (Spanish) translation or L1 definition. A sample item is included below.

| 1. to peel | |
|---|---|
| Yes | No |
| L1 translation or L1 explanation: | |

The Yes/No checklist allowed the researchers to identify ten target words that were completely unknown to participants. 141 students were asked to complete the instrument, and 122 participants were found to have no prior knowledge of the ten target words. The target words comprised six nouns, three verbs, and one adjective. The ten target words are shown below.

1. wrist
2. tin
3. sprain
4. bruise
5. poultry
6. dairy
7. to chop
8. to peel
9. to boil
10. sore

#### *3.3.2. Receptive knowledge of meaning and form test*

Target word learning was assessed by means of the receptive knowledge of meaning and form test (Webb, 2007). This instrument is sensitive to vocabulary gains because it presents items through a multiple-choice format. Participants are presented with the L2 word and are asked to select the correct alternative that contains the L1 meaning of said word. Correct answers receive one point. The distracters provided corresponded to the same part of speech as the target word and were devised following Lee and Pulido's (2016) guidelines. In addition, the option "I don't know" was included to reduce guessing. A sample item that includes the distracters and their functions is presented below.

Dairy (target word)

a. lácteos (correct answer)

b. día ("day". A distracter that is phonologically similar to the target word in the L1 or L2)

c. proteína ("protein". A distracter contextually close to the target word)

d. cama ("bed". A distracter that shares no relation to the target word)

e. no sé ("I don't know")

#### *3.3.3. Vocabulary self-efficacy questionnaire*

Mizumoto's (2013) vocabulary self-efficacy component (see appendix) was adapted to assess vocabulary self-efficacy. The component includes four items addressing the construct (e.g., "I am good at memorizing vocabulary") as part of a six-point scale ranging from 1 ("not true for me") to 6 ("very true for me"). The instrument was translated into Spanish and administered to both the experimental and control groups in a pre-test/post-test design to identify any differences in the perceptions of the students in relation to their vocabulary self-efficacy after gamified instruction. The Cronbach's alpha value reported by Mizumoto (2013) in the vocabulary self-efficacy component was 0.88, which is similar to the pre-test/post-test values (over 0.9) found in the present study, which suggests high reliability.

### 3.4. Procedures

Before the study was conducted, the Yes/No questionnaire and the vocabulary self-efficacy instrument were piloted with 30 fourth grade students to identify potential issues with instructions. No major comprehension problems were reported by the students. Once consent was secured from the 122 participants in the study, the Yes/No questionnaire was administered to identify the ten unknown target words for the study. This was followed by the vocabulary self-efficacy questionnaire as a pre-test. Then, the experimental group was exposed to a gamified approach for six weeks. This approach involved learning the target words through activities focused on a gamified approach involving Kahoot!. In the activities, participants had to use the tool to complete activities prompting them to select the correct alternative to complete a sentence, choose the words that corresponded to different pictures, and select whether particular statements including vocabulary from the unit were true or false. In the control group, participants learned the target words exclusively by means of traditional coursebook instruction, which included student's book activities such as fill-in-the-blanks, multiple choice, sentence creation, and worksheets.

Once the treatment was completed, the receptive knowledge of meaning and form post-test and the vocabulary self-efficacy questionnaire were administered to both groups to assess any differences in vocabulary gains and vocabulary self-efficacy perceptions, respectively. A summary of the procedures can be seen in Figure 2.

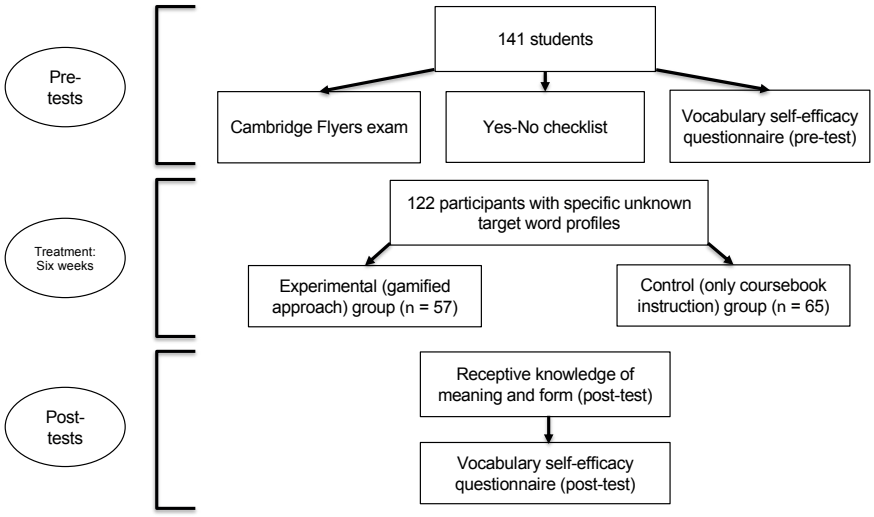


**Figure 2.** *Summary of the experimental procedures.*

Descriptive statistics were computed for post-test data from the receptive knowledge of meaning and form test and the vocabulary self-efficacy questionnaire. For the latter, mean gains were calculated (the pre-test scores were deducted from post-test scores) in order to account for pre-test data. Independent t-tests were run with these variables to assess any significant differences between the performance of both groups in the post-tests.

## 4. RESULTS

### 4.1. Descriptive statistics for vocabulary posttests and vocabulary self-efficacy scale

Table 1 displays descriptive statistics for the vocabulary learning post-test scores of the participants in the receptive knowledge of meaning and form post-test, and the mean gains for the vocabulary self-efficacy questionnaire.

**Table 1.** Descriptive statistics for the receptive knowledge of meaning and form post-test and the vocabulary self-efficacy mean gains across groups.

| | Group | Statistic | |
|---|---|---|---|
| Receptive knowledge of meaning and form post-test | Control | Mean | 9.74 |
| | | Std. Deviation | 0.57 |
| | Treatment | Mean | 9.75 |
| | | Std. Deviation | 0.91 |
| Mean gains vocabulary self-efficacy scale | Control | Mean | 0.05 |
| | | Std. Deviation | 0.17 |
| | Treatment | Mean | 0.26 |
| | | Std. Deviation | 0.27 |

The means of participants in the receptive knowledge of meaning and form post-test for the control group ($M$ = 9.74; $SD$ = 0.57) and the experimental group ($M$ = 9.75; $SD$ =0.91) were very similar, indicating that learners in both groups made vocabulary gains. Regarding the vocabulary self-efficacy questionnaire, an increase in mean gain scores can be observed in the experimental group ($M$ = 0.26; $SD$ = 0.27) when compared to the control group ($M$ = 0.05; $SD$ = 0.17).

### 4.2. Inferential statistics

The independent t-test performed with the receptive knowledge of meaning and form post-test data revealed that the differences between the means in both groups were not significant, $t(120) = -0.117$, $p > 0.05$, 95% CI [-0.285,0.253]. Another independent t-test was run to assess the differences between the vocabulary self-efficacy scale mean gains of participants in the control group and the experimental group. A statistically significant difference was found, $t(120) = -5.191$, $p < 0.001$, 95% CI [-0.288, -0.129]). This showed that there was a statistically significant difference between the mean gains of both groups regarding vocabulary self-efficacy, where participants in the experimental group made more gains.

## 5. DISCUSSION

### 5.1. RQ1: What is the impact of Kahoot! as a gamified approach on young EFL learners' learning of L2 vocabulary?

Results for the independent t-tests conducted with the receptive knowledge of meaning and form post-test data revealed that both the experimental and control groups performed equally well regarding vocabulary gains. Therefore, it can be stated that using a gamified approach to learn vocabulary was at least as effective as learning vocabulary by means of a regular classroom instruction. The high number of lexical items remembered in both the experimental and control groups is similar to the academic outcomes reported in the literature. For example, Panmei and Waluyo (2023) and Sadeghi et al. (2022), reported no significant differences in vocabulary gains between a group that learned through a gamified approach and a group that received traditional coursebook instruction, and concluded that learners exposed to gamified learning can perform as well as learners exposed to traditional textbook approaches to vocabulary gains. Likewise, Cancino and Castillo (2021) reported that participants who were able to play a card game that included target words made similar vocabulary gains to the students in a control group receiving regular vocabulary learning instruction. This provides further evidence for the effectiveness of gamified approaches in vocabulary learning. Perhaps the high vocabulary scores of participants in both groups prevented the study from identifying more evident differences between the two instruction

approaches. A common feature in the mentioned studies is that the use of gamified approaches also increased the engagement of the students toward the learning of vocabulary. It would seem that gamified approaches can be as effective as traditional coursebook instruction but at the same time can bring about further benefits to the learning process.

### 5.2. RQ2: Does vocabulary self-efficacy increase after being exposed to the gamified approach?

Results regarding vocabulary self-efficacy revealed that the mean gains in both conditions were significantly different, indicating that students who were exposed to a gamified approach improved their perceptions of what they could do with vocabulary and how they felt towards learning it. On the contrary, participants who received a traditional coursebook approach to vocabulary learning did not significantly increase their vocabulary self-efficacy. Chen's (2022) study reported similar results, as the author found that learners' motivation increased by means of gamified approaches. Even though motivation was not directly assessed in the present study, it can be argued that students who are exposed to a gamified approach can increase their vocabulary self-efficacy, which can consequently enhance learners' engagement and motivation. In line with this argument, Oyama (2022) found that enjoyment, self-efficacy, and engagement were highly correlated, and that lower levels of self-efficacy can impinge upon enjoyment. This suggests that more traditional approaches to vocabulary learning may not boost learners' affective aspects of learning in the same way as gamified approaches. The control group did not increase their vocabulary self-efficacy perceptions because a lack of enjoyment may have prevented these learners to increase their self-efficacy (Genç et al., 2016). In addition, learners' motivation can be increased through exposure to gamified approaches (Chen, 2022), which can result in higher self-efficacy levels (Oyama, 2022). Thus, based on the relationships between the constructs identified by Oyama (2022), these results indicate that the use of gamification had a positive impact on students' self-efficacy, which in turn may have increased their engagement and motivation (Rojabi et al., 2022; Sadeghi et al., 2022).

Overall, the findings in the present study revealed that both the experimental and control groups performed equally well in relation to vocabulary learning, contributing to the evidence suggesting that the use of a gamified approach is as effective for vocabulary learning as more traditional approaches (Panmei & Waluyo, 2022; Sadeghi et al., 2022). The gamified approach comes with the benefit of increasing students' self-efficacy, which has been linked to increased motivation and engagement (Oyama, 2022). Increasing vocabulary self-efficacy by means of gamified approaches in students can positively change the perceptions that they have in relation to their own vocabulary learning skills and can increase their confidence in their linguistic abilities while supporting learning.

## 6. CONCLUSION

The aim of the present study was to assess the impact of a gamified approach involving Kahoot! on L2 vocabulary gains and assess any changes in vocabulary self-efficacy reported by the participants. Results indicated that applying a gamified approach can be as effective as an approach involving traditional coursebook instruction in relation to linguistic components such as vocabulary learning. Results also highlighted the relevance of gamified approaches in increasing learner vocabulary self-efficacy, which can positively affect the engagement and motivation of the students towards the learning of the language. Indeed, students that display high vocabulary self-efficacy levels tend to enjoy and feel more motivated toward the vocabulary learning process, an aspect that can help teachers and practitioners introduce approaches to learning that consider gamified learning. A limitation of the study was related to the lack of delayed vocabulary testing. A post-test assessing vocabulary retention after two weeks could have confirmed the impact of Kahoot! on vocabulary gains by including a new layer of academic impact. Further studies should include a delayed measure in similar quasi-experimental designs. Another limitation refers to the high vocabulary learning scores yielded by both experimental and control group. It becomes necessary to design studies that comprise more lexical items so as to differentiate vocabulary gains across groups, even if this implies reducing the ecological validity of the study (e.g., including lexical items that do not appear in the textbooks).

### 6.1. Implications of the study

The implications for pedagogy that the present study can put forward are related to the advantages that teachers can identify regarding gamified approaches in the EFL classroom. If these approaches are as effective as traditional approaches to language learning but allow learners to increase their self-efficacy and motivation, then teachers could benefit from including them as part of their EFL programs to foster vocabulary learning. Several game-based perspectives can make use of gamified components to enhance learning and engagement. They can range from gamified approaches that do not require the use of technology (such as card games) to approaches that require the use of laptops or smart phones. Game-based learning increases self-efficacy, motivation, and engagement, and seems to yield academic outcomes that are on par with traditional learning approaches.

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## APPENDIX

Items in the vocabulary self-efficacy component (Mizumoto, 2013)

I am good at memorizing vocabulary.
*Soy bueno/a memorizando vocabulario*.

I know more vocabulary then my classmates.
*Conozco màs vocabulario que los demás.*

I know basic vocabulary.
*Conozco vocabulario básico.*

I think that I would get good results in a vocabulary test.
*Creo que obtendría buenos resultados en una prueba de vocabulario.*