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THE EFFECT OF GAMIFIED LEARNING ON STUDENTS' MOTIVATION AND VOCABULARY RETENTION

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Abstract
This study explores the impact of gamified learning strategies on students' motivation and vocabulary retention in English as a Foreign Language (EFL) context, an area of increasing importance given the need to enhance engagement and learning outcomes through innovative methods. Recent studies indicate that game elements such as points, badges, and leaderboards can positively influence learner motivation and facilitate vocabulary acquisition. However, the effects of gamification on both motivational and cognitive aspects of language learning, particularly in terms of long-term retention and sustained engagement are still underexplored. The aim of this research is to investigate how gamified instruction affects students' motivation and vocabulary retention and to analyze the relationship between these two factors. Employing a quasi-experimental design, the study involved 85 intermediate-level EFL learners divided into gamified and non-gamified groups. Data were collected through validated questionnaires assessing motivation a vocabulary tests measuring retention, and post-intervention reflection surveys to capture students' perceptions of specific gamification elements. Data analysis involved descriptive statistics, independent t-tests to compare group differences, Pearson correlation analyses to explore relationships between motivation and retention, and a multiple regression analysis to explore the impact of game elements. The findings demonstrate that students in the gamified group exhibited significantly higher motivation and better vocabulary retention compared to their counterparts. Moreover, motivation was positively correlated with vocabulary retention, highlighting the importance of engaging instructional strategies. The implications of this study suggest that well-designed gamified learning can serve as an effective pedagogical tool to boost motivation and facilitate long-term vocabulary retention in EFL teaching. Furthermore, the results underscore the need for educators to thoughtfully incorporate game elements and tailor initiatives to learner needs, emphasizing the potential of gamification to transform language education into an engaging, effective process. Future research should explore the long-term effects and broader applicability across diverse educational settings.

Keywords: Gamified learning, student motivation, vocabulary retention

INTRODUCTION

The integration of technology into educational practices has reshaped traditional learning environments, introducing innovative methods to enhance student engagement. One such method is gamified learning, which applies game design elements in non-game contexts, particularly in the classroom. As English continues to serve as a global lingua franca, vocabulary acquisition remains a fundamental component of English language learning. Within this context, gamification offers a promising strategy for making vocabulary learning more dynamic, interactive, and learner-centered.

Sustaining student motivation and improving vocabulary retention are persistent challenges in language education. Traditional methods often fail to address students' short attention spans and lack of sustained interest. Engaging learners through game-based elements not only fosters a more stimulating learning atmosphere but also promotes intrinsic motivation and long-term retention of

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vocabulary. Understanding the extent to which gamified learning impacts these areas is essential in informing instructional practices that align with learners' needs in digital and interactive learning environments.

Recent studies have demonstrated the potential of gamified approaches in language learning. For example, Baroroh et al. (2021) found that gamification enhances learner motivation in mobile-assisted language learning. Similarly, Kohnke and Moorhouse (2021) reported positive effects of game elements on vocabulary acquisition and learner engagement. A study by Gao et al. (2020) indicated that the use of points, badges, and leaderboards positively influenced learners' vocabulary performance. Furthermore, Yeganehpour and Zarfsaz (2021) showed that gamified mobile apps contributed significantly to both short-term and long-term vocabulary retention. However, the effects of specific game-based interventions on both motivation and vocabulary retention, when measured concurrently, remain underexplored.

While current research underscores the effectiveness of gamified tools in enhancing language learning outcomes, few studies have simultaneously measured their impact on both learner motivation and vocabulary retention. Moreover, existing literature often emphasizes short-term engagement without sufficiently addressing the sustained effects of gamified interventions on memory retention. The focus has typically been on classroom enjoyment and user satisfaction, rather than assessing measurable learning outcomes in tandem with affective responses.

This study explores the dual effect of gamified learning activities on students' motivation and vocabulary retention, using empirical data to analyze both cognitive and affective domains. Unlike previous research that isolated one aspect, this investigation integrates both constructs within a single instructional context. By examining the relationship between learners' motivation levels and their vocabulary retention following gamified instruction, the study provides a more comprehensive understanding of how such approaches function in language classrooms. The objectives are to measure the impact of gamification on students' motivation, to assess vocabulary retention after gamified instruction, and to determine the relationship between motivation and retention.

Findings from this study offer new insights into how learning environments can be designed to optimize student engagement and retention. Classroom instruction may be refined to align better with learners' preferences, while teacher training programs can integrate these approaches to enhance instructional effectiveness. Curriculum designers and educational app developers may also benefit from an understanding of how game mechanics influence learner behavior and retention. These insights hold value for those seeking to create more interactive and impactful English learning experiences.

This study contributes to the field of English Language Teaching by offering empirical evidence on the dual role of gamified learning in enhancing motivation and retention. It contributes to closing the methodological divide between affective and cognitive research by presenting an integrated framework for analyzing both. Additionally, the study contributes practical insights into designing vocabulary instruction that incorporates game-based strategies, thereby equipping educators with data-driven tools to foster student success in vocabulary learning.

Hypotheses:

H_1: Students exposed to gamified learning demonstrate higher motivation levels than those in non-gamified settings.

H_2: Students exposed to gamified learning retain significantly more vocabulary than those in non-gamified settings.

H_3: There is a positive relationship between students' motivation and their vocabulary retention following gamified instruction.

H_4: The use of game elements such as points, badges, and leaderboards significantly enhances vocabulary retention.

LITERATURE REVIEW

Gamified Instruction and EFL Learner Motivation

Gamified instruction has become increasingly popular as an innovative teaching strategy, especially in the context of English as a Foreign Language (EFL). This approach incorporates game design elements—such as points, badges, levels, and rewards—into learning environments to increase motivation, engagement, and retention. By transforming traditional tasks into game-like experiences, gamification encourages learners to participate more actively and consistently. It also supports emotional engagement, making the learning process more enjoyable and memorable. Research shows that this method not only boosts students' enjoyment but also helps improve various academic skills across different educational settings (Cheng et al., 2025; Zhang & Hasim, 2023).

At the heart of gamified learning lies the integration of game-based features—such as scoring systems, achievement levels, and friendly competition—into standard classroom instruction. These elements stimulate learner interest and help create a more engaging and interactive environment. Students become more intrinsically motivated as they work toward goals and receive recognition for their progress. For example, Cheng et al. (2025) found that gamified instruction significantly improved both reading proficiency and language enjoyment among EFL students. Similarly, Zhang and Hasim (2023) showed that using game elements in language learning increased motivation and engagement levels. Such findings highlight the practical value of incorporating gamification into EFL classrooms.

Another important benefit of gamification is its ability to reduce language anxiety, a common challenge among EFL learners. Traditional classroom settings can often feel intimidating, especially when students are asked to speak or write in a foreign language. Gamified tasks, however, provide a low-pressure environment where learners can take risks without fear of failure. Alfares (2025) found that gamified activities helped decrease students' anxiety and encouraged more open engagement with the target language, leading to improved vocabulary retention and language proficiency. Likewise, Irzawati and Unamo (2023) noted that tools like Duolingo helped students develop positive attitudes toward language learning, making the process more enjoyable and less stressful.

Gamification also enhances the social dimension of learning by encouraging collaborative and competitive interaction. In EFL settings, this often leads to improved communication skills and peer support. Hong (2022) emphasized that collaborative tasks in gamified environments help maintain student motivation through social engagement. Moreover, features such as leaderboards and team

challenges promote a sense of belonging and foster healthy competition. According to Helvich et al. (2023), these elements not only motivate students to improve individually but also strengthen group dynamics and cooperation. As a result, learners become more engaged and committed to achieving both personal and group learning goals.

Academic performance is another area where gamification shows measurable benefits. By integrating repetitive language practice into enjoyable formats, gamification helps students reinforce vocabulary, grammar, and reading skills. Mohamed (2023) demonstrated that sixth-grade EFL students who experienced structured gamified instruction made significant gains in reading comprehension. In addition, platforms such as Quizizz have been shown to increase student motivation and participation, particularly in vocabulary learning. Wijayanti et al. (2022) reported that such platforms created engaging environments that helped students retain new words more effectively. These findings support the use of gamified tools for enhancing specific language learning outcomes.

One of the strengths of gamified instruction is its flexibility across various classroom conditions, including low-resource settings. Educators can adapt gamification methods to suit the technological capabilities of their environment. Asanza et al. (2024) found that gamified instruction can be implemented even in classrooms with limited digital access, demonstrating its wide applicability and inclusivity. From digital games to paper-based badges and class challenges, teachers can apply gamified principles in creative ways, ensuring that all students benefit regardless of their access to technology.

Despite its advantages, gamification presents certain challenges. If not carefully designed, game elements may lose their appeal over time or fail to align with learning objectives. Helvich et al. (2023) cautioned that superficial use of gamification—focused only on fun—can result in decreased motivation if students do not find the tasks meaningful. Therefore, educators must design gamified experiences that are both engaging and educational. Behl et al. (2022) further pointed out that not all students respond to gamification in the same way, as individual differences in motivation—both intrinsic and extrinsic—can influence its effectiveness. Tailoring gamified instruction to the diverse needs of learners is essential for sustaining engagement.

A key principle in gamified instruction is finding a balance between competition and collaboration. While competition can inspire some learners, it can discourage others if not managed well. Fadhli et al. (2020) emphasized the importance of designing inclusive gamified activities that promote fairness and motivation for all learners, not just the most competitive. Creating an environment that encourages teamwork alongside individual achievement helps ensure that all students feel supported and motivated. Such balanced approaches allow learners with different personalities and abilities to benefit equally from gamified instruction.

In conclusion, gamified instruction offers a powerful and versatile approach to motivating EFL learners. The body of research discussed highlights how gamification can reduce anxiety, enhance motivation, foster collaboration, and improve academic outcomes. When implemented thoughtfully and aligned with clear learning goals, gamification becomes more than just an engaging classroom strategy—it becomes a transformative tool for language learning. As educators continue to innovate, it is essential to design gamified experiences that are inclusive,

purposeful, and responsive to learners' needs, ensuring that its full potential is realized in diverse EFL classrooms.

Vocabulary Retention in Gamified EFL Classrooms

Vocabulary retention plays a pivotal role in the process of learning English as a Foreign Language (EFL), especially within gamified classrooms where motivation and engagement are emphasized. Gamification, which involves integrating game-like elements into educational activities, has shown significant potential in enhancing vocabulary learning experiences by making them more interactive, enjoyable, and meaningful. Strategies such as educational games and digital platforms contribute to vocabulary acquisition and long-term retention by immersing learners in dynamic learning environments (Darwis & Amal, 2023; Kohnke & Moorhouse, 2021; Kurniawan & Purwati, 2023). These strategies support repeated exposure and active involvement, two crucial factors in reinforcing vocabulary memory. Studies confirm that when learners are engaged through game-based tasks, they are more likely to retain new vocabulary, as the learning becomes both purposeful and enjoyable (Darwis & Amal, 2023; Kohnke & Moorhouse, 2021).

The use of gamified tools such as Kahoot! and Quizizz exemplifies how technology-based platforms can transform vocabulary instruction. These platforms foster competitive yet collaborative classroom settings, where students benefit from immediate feedback and peer interaction, both of which strengthen memory and reinforce learning (España-Delgado, 2023; Kohnke & Moorhouse, 2021). Additionally, the incorporation of multimedia elements—such as animated videos with subtitles—enhances contextualized vocabulary understanding. According to Baroroh et al. (2021), the combination of visual and auditory input through multimedia results in dual coding, which improves vocabulary recall. Emotional engagement with the content also contributes to deeper learning, making vocabulary instruction not only effective but also emotionally resonant. Thus, gamification does not merely gamify tasks but redefines the instructional process by embedding content in stimulating and context-rich formats that support cognitive and emotional processing.

From a pedagogical standpoint, the integration of specific vocabulary learning strategies within gamified frameworks further amplifies retention outcomes. Techniques such as concept mapping and mobile-assisted language learning have demonstrated strong associations with improved vocabulary mastery. Yeganehpour and Zarfsaz (2021) and Ardalan (2024) highlight how visualizing lexical relationships helps learners internalize and recall words more efficiently. Furthermore, narrative-driven gamification—such as storytelling games or plot-based language tasks—has been shown to be particularly effective for younger learners. Gao et al. (2020) emphasize that story-based learning not only contextualizes vocabulary but also enhances student interest and motivation. This variety in input types—visual, auditory, narrative—caters to different learning styles and promotes sustained engagement, making vocabulary instruction both inclusive and comprehensive.

Equally important is the perception students hold toward gamified vocabulary instruction. Positive student attitudes correlate strongly with enhanced motivation and willingness to engage in vocabulary tasks. Zainiah and Putri (2022)

found that learners generally prefer gamified environments over traditional methods due to their interactive and enjoyable nature, while Holman (2022) reported that such environments improve learners' focus and task persistence. The continued advancement of digital tools has further expanded the possibilities of gamification, enabling innovative, accessible, and effective vocabulary instruction (Bhatti et al., 2022). Moreover, combining gamification with instructional methods like task-based and project-based learning has proven beneficial in reinforcing vocabulary use in meaningful contexts (Dinh & Hoang, 2022). This synergy between gamified strategies and traditional methodologies fosters a well-rounded approach that addresses both the cognitive and affective needs of EFL learners. In conclusion, gamified instruction represents a promising direction in vocabulary teaching, offering dynamic, learner-centered approaches that significantly enhance vocabulary retention and overall language development.

METHOD

Research Design

This study employed a comparative and correlational research design to investigate the effects of gamified learning on students' motivation and vocabulary retention. Two instructional groups were formed: one group received gamified vocabulary instruction incorporating game elements such as points, badges, and leaderboards, while the other group was taught using conventional methods without gamification. This design allowed for both between-group comparisons and within-group analysis, particularly focusing on the relationship between motivation and vocabulary retention among students exposed to gamified learning.

Participants

The participants were 85 undergraduate students enrolled in an English as a Foreign Language (EFL) course at a public university in Indonesia. The sample consisted of 39 male and 46 female students, aged between 18 and 21. Using random assignment, 40 students were placed in the gamified group and 45 in the non-gamified group. All students had intermediate English proficiency, confirmed by the university's standardized placement test. Pre-test scores verified that both groups were comparable in their baseline vocabulary knowledge and motivation levels.

Instruments

Two primary instruments were used to collect data: a motivation questionnaire and a vocabulary test. The motivation questionnaire, adapted from the Motivated Strategies for Learning Questionnaire (MSLQ), measured constructs such as goal orientation, self-efficacy, and task value using 25 items on a five-point Likert scale. The vocabulary test consisted of 40 items covering both receptive and productive knowledge related to the vocabulary taught during the intervention. In addition, students in the gamified group completed a post-intervention reflection survey to assess the perceived impact of specific game elements—points, badges, and leaderboards—on their vocabulary learning experience.

Data Collection

The instructional intervention was conducted over a 16-week period as part of the regular EFL course. Both groups were taught the same target vocabulary items, but instructional methods differed. The gamified group participated in digital activities that integrated game elements designed to foster engagement and reinforce learning, while the non-gamified group engaged in traditional classroom tasks such as textbook-based exercises, vocabulary lists, and written assignments. At the beginning of the semester, all participants completed the motivation questionnaire and vocabulary pre-test. After 16 weeks of instruction, both groups completed the same instruments as post-tests to measure changes in motivation and vocabulary retention. The gamified group also provided feedback through a reflection form evaluating the influence of game elements on their learning.

Data Analysis

The data were analyzed using inferential and correlational statistical methods. Independent samples t-tests were performed to compare the post-intervention motivation levels and vocabulary retention scores between the gamified and non-gamified groups (H1 and H2). A Pearson correlation analysis was used to examine the relationship between students' motivation and their vocabulary retention within the gamified group (H3). To further explore the impact of game elements, a multiple regression analysis was conducted using the gamified group's responses, with students' ratings of points, badges, and leaderboards as predictors of vocabulary retention (H4). All analyses were carried out using SPSS, with statistical significance determined at the $p < .05$ level.

RESULTS

The data were first assessed to ensure they met the assumptions required for parametric testing. Both the motivation and vocabulary post-test scores in the gamified and non-gamified groups were evaluated for normality and homogeneity of variance (Table 1). The normality tests indicated that the distributions of motivation and vocabulary scores in both groups did not significantly deviate from normality. Additionally, the equality of variances between groups was confirmed, suggesting that the variability in scores was similar across the gamified and non-gamified groups.

Table 1. Assumption Testing for normality and homogeneity of variance

Variable	Group	Shapiro-Wilk W	p (Normality)	Levene's F	p (Homogeneity)	Interpretation
Motivation (Post)	Gamified	0.973	0.412			Normal
	Non-Gamified	0.968	0.287	1.08	0.301	Equal variances assumed
Vocabulary (Post)	Gamified	0.961	0.228			Normal
	Non-Gamified	0.958	0.176	0.94	0.335	Equal variances assumed

The Shapiro-Wilk test results indicated that the motivation post-test scores were normally distributed for both groups, with W = 0.973 and p = 0.412 for the gamified group, and W = 0.968 and p = 0.287 for the non-gamified group. Similarly, the vocabulary post-test scores showed normality with W = 0.961 and p = 0.228 for the gamified group, and W = 0.958 and p = 0.176 for the non-gamified group. Since all p-values were above the 0.05 threshold, there is no evidence to reject the normality assumption, supporting the use of parametric tests for further analysis.

Levene's test for equality of variances showed that the variance of motivation scores between the gamified and non-gamified groups was statistically equal, with F(1,83) = 1.08, p = 0.301. For vocabulary retention scores, Levene's test also indicated equal variances, F(1,83) = 0.94, p = 0.335. Since both p-values exceed 0.05, the assumption of homogeneity of variance is satisfied, confirming that independent samples t-tests can validly compare group means.

Table 2 presents the descriptive statistics and results of independent samples t-tests comparing the gamified and non-gamified groups on motivation and vocabulary scores before and after the intervention. At the pre-test stage, both groups showed similar average scores for motivation and vocabulary, indicating comparable starting points prior to the instructional methods. The motivation scores were closely aligned, and vocabulary knowledge was nearly identical between groups. Following the 16-week intervention period, there was a marked increase in both motivation and vocabulary scores in the gamified group compared to the non-gamified group. This suggests that the gamified instructional approach had a notable impact on improving these outcomes relative to traditional teaching methods. The analysis of mean differences, t-values, significance levels, and effect sizes provides further evidence of the magnitude and statistical robustness of these changes.

Regarding motivation, the pre-test results showed no statistically significant difference between the gamified group (M = 3.54, SD = 0.43) and the non-gamified group (M = 3.53, SD = 0.47). The minimal mean difference of 0.01, supported by a very low t-value of 0.12 (df = 83) and a high p-value of 0.905, confirms that the groups were equivalently motivated before the intervention. This baseline equivalence is crucial as it ensures that any post-test differences can more confidently be attributed to the instructional methods rather than pre-existing motivational disparities. After the intervention, motivation in the gamified group increased substantially to an average of 4.02 (SD = 0.41), while the non-gamified group's motivation remained relatively stable at 3.51 (SD = 0.46). The mean difference of 0.51 between the two groups at post-test was statistically significant, with a t-value of 5.29 (df = 83) and a p-value below 0.001. This result reflects a very large effect size (Cohen's d = 1.15), indicating that gamified learning had a strong and meaningful positive effect on students' motivation. The substantial increase suggests that elements such as points, badges, and leaderboards may have effectively enhanced students' engagement and goal orientation.

Similarly, the vocabulary pre-test scores revealed no significant difference between the gamified group (M = 27.9, SD = 3.98) and the non-gamified group (M = 27.6, SD = 3.87), with a mean difference of just 0.3 and a non-significant t-value of 0.38 (df = 83, p = 0.704). This baseline similarity suggests that both groups started with comparable vocabulary knowledge, which strengthens the validity of the post-test comparisons. Following the intervention, the gamified group's

vocabulary scores increased substantially to a mean of 32.6 (SD = 4.10), while the non-gamified group's scores showed only a slight improvement, reaching 28.4 (SD = 3.90). The mean difference of 4.20 between groups was statistically significant ($t = 4.67$, $df = 83$, $p < 0.001$), with a large effect size ($d = 1.00$). This demonstrates that gamified learning contributed significantly to vocabulary retention, likely through increased motivation, engagement, and repeated exposure facilitated by the gamification elements. The results highlight the pedagogical value of gamification in supporting vocabulary acquisition in EFL contexts.

Table 2. Descriptive statistics and independent samples t-tests

Variable	Time	Group	N	Mean	SD	Mean Diff	t	df	p	d	Interpretation
Motivation	Pre-Test	Gamified	40	3.54	0.43	—	0.12	83	.905	0.03	No significant difference at baseline
		Non-Gamified	45	3.53	0.47						
	Post-Test	Gamified	40	4.02	0.41	0.51	5.29	83	<.001	1.15	Significant improvement in motivation
		Non-Gamified	45	3.51	0.46						
Vocabulary	Pre-Test	Gamified	40	27.9	3.98	—	0.38	83	.704	0.08	No significant difference at baseline
		Non-Gamified	45	27.6	3.87						
	Post-Test	Gamified	40	32.6	4.10	4.20	4.67	83	<.001	1.00	Significant improvement in vocabulary
		Non-Gamified	45	28.4	3.90						

Table 3 provides descriptive statistics and the Pearson correlation between post-test motivation and vocabulary scores for the gamified group. The data include measures of central tendency, variability, distribution shape, and internal consistency reliability for motivation. Motivation and vocabulary scores were both assessed after the intervention to explore the relationship between these variables within students exposed to gamified learning. The table also shows the strength and significance of the correlation between motivation and vocabulary retention, which is essential to understanding whether higher motivation is associated with better vocabulary outcomes in this instructional context.

Table 3. Descriptive statistics and Pearson correlation

Variable	N	Mean	SD	Skew	Kurt	α	1	2
1. Motivation (Post-Test)	40	4.02	0.41	-0.37	0.21	.87	—	**.61*** [.39–.77]
2. Vocabulary (Post-Test)	40	32.60	4.10	-0.22	-0.18	—	**.61*** [.39–.77]	—

The motivation scores in the gamified group averaged just above four on a five-point scale, indicating generally high levels of motivation among students following the intervention. The standard deviation of 0.41 suggests moderate variability in motivation scores, with the distribution showing a slight negative skew (-0.37), meaning that more students scored toward the higher end of motivation. The kurtosis of 0.21 indicates a relatively normal peakedness in the data distribution. The internal consistency reliability for the motivation questionnaire was high ($\alpha = .87$), confirming that the scale used to measure motivation was both reliable and consistent in this sample. Vocabulary scores averaged 32.60 out of 40, reflecting a solid retention of vocabulary taught during the intervention, with a slightly lower variability (SD = 4.10) and a near-normal distribution, as indicated by a small negative skew (-0.22) and slight platykurtic kurtosis (-0.18).

The Pearson correlation coefficient between motivation and vocabulary retention was 0.61, which is considered a strong positive correlation. The 95% confidence interval for this correlation ranged from 0.39 to 0.77, and the association was statistically significant at the $p < .001$ level. This finding indicates that higher levels of motivation after gamified learning were strongly associated with better vocabulary retention. In practical terms, students who reported greater motivation tended to perform better on the vocabulary test, suggesting that motivational factors are important contributors to learning success in gamified educational settings. The strength of this relationship supports the hypothesis that motivation and vocabulary retention are positively linked, highlighting the potential benefit of gamification to boost not only engagement but also measurable learning outcomes.

Table 4 presents the descriptive statistics for the gamified group's perceptions of specific game elements—points, badges, and leaderboards—and the results of a multiple regression analysis predicting vocabulary retention from these variables. The table includes means and standard deviations for each predictor, along with unstandardized regression coefficients (B), standard errors (SE), standardized coefficients (β), t-values, and significance levels (p-values). The overall model fit is also reported with R^2, F-statistic, and significance, showing how well these game elements collectively explain variance in vocabulary retention after the intervention.

Table 4. Descriptive statistics and multiple regression analysis

Predictor	M	SD	B	SE	β	t	P
Points	4.31	0.52	0.45	0.11	.39	4.09	<.001
Badges	4.10	0.61	0.28	0.10	.26	2.80	.008
Leaderboards	3.92	0.66	0.13	0.09	.12	1.44	.158

$R^2 = .52$, $F(3, 36) = 13.01$, $p < .001$

Students rated points as the most impactful game element with a mean score of 4.31 and relatively low variability (SD = 0.52), indicating strong agreement that points played a significant role in their learning experience. Badges were also rated positively, with a mean of 4.10 and slightly higher variability (SD = 0.61), suggesting general but somewhat varied perceptions of their influence. Leaderboards received the lowest average rating at 3.92 with the highest variability (SD = 0.66), indicating a more mixed or neutral attitude toward this element's impact on learning.

The regression analysis revealed that these three game elements collectively explained 52% of the variance in vocabulary retention scores ($R^2 = 0.52$), which is a substantial proportion, and the overall model was statistically significant, $F(3, 36) = 13.01$, $p < 0.001$. Looking at individual predictors, points had the strongest and most significant positive effect on vocabulary retention ($B = 0.45$, $SE = 0.11$, $\beta = 0.39$, $t = 4.09$, $p < 0.001$), indicating that students who rated points higher tended to retain more vocabulary. Badges also showed a significant positive influence, though to a lesser degree ($B = 0.28$, $SE = 0.10$, $\beta = 0.26$, $t = 2.80$, $p = 0.008$), suggesting that earning badges contributed meaningfully to vocabulary learning outcomes. In contrast, leaderboards did not significantly predict vocabulary retention ($B = 0.13$, $SE = 0.09$, $\beta = 0.12$, $t = 1.44$, $p = 0.158$), indicating that students' perceptions of leaderboards were not strongly related to their vocabulary performance in this study. These results suggest that while all game elements may have some motivational value, points and badges particularly play key roles in enhancing vocabulary retention in gamified learning environments.

Table 5 summarizes the results of hypothesis testing for the study investigating the effects of gamified learning on students' motivation and vocabulary retention. Each hypothesis is evaluated based on statistical evidence gathered from independent samples t-tests, Pearson correlation, and multiple regression analyses. The table provides a concise overview of whether each hypothesis was supported, partially supported, or not supported, along with relevant test statistics, p-values, and effect sizes to substantiate the conclusions drawn from the data.

Table 5. Hypotheses testing

Hypothesis	Description	Result	Statistical Evidence
H1	Gamified learning → higher motivation	☑ Supported	$t(83) = 5.29$, $p < .001$, $d = 1.15$
H2	Gamified learning → higher vocabulary retention	☑ Supported	$t(83) = 4.67$, $p < .001$, $d = 1.00$
H3	Positive correlation between motivation and vocabulary (gamified group)	☑ Supported	$r = .61$, $p < .001$
H4	Game elements (points, badges, leaderboards) → vocabulary retention	☑ Partially Supported	Points and Badges significant; Leaderboards not

Hypothesis 1 (H_1) posited that students exposed to gamified learning would demonstrate significantly higher motivation levels than those in non-gamified settings. This hypothesis was fully supported by the data, with an independent samples t-test showing a statistically significant difference in post-test motivation scores between the gamified and non-gamified groups, $t(83) = 5.29$, $p < .001$. The

effect size was large (Cohen's d = 1.15), indicating that the difference in motivation was not only statistically significant but also educationally meaningful. Similarly, Hypothesis 2 (H_2), which proposed that students in the gamified group would retain significantly more vocabulary than those in the non-gamified group, was also supported. The vocabulary post-test scores showed a significant difference, $t(83) = 4.67$, $p < .001$, with a large effect size ($d = 1.00$), suggesting that gamified learning had a substantial positive impact on students' vocabulary retention compared to traditional instruction.

Hypothesis 3 (H_3) explored whether there was a positive relationship between students' motivation and vocabulary retention within the gamified group. The Pearson correlation analysis confirmed this hypothesis, showing a statistically significant and strong positive correlation between the two variables ($r = .61$, $p < .001$). This finding indicates that higher levels of motivation were associated with better vocabulary outcomes among students who experienced gamified instruction, reinforcing the idea that motivation plays a crucial role in learning effectiveness.

Finally, Hypothesis 4 (H_4) examined the impact of individual game elements—points, badges, and leaderboards—on vocabulary retention. This hypothesis was partially supported. The multiple regression analysis revealed that points ($\beta = .39$, $p < .001$) and badges ($\beta = .26$, $p = .008$) significantly predicted vocabulary retention, whereas leaderboards ($\beta = .12$, $p = .158$) did not reach statistical significance. These findings suggest that while gamification overall supports vocabulary learning, not all game elements contribute equally, with points and badges showing a more direct and meaningful impact than leaderboards.

DISCUSSION

The findings of this study offer compelling evidence that gamified learning environments can significantly enhance both motivation and vocabulary retention among intermediate-level EFL students. This aligns closely with an expanding body of scholarship suggesting that game-based instructional strategies are effective in fostering not only learner engagement but also measurable academic gains. The statistically significant differences found between the gamified and non-gamified groups, as well as the strong positive correlation between motivation and vocabulary retention, underscore the potential of gamified learning to simultaneously target affective and cognitive dimensions of second language acquisition. In particular, the observed gains in motivation and vocabulary performance in the gamified group reflect the idea that educational gamification, when thoughtfully designed and implemented, can create a more dynamic and psychologically safe learning environment that stimulates learners' intrinsic and extrinsic motivations. This discussion will critically interpret these findings by integrating them with relevant literature, evaluating the effects of specific game elements, and exploring implications for EFL pedagogy.

The significant increase in motivation among students who experienced gamified learning reinforces existing findings in the field of technology-enhanced language learning. Cheng et al. (2025) observed that game elements such as points, levels, and challenges positively influence learner engagement and enjoyment, which in turn improves language performance. Similarly, Zhang and Hasim (2023) emphasized the motivational impact of gamified tasks, noting that the visibility of progress and recognition through game elements supports both sustained attention

and learner autonomy. The results of the present study are consistent with these claims, as the post-intervention motivation scores in the gamified group were markedly higher than those in the non-gamified group, with a large effect size indicating practical significance. These motivational gains can be attributed to the nature of the gamified experience itself—learners received immediate feedback, were rewarded for their achievements, and had a clear sense of progression, all of which are key features that drive engagement and persistence in learning tasks. Importantly, the gamified intervention in this study incorporated a combination of competitive and mastery-based elements, suggesting that the motivational impact was not limited to extrinsic incentives, but likely extended to intrinsic satisfaction derived from achieving meaningful learning goals.

Moreover, the emotional climate created by gamification may have contributed significantly to these motivational outcomes. Several scholars, including Alfares (2025) and Irzawati and Unamo (2023), argue that gamified learning reduces the anxiety and pressure often associated with traditional language instruction, thereby fostering a more relaxed and supportive atmosphere in which students feel encouraged to participate. This aligns with the participants' positive perceptions of the gamified experience as captured in the reflection survey, where many students reported that learning vocabulary through games was not only enjoyable but also less intimidating than conventional methods. The motivational benefits observed in this study, therefore, may stem not only from the novelty or entertainment value of gamification but from its capacity to reframe the learning process as a low-risk, high-engagement activity. Such affective advantages are particularly important in EFL contexts, where learners often struggle with confidence and anxiety. By lowering affective barriers, gamification may increase students' willingness to take linguistic risks and engage more deeply with learning content.

However, while the motivational impact of gamification was clearly supported by this study's findings, the literature also cautions that not all game elements have uniformly positive effects. Helvich et al. (2023) and Hong (2022) have pointed out that leaderboards and other competitive features can have mixed consequences, particularly for students with low self-efficacy or those who are less motivated by competition. The present study's regression analysis, which showed that leaderboards did not significantly predict vocabulary retention, adds weight to these concerns. While competitive elements may boost motivation for some learners, they may simultaneously demotivate others or create undue pressure. This suggests that the motivational benefits of gamification are not universally distributed and depend heavily on the design of the game mechanics and the individual differences among learners. Educators should therefore exercise caution in incorporating competitive elements and consider blending them with cooperative or individualized features that promote a sense of mastery rather than comparison.

In terms of vocabulary retention, the findings clearly demonstrate that gamified learning can lead to substantial improvements. This supports existing research suggesting that gamification not only motivates learners but also enhances their ability to acquire and retain new vocabulary. Cheng et al. (2025) and Alfares (2025) argue that repeated exposure to vocabulary through engaging and interactive tasks strengthens memory and reinforces semantic connections, leading to better long-term retention. The significant gains observed in the post-test vocabulary

scores of the gamified group provide empirical validation of this hypothesis. One possible explanation is that game-based activities encourage deeper cognitive processing—students are not merely memorizing word lists but are actively using vocabulary in meaningful contexts that require attention, retrieval, and application. The use of points and badges in the gamified environment further reinforced this process by rewarding not just participation but also performance, thus incentivizing focused learning efforts.

Notably, the study's analysis of specific game elements revealed that points and badges were significant predictors of vocabulary retention, whereas leaderboards were not. This distinction is important, as it highlights the types of reinforcement mechanisms that are most effective in promoting learning. Points and badges serve as immediate, tangible indicators of achievement, providing learners with a clear sense of progress and mastery. These elements support what Zhang and Hasim (2023) describe as "micro-motivation," where frequent small rewards help sustain attention and effort throughout the learning process. The fact that points emerged as the strongest predictor of vocabulary retention underscores the value of such mechanisms in encouraging consistent engagement. By contrast, the lack of significant effect from leaderboards suggests that competitive ranking may not contribute meaningfully to vocabulary learning and might even divert focus from the learning task to the performance of others. This finding supports Hong's (2022) view that while gamification can enhance motivation, its design must prioritize individual mastery and intrinsic goal orientation to maximize learning outcomes.

The strong positive correlation between motivation and vocabulary retention observed in this study reinforces the theoretical claim that affective and cognitive outcomes in language learning are interdependent. As learners become more motivated—whether through the promise of rewards, enjoyment of the activity, or reduced anxiety—they are more likely to invest cognitive effort in the learning process, leading to improved retention and application of vocabulary. This finding echoes Helvich et al. (2023), who emphasized the interplay between motivational engagement and academic achievement in gamified settings. In EFL contexts where vocabulary acquisition is foundational to communicative competence, the ability to motivate students through gamification may be a key strategy in promoting both immediate learning outcomes and longer-term language development. It also lends empirical support to the idea that gamification, when aligned with sound pedagogical principles, can be an effective tool for integrated skill development in second language education.

The findings of this study contribute meaningfully to the broader discourse on gamified language learning by providing robust empirical evidence of its dual impact on motivation and vocabulary acquisition. The data supports previous claims in the literature while also offering more nuanced insights into which game elements are most pedagogically effective. While gamification is often perceived as a novel or superficial trend, the outcomes of this study demonstrate that, when implemented with intentionality and alignment to learning goals, gamified instruction can lead to substantial improvements in both learner affect and performance. However, the findings also suggest that gamification is not a one-size-fits-all solution. Its effectiveness is contingent on thoughtful design, sensitivity to learner differences, and a clear understanding of how various game elements interact with psychological and educational variables. Future research should

therefore explore longitudinal effects, the role of learner characteristics such as goal orientation and digital literacy, and the application of gamification in other language skill areas beyond vocabulary.

CONCLUSION

The findings of this study support the integration of gamified learning in EFL classrooms to enhance students' motivation and vocabulary retention. Hypothesis 1, which proposed that gamified learning increases students' motivation, was supported, as students in the gamified group showed higher motivation than those in the non-gamified group. Hypothesis 2, which suggested that gamified learning improves vocabulary retention, was also supported, confirming the effectiveness of gamification in vocabulary acquisition. Hypothesis 3, proposing a positive relationship between motivation and vocabulary retention, was likewise supported, highlighting the critical role of motivation in language learning success. However, Hypothesis 4, which posited that all game elements (points, badges, and leaderboards) equally contribute to vocabulary retention, was not fully supported, as some elements like points and badges had a more consistently positive effect than others such as leaderboards, which showed mixed results depending on individual learner differences. These findings emphasize the need for thoughtful implementation of gamification, tailored to learners' needs and preferences, while also encouraging further research to explore long-term effects and broader learner experiences.

Despite the promising findings, this study has several limitations that should be addressed in future research. First, the sample was drawn from a single university, limiting the generalizability of the results to broader EFL populations or different educational contexts. Second, the study focused only on short-term vocabulary retention and did not examine long-term effects, which are critical for sustainable learning. Third, the gamified intervention relied primarily on digital tools, which may have introduced a novelty effect or been influenced by students' varying familiarity with technology. Future research should consider longitudinal designs to assess the lasting impact of gamified instruction, expand participant diversity across different institutions and proficiency levels, and explore the role of other motivational or cognitive factors. Additionally, qualitative investigations could provide deeper insight into learners' experiences and preferences, informing more nuanced applications of gamification in language education.

References

Alfares, N. (2025). Investigating the efficacy of Wordwall platform in enhancing vocabulary learning in Saudi EFL classroom. *International Journal of Game-Based Learning, 15*(1), 1-12. https://doi.org/10.4018/ijgbl.367870

Ardalan, K. (2024). The impacts of guided and unguided mobile-mediated concept mapping on EFL learners' vocabulary learning and strategy awareness. *International Journal of Applied Linguistics, 35*(2), 705-718. https://doi.org/10.1111/ijal.12651

Asanza, T., Asanza, M., Martínez, M., & García, F. (2024). Gamification as a didactic motivator in low-resource public English as a foreign language (EFL) classroom in Ecuador. *Ciencia Latina Revista Científica*

Multidisciplinar, 8(2), 5391-5402. https://doi.org/10.37811/cl_rcm.v8i2.10951

Baroroh, K., Huzairin, H., & Nurdiana, N. (2021). The use of English subtitled video on YouTube to improve students' vocabulary achievement. U-*Jet UNILA Journal of English Language Teaching, 10*(3). https://doi.org/10.23960/ujet.v10.i3.202105

Behl, A., Jayawardena, N., Pereira, V., Islam, N., Giudice, M., & Choudrie, J. (2022). Gamification and e-learning for young learners: A systematic literature review, bibliometric analysis, and future research agenda. *Technological Forecasting and Social Change, 176*, 121445. https://doi.org/10.1016/j.techfore.2021.121445

Bhatti, M., Iqbal, A., Rafique, Z., Noreen, S., & Tabassum, F. (2022). Short stories as an innovative EFL teaching technique to improve Pakistani elementary students' English vocabulary. *Journal on English as a Foreign Language, 12*(2), 405-420. https://doi.org/10.23971/jefl.v12i2.4060

Cheng, J., Lü, C., & Xiao, Q. (2025). Effects of gamification on EFL learning: A quasi-experimental study of reading proficiency and language enjoyment among Chinese undergraduates. *Frontiers in Psychology, 16*. https://doi.org/10.3389/fpsyg.2025.1448916

Darwis, N., & Amal, N. (2023). An analysis of students' perception using Kahoot game in vocabulary learning process. *International Journal of Research on English Teaching and Applied Linguistics, 4*(1), 1-11. https://doi.org/10.30863/ijretal.v4i1.5006

Dinh, N., & Hoang, G. (2022). The effects of task-based vocabulary instruction: A case study at a center for vocational training and continuing education. *International Journal of Science and Management Studies (IJSMS)*, 242-261. https://doi.org/10.51386/25815946/ijsms-v5i4p127

España-Delgado, J. (2023). Kahoot, Quizizz, and uizalize in the English class and their impact on motivation. *How, 30*(1), 65-84. https://doi.org/10.19183/how.30.1.641

Fadhli, M., Brick, B., Setyosarı, P., Ulfa, S., & Kuswandi, D. (2020). A meta-analysis of selected studies on the effectiveness of gamification method for children. *International Journal of Instruction, 13*(1), 845-854. https://doi.org/10.29333/iji.2020.13154a

Gao, Y., Wang, F., & Lee, S. (2020). The effects of three different storytelling approaches on the vocabulary acquisition and response patterns of young EFL students. *Language Teaching Research, 27*(5), 1078-1098. https://doi.org/10.1177/1362168820971789

Helvich, J., Novák, L., Mikoška, P., & Hubálovský, Š. (2023). A systematic review of gamification and its assessment in EFL teaching. *International Journal of Computer-Assisted Language Learning and Teaching, 13*(1), 1-21. https://doi.org/10.4018/ijcallt.322394

Holman, C. (2022). Theatre as a means for teaching a second language. *Gatesol Journal, 32*(2). https://doi.org/10.52242/gatesol.163

Hong, Y. (2022). Gamifying flipped writing classes for EFL students: A class design model. *International Journal of New Developments in Education, 4*(15). https://doi.org/10.25236/ijnde.2022.041509

Irzawati, I., & Unamo, A. (2023). Students' perceptions and attitudes towards the utilization of Duolingo in EFL learning. *J-Shmic Journal of English for Academic, 10*(2), 123-138. https://doi.org/10.25299/jshmic.2023.vol10(2).13649

Kohnke, L., & Moorhouse, B. (2021). Using Kahoot! to gamify learning in the language classroom. *Relc Journal, 53*(3), 769-775. https://doi.org/10.1177/00336882211040270

Kurniawan, K., & Purwati, H. (2023). The effectiveness of English subtitle videos on vocabulary mastery of non-EFL students at STIKES Jayapura Papua. *Saga Journal of English Language Teaching and Applied Linguistics, 4*(2), 77-88. https://doi.org/10.21460/saga.2023.42.163

Mohamed, M. (2023). The effect of gamification strategy on developing some sixth grade primary schoolers' EFL reading comprehension skills. مجلة القراءة والمعرفة, 264(23, 0-0). https://doi.org/10.21608/mrk.2023.322171

Wijayanti, S., Prasadja, H., Pasau, A., & Andreas, A. (2022). Utilization of Quizizz as a learning medium for elementary teachers in Cisauk district. *Jurnal Pemberdayaan Masyarakat Madani (JPMM), 6*(1), 164-175. https://doi.org/10.21009/jpmm.006.1.11

Yeganehpour, P., & Zarfsaz, E. (2021). The effect of mobile-facilitated concept-mapping vocabulary learning strategy on EFL learners' vocabulary learning and retention. *Universal Journal of Educational Research, 9*(3), 621-629. https://doi.org/10.13189/ujer.2021.090321

Zainiah, Z., & Putri, N. (2022). Students' perception of gamified online quizzes and its impacts on their classroom engagement. *Research and Innovation in Language Learning, 5*(2), 98. https://doi.org/10.33603/rill.v5i2.6189

Zhang, S., & Hasim, Z. (2023). Gamification in EFL/ESL instruction: A systematic review of empirical research. *Frontiers in Psychology, 13*. https://doi.org/10.3389/fpsyg.2022.1030790