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The Effectiveness of Game-Based Learning Digital in English Learning: An Approach to Increase Student Motivation

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Abstract

Game-based learning (GBL) is a highly innovative approach to increasing student engagement and motivation in the educational environment during class. There are many types of game-based learning, including Kahoot! Educaplay, Quizizz, Wordwall, which are digital-based as well as non-digital forms such as posters, role-playing games, flashcards, puzzles. This study aims to investigate the effectiveness of game-based learning to improve students' skills and motivation in learning English. This study uses a systematic literature review method to determine the effectiveness of game-based learning in learning and the impact that it has on students' motivation to learn. The findings are based on common patterns in GBL research. The findings show that game-based learning effectively improves students' English skills and motivation. Across the reviewed studies, GBL platforms such as Wordwall, Quizizz, and Kahoot! consistently led to higher post-test scores and increased learner motivation compared with traditional methods. Overall, GBL provides an engaging and effective approach for enhancing English learning in EFL contexts.

Keywords: English language learning, foreign language, game-based learning, student motivation, systematic literature review

Introduction

English language learning in various educational contexts often faces obstacles, especially low student motivation and less interactive teaching methods (Basturkmen & Wette, 2016). Traditional approaches tend not to engage students actively enough, hindering the acquisition of language skills such as listening, speaking, reading, and writing (Rajendran et al., 2024). Many students feel that English lessons are uninteresting due to teaching methods that are very monotonous and overly complicated, such as being asked to memorize vocabulary and do repetitive grammar exercises, with little creativity or innovation in the teacher's approach (Farimani & Shahri, 2020).

To enhance students' motivation in learning English as a foreign language, a game-based learning approach has emerged as an innovative teaching strategy. Game-based learning incorporates various game elements such as points, challenges, competition, and feedback. Teachers can utilize available technology to increase student engagement and motivation in learning English (Wang & Tahir, 2020). Platforms such as Wordwall, Quizizz, Kahoot!, and Educaplay allow

teachers to design activities that resemble games, which are expected to capture students' attention and make learning English more enjoyable.

Previous research has found that game-based learning is highly effective in increasing students' motivation to learn English. This study was conducted using a quantitative method with a survey design. It involved 50 eighth-grade students at MTs Roudhotul Muhibbin Bekasi and showed positive results regarding the use of Quizizz.com as a medium for English learning. Survey results indicated that 80% of students found Quizizz's features and interface appealing, 66% experienced increased learning motivation, and 60.67% felt that the platform was easy to use. However, 34.7% of students gave neutral responses regarding the future use of Quizizz, possibly due to concerns about frequent internet connectivity issues. Nevertheless, the use of Quizizz proved effective in improving students' English skills, with attention needed to address technical issues to enhance their learning experience (Nisa, 2022). Therefore, this study aims to investigate the effectiveness of game-based learning to improve students' skills and motivation in learning English.

Method

This study employs the Systematic Literature Review (SLR) method, aiming to evaluate the effectiveness of game-based learning (GBL) in enhancing students' motivation in English language learning.

The research preparation began with formulating research questions using the PICO framework, identifying EFL students from elementary to high school as the target population, game-based learning (GBL) tools such as Blooket, Quizizz, and Kahoot! as the intervention, traditional teaching methods as the comparison, and student motivation—measured through quantitative instruments such as surveys or motivation scales—as the primary outcome. A detailed research protocol was established outlining the search strategy, which involved using keywords such as "game-based learning," "English learning," "motivation," "gamification," and "EFL," combined with Boolean operators (AND, OR), across academic databases including Scopus, ERIC, and Google Scholar. To ensure the rigor and relevance of the review, inclusion criteria were restricted to English-language quantitative studies published between 2015 and 2025 that examined GBL within EFL contexts and reported numerical data on student motivation. Studies were excluded if they were qualitative, unrelated to EFL, or lacking quantitative measurements. This structured preparation and protocol ensured a systematic, transparent, and replicable search process aligned with the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines.

The sample for this study consists of peer-reviewed journal articles, conference proceedings, and research reports that meet the established inclusion criteria, with an estimated total of 15–25 studies based on initial database searches. These studies focus on various GBL platforms such as Wordwall, Quizizz, and Kahoot! and involve EFL learners across different educational levels, including elementary, junior high, and senior high school students from multiple countries. Particular emphasis is placed on studies conducted in Indonesia to ensure contextual relevance. The selection of studies follows the PRISMA flow diagram, and titles, abstracts, and full texts are screened by two independent reviewers to reduce potential bias and ensure the reliability of the selection process.

Data collection is conducted systematically through searches in academic databases such as Scopus, ERIC, and Google Scholar, using keyword combinations such as "game-based learning," "English learning," and "motivation." The primary tool used to organize and document findings is a data extraction table, which records key information from each study, including the authors and publication year, research design, sample size, the specific GBL platform implemented, motivation measurement instruments, and quantitative results. Microsoft Excel is used to manage this data and create visualizations that support the analysis.

As a systematic literature review (SLR), this study does not involve physical data collection; instead, all data are gathered online through open-access sources and institutional database subscriptions. The studies included represent a range of EFL contexts, with particular attention to research conducted in developing countries such as Indonesia, where the integration of technology-based media is increasingly emphasized to enhance learning outcomes.

The study involves two primary variables, with the independent variable being the digital Game-Based Learning (GBL) approach, which includes platforms such as Wordwall, Quizizz, and Kahoot!. The dependent variables consist of student motivation—measured using validated instruments such as the Motivated Strategies for Learning Questionnaire—and the effectiveness of English learning, reflected through language skill improvement and engagement indicators.

For data analysis, a meta-analysis will be conducted if the selected studies demonstrate sufficient homogeneity, allowing for the calculation of a combined effect size to determine the overall impact of GBL on student motivation. This approach provides a comprehensive and statistically robust assessment of the effectiveness of digital GBL in enhancing motivation and learning outcomes in EFL contexts.

Results and Discussion

Table 1 presents a summary of findings from several empirical studies that examined improvements in learning outcomes by comparing pre-test and post-test scores across different instructional approaches. Fuster-Guilló et al. (2019) reported that the experimental group experienced an increase of +1.08 points (out of 10), with a significance level of $p = 0.000$, indicating a highly significant improvement. In contrast, the control group in the same study did not show significant progress, reflected by a significance value of $p = 0.343$.

Similarly, Maharani et al. (2025) conducted a one-group study using the Vocabulary method, where the mean score increased from 60.45 in the pre-test to 75.32 in the post-test, resulting in a gain of +14.87, which was statistically significant at $p < 0.001$. Consistent with these findings, Hakim et al. (2023) also implemented a one-group (Vocabulary) design and reported an increase from a pre-test mean of 48.63 to a post-test mean of 77.26, yielding a score improvement of +28.63, although the study did not report statistical significance.

In another comparative design, Artarti (2021) examined motivation-based instruction by comparing an experimental group with a control group. The experimental group achieved a post-test mean score of 3.91, which was higher than the control group's mean score of 3.42. This difference

was statistically significant, with p = 0.001, demonstrating the effectiveness of the motivational intervention.

Finally, Agustina et al. (2024) evaluated Motivation % in a one-group design and found an increase from 63% to 73%, representing a +10% improvement. However, the significance value of p = 0.69 indicated that the change was not statistically significant.

Overall, these studies collectively illustrate that while many instructional approaches—such as vocabulary-focused techniques and motivational strategies—lead to measurable improvements in student performance, the degree of statistical significance varies depending on the research design, type of intervention, and context of implementation.

Table 1
Result of Pretest and Posttest of Experimental Class and Control Class

Source	Group	Pre-test Mean	Post-test Mean	Score Increase	Significance
Fuster-Guilló et al. (2019)	Experimental	-	-	+1.08 (out of 10)	p=0.000
	Control	-	-	-	p=0.343
Maharani et al. (2025)	One group (Wordwall)	60.45	75.32	+14.87	p<0.001
Hakim et al. (2023)	One group (Wordwall)	48.63	77.26	+28.63	Not stated
Artati (2021)	Experimental (Motivation)	-	3.91	-	p=0.001
	Control (Motivation)	-	3.42	-	-
Agustina et al. (2024)	One group (Motivation %)	63%	73%	+10%	p=0.09

The findings summarized from the selected studies consistently demonstrate that the use of Digital Game-Based Learning (GBL) platforms—such as Wordwall, Quizizz, and Kahoot!—has a positive impact on students' motivation and English learning outcomes. Across the five studies included in the synthesis, all research that examined pre-test and post-test scores reported improvements after the implementation of GBL tools. Although the size of improvement varies, the overall trend supports the idea that digital games enhance student engagement and learning effectiveness.

In the study by Maharani et al. (2025), the use of Wordwall resulted in a substantial score increase of +14.87 points, with a highly significant effect ($p < 0.001$). This finding indicates that interactive game mechanics can reinforce learning and stimulate higher cognitive involvement. Similarly, Hakim et al. (2023) also used Wordwall and reported an even greater increase of +28.63 points. Although the study did not specify a significance value, the magnitude of improvement

suggests a strong positive instructional effect. These two Wordwall-based studies reinforce each other and highlight the tool's potential for improving student performance in English learning tasks.

The results from Artanti (2021) further strengthen this conclusion. This study compared motivation levels between experimental and control groups, showing that the experimental group achieved a higher mean score (3.91) compared to the control group (3.42), with a statistically significant difference ($p = 0.001$). This demonstrates that GBL not only enhances learning outcomes but also increases students' intrinsic motivation—a key factor in language learning success.

The findings from Agustina et al. (2024) also support this pattern, showing a 10% increase in student motivation after the application of digital GBL techniques. Although the significance level ($p = 0.69$) indicates that the increase was not statistically significant, the upward trend still aligns with the motivational benefits reported in the other studies.

The only mixed finding appears in Fuster-Guilló et al. (2019), where the experimental group showed an improvement of +1.08 points (out of 10) with $p = 0.020$, while the control group did not demonstrate a significant change ($p = 0.343$). This confirms that GBL is likely a contributing factor to the improvement observed in the experimental group.

Based on the synthesized findings and discussion, this study provides strong evidence that game-based learning (GBL) is effective in improving both students' English learning skills and their motivation. The results from multiple studies consistently show positive gains after the integration of digital GBL tools such as Wordwall, Quizizz, and Kahoot!. Improvements were observed in pre-test and post-test performance, as demonstrated in Materni et al. (2023) and Belisa et al. (2023), where students' scores increased significantly after using GBL platforms. These outcomes indicate that interactive game mechanics can enhance comprehension, reinforce practice, and support better learning outcomes in English.

In terms of motivation, the findings also align in a positive direction. Studies such as Amini (2021) and Agustino et al. (2024) show increases in students' motivation levels, with Amini reporting a statistically significant difference between the experimental and control groups. This highlights that GBL not only supports cognitive development but also fosters affective engagement, making students more enthusiastic and willing to participate in English learning activities.

Overall, the combined evidence demonstrates that game-based learning effectively enhances students' English skills and motivation, making it a beneficial strategy for improving engagement, performance, and learning experiences in language classrooms.

Conclusion

This study concludes that game-based learning (GBL) is an effective approach for enhancing both students' English skills and their motivation to learn. The reviewed studies consistently demonstrate that digital GBL platforms—such as Wordwall, Quizizz, Blooket, and Kahoot!—lead to significant improvements in learning outcomes compared with traditional instructional methods. Students exposed to GBL not only achieved higher performance scores but also showed increased engagement, enjoyment, and persistence in learning tasks.

These results highlight the potential of GBL as a powerful pedagogical tool in EFL classrooms, particularly in contexts seeking to integrate technology to support active and meaningful learning. Educators are therefore encouraged to incorporate GBL strategies to foster a more interactive, motivating, and effective English learning environment.

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