

Bingo and Brains: Gamifying Vocabulary Learning in an Islamic High School Setting

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Abstract

A strong command of vocabulary is fundamental to English proficiency, especially for EFL learners. This research was conducted due to the importance of vocabulary mastery in supporting students' English skills. Many students struggle with learning and retaining vocabulary because instructional approaches are repetitive and lack variety. This study investigates the effectiveness of the Word Bingo game in enhancing vocabulary proficiency among tenth-grade students at an Islamic upper secondary school in Jember, Indonesia. A quantitative method with a quasi-experimental design and a non-equivalent control group was used. A homogeneity test was conducted on pre-test scores to ensure baseline equivalence. The participants were 48 tenth-grade students assigned to experimental and control groups. Data were collected via pre-tests and post-tests and analyzed using normality, homogeneity, and independent-samples t-tests. Results showed a substantial enhancement in vocabulary proficiency for students taught with Word Bingo compared to traditional methods. The experimental group achieved a higher post-test mean (72.29) than the control group (55.21). The t-test results ($t(46) = -5.720, p < .001$) demonstrated a statistically significant impact. These findings indicate that Word Bingo is an effective strategy for improving vocabulary mastery among tenth-grade learners. It not only increases student motivation and engagement but also improves their ability to recall and apply new vocabulary in learning activities.

Keywords: Vocabulary Mastery; Word Bingo; Game-Based Learning

Nowadays, the ability to communicate effectively across linguistic boundaries has become increasingly important. In addition to that, English has emerged as the dominant global language which is commonly used in international education, business, science, and technology (Sharma & Dwivedi, 2024). Its importance in global communication has encouraged educational institutions worldwide, including in Indonesia, to incorporate English into their system of education not only as a

subject but also as a medium of instruction and access to global knowledge (Hamid & Nguyen, 2024). With the majority of scientific literature, digital content, and professional discourse produced in English, proficiency in this language is no longer optional but a necessity for students wishing to participate in academic and professional environments beyond their local context. In fact, research shows that English proficiency significantly improves students' academic performance,

employability, and socioeconomic mobility ([Deviyanti & Nurazizah, 2024](#); [Kirkpatrick, 2011](#)).

Related to the above, one of the most persistent barriers to English language mastery is the limited vocabulary knowledge of learners, which restricts their capability in comprehending texts, articulating thoughts, and participating in meaningful communication. Vocabulary acts as the foundation of language skills (listening, speaking, reading, and writing) and without ample vocabulary, students struggle to construct grammatically accurate and contextually appropriate sentences ([Moghadam et al., 2022](#); [Yu et al., 2023](#)). This complication is particularly tangible in multilingual and multicultural societies such as Indonesia, where students often acquire English as a third or even fourth language, following their mother tongue and national language, Bahasa Indonesia ([Geria, 2023](#)). The linguistic distance between English and local languages further complicates the acquisition process, making vocabulary learning a demanding task. Therefore, to address these challenges, English educators must adopt more dynamic, learner-centered instructional strategies that move beyond memorization.

Recent research in educational psychology and language pedagogy underscores the importance of adopting innovative approaches such as gamification, digital learning tools, and mnemonic-based strategies to enhance learner motivation, strengthen memory retention, and foster more interactive vocabulary learning experiences ([Kottacheruvu, 2023](#); [Zhang, Zou & Li, 2021](#); [Al-Shammari, 2020](#)). Among these innovations, game-enhanced learning activities like Word Bingo have been highlighted as effective methods because they combine repetition, contextual processing, and high learner engagement, all of which are essential elements of successful vocabulary acquisition ([Suhartono, Hidayat & Fitriani, 2022](#); [Wu & Chen, 2019](#)).

In an era where language competence

significantly influences academic and professional pathways, ensuring that vocabulary instruction is not only effective but also enjoyable has become increasingly important. To meet this demand, educators are encouraged to move beyond conventional textbook-driven instruction and adopt techniques that make vocabulary learning more meaningful and memorable for learners. Traditional memorization practices often struggle to sustain student interest or foster long-term retention, particularly in EFL settings where exposure to English is limited ([Alqahtani, 2019](#)). As a response, interactive, game-based, and student-centered instructional strategies have gained growing attention for their capacity to create engaging and immersive learning environments that support both enjoyment and cognitive processing ([Kim, 2020](#); [Reinders & Wattana, 2020](#)). This focus on cognitive and metacognitive engagement aligns with research on language learning strategies (LLS). A study of sixth-semester English education students found that advanced learners frequently employ complex strategies, particularly relying on metacognitive and cognitive processes such as planning, controlling, and monitoring their learning ([Hidayah, 2020](#)). Within this landscape, the Word Bingo Game has emerged as a practical yet powerful pedagogical option, effectively integrating spaced repetition, friendly competition, and contextualized word recognition to facilitate deeper vocabulary learning.

By design, Word Bingo Game can serve as a structured tool to enhance the very metacognitive strategies that characterize successful language learners. Research by Kurniawan et al. ([2024](#)) demonstrate that game-based activities significantly enhance English vocabulary learning for beginner students, while Mikala et al. ([2024](#)) report that Bingo-style games effectively improve elementary learners' vocabulary mastery. Similarly, Oktaviani et al. ([2023](#)) show that the Bingo Game contributes to steady improvement in vocabulary performance

among junior high school learners. These results echo broader evidence from classroom research, such as the study by Gea (2023), which found that Bingo-based instruction supported learners' retention and motivation. The interactive nature of Word Bingo also aligns with the benefits highlighted in Sairiyah et al. (2025), who found that board-game activities can enhance vocabulary acquisition through repeated encounters and meaningful engagement. Additionally, Adawiyah (2025) emphasizes that interactive game-based media promote learner participation and strengthen vocabulary recall. Taken together, these studies underscore that Word Bingo is a practical, low-cost, and adaptable instructional tool that promotes motivation, engagement, and vocabulary development, particularly in linguistically diverse EFL contexts such as Indonesian classrooms.

Although earlier scholars such as Thornbury (2002) highlighted the importance of contextualized learning, recent studies reaffirm this view by demonstrating that vocabulary is acquired more effectively when learners interact with words through authentic, purposeful communication rather than memorizing isolated lists (Lau, 2020; Teng, 2022). Nation's (2013) principle that multiple encounters in varied contexts are necessary for deep lexical mastery has been supported by recent empirical findings showing that repeated exposure and active engagement significantly enhance both receptive and productive vocabulary knowledge (Webb & Nation, 2020; Uchihara & Saito, 2021). Embedding vocabulary learning into communicative tasks that require comprehension, retrieval, and use has proven to be particularly effective in promoting durable vocabulary development (Lee & Lin, 2023).

Learner motivation and emotional involvement also play critical roles in vocabulary acquisition, especially in EFL contexts where English is not part of learners' daily linguistic environment. While foundational theories such as Deci and Ryan's (2000)

Self-Determination Theory remain relevant, recent research confirms that learners display higher vocabulary gains when instructional methods support autonomy, competence, and relatedness (Sun & Chen, 2022; Fang & Chen, 2024). Gamified instruction, such as the use of educational games like Word Bingo, meets these motivational needs by offering choice, immediate feedback, and peer interaction. Evidence from several recent studies shows that gamification increases engagement, reduces anxiety, and improves vocabulary retention among EFL learners (Putri & Kurniawan, 2021; Widodo, 2024).

From a cognitive perspective, repetition and retrieval-based learning remain essential components of vocabulary retention. Roediger and Butler's (2011) claims on retrieval practice have been reinforced by more recent studies demonstrating that game-based tasks often support repeated retrieval in enjoyable, low-stakes formats that increase long-term recall (Yanagisawa & Webb, 2022; Shintani, 2023). Additionally, socio-cultural theory, as originally proposed by Vygotsky (1978), continues to influence contemporary pedagogical models that emphasize collaborative, socially mediated learning. Recent studies show that game-based vocabulary activities foster peer interaction, scaffolding, and communicative risk-taking in ways that reduce anxiety and create a psychologically safe learning environment (Rachmawati & Wulandari, 2021; Abdullah, 2023). This is particularly valuable in EFL contexts such as Indonesia, where learners often report speaking anxiety and reluctance to participate in formal classroom interactions. Thus, educational games not only provide repeated and meaningful exposure to vocabulary but also cultivate motivation, confidence, and engagement which are key factors that contribute to sustained language development.

The Word Bingo game is an interactive and engaging educational tool that has proven effective in enhancing students' vocabulary acquisition. By turning traditional vocabulary

exercises into a game-based activity, Word Bingo promotes active learning and increases student motivation. During the game, students are encouraged to recognize, recall, and apply vocabulary in a fun and competitive setting, which helps reinforce memory retention and comprehension. Previous studies conducted in junior high and primary school contexts, such as at MTs Dar El-Kutub Bayah ([Nadiya et al., 2022](#)), MTs Al-Jihad Pontianak ([Rahmaniah et al., 2021](#)), and SDK Petra Madiun ([Rahmasari, 2021](#)) consistently reported significant improvements in students' vocabulary mastery, elevated enthusiasm, and stronger learning motivation through bingo-based learning activities. The novelty of the current research lies in its focus on tenth-grade students at a Madrasah Aliyah (Islamic senior high school), a context scarcely explored in prior research. Moreover, the application of a quasi-experimental design with a non-equivalent control group, combined with rigorous statistical analyses, including normality, homogeneity, and independent-sample t-tests, enhances the methodological rigor of this study. This approach strengthens the validity and generalizability of the results, offering a more reliable evidence base than earlier research that relied primarily on pre-experimental or classroom action research designs. These contributions offer fresh insight into the potential of Word Bingo for older learners, demonstrating its effectiveness not only in improving vocabulary test outcomes but also in building motivation, engagement, and recall abilities among senior secondary school students.

Accordingly, this study seeks to examine the effectiveness of the Word Bingo game in enhancing the vocabulary mastery of tenth-grade students at Madrasah Aliyah Wahid Hasyim Balung. The central research question guiding this investigation is: "Does the use of the Word Bingo game significantly influence students' vocabulary mastery?" Through the implementation of a quasi-experimental design involving both an experimental and a

control group, the study intends to generate empirical evidence regarding the viability of game-based learning strategies within senior high school contexts. The results are expected to enrich the existing literature on gamified language instruction and offer practical guidance for teachers, curriculum developers, and policymakers striving to improve vocabulary teaching practices in EFL classrooms, particularly within Islamic educational settings.

Method

This research utilized a quantitative approach, specifically implementing a quasi-experimental design with a non-equivalent control group. This design was chosen to investigate the causal impact of the Word Bingo game on students' vocabulary mastery within an authentic classroom environment, allowing the study to closely reflect natural learning conditions while maintaining a reasonable level of experimental control. Unlike true experimental designs, which require random assignment, quasi-experiments are particularly suitable in educational contexts where such randomization is often impractical due to administrative constraints or ethical considerations ([Creswell, 2012](#)). In this study, existing class groups were utilized as intact units, with one group serving as the experimental class receiving the Word Bingo intervention, and the other as the control class taught through conventional methods.

The non-equivalent control group design enables researchers to compare outcomes between two groups that are similar but not randomly assigned, thus maintaining ecological validity while still allowing for the assessment of treatment effects ([Fraenkel, Wallen, & Hyun, 2012](#)). This design was chosen to ensure that the intervention could be implemented within the natural flow of classroom instruction without disrupting the academic structure of the school. By comparing the vocabulary performance of the experimental and control groups through pre-test and post-

test assessments, this study sought to determine whether the use of the Word Bingo game led to a statistically significant enhancement in students' vocabulary mastery. The use of this design, supported by comprehensive statistical procedures, was intended to produce findings that are both reliable and generalizable, thereby offering valuable insights for instructional practices in comparable EFL (English as a Foreign Language) learning contexts.

Participants

The participants comprised 48 tenth-grade students enrolled at Madrasah Aliyah Wahid Hasyim Balung, East Java, Indonesia. The sample consisted of two existing classes, each comprising 24 students. The experimental group received instruction incorporating the Word Bingo game, while the control group was taught using traditional instructional methods. Purposive sampling was employed to select participants based on comparable academic performance and English language proficiency, as indicated by their mid-semester assessment scores ([Sugiyono, 2019](#)).

Instrumentation

The primary instrument for data collection was a researcher-constructed vocabulary proficiency test, composed of multiple-choice and matching items, designed to assess various aspects of lexical knowledge. The instrument functioned as both a pre-test and post-test to gauge learners' vocabulary competence prior to and following the intervention. To ensure construct validity, the test items were evaluated by two experts in English language education. Furthermore, a pilot study was conducted to ascertain the instrument's reliability, as well as to determine its difficulty index and discriminating power ([Ary et al., 2018](#); [Brown, 2004](#)).

Procedure

The research followed a three-phase procedure: a pre-test to assess baseline vocabulary knowledge, an intervention

phase wherein the experimental group received instruction via the Word Bingo game and the control group was taught using traditional methods, and a post-test to measure the outcomes. In line with conventional vocabulary pedagogy, the control group received instruction through textbook-centered activities, translation drills, and rote memorization. Such traditional methods remain common, yet recent research emphasizes their limitations: they often fail to provide the interactive engagement and repeated contextual exposure necessary for deeper vocabulary retention ([Prastiwi & Lestari, 2023](#); [Faida & Wijianto, 2024](#)). In contrast, the experimental group was exposed to game-based learning via the Word Bingo game, interacting with vocabulary cards, responding to definitions, and engaging in peer competition. This approach corresponds with findings from recent empirical studies demonstrating that game-based learning significantly enhances vocabulary acquisition by increasing motivation, promoting repeated exposure, and facilitating active use of target language ([Garhani & Basikin, 2022](#); [Hidayah, Susanto, & Efrizal, 2025](#); [Tiara, Saefullah, & Nugraha, 2024](#)). These studies support the notion that such interactive, enjoyable, and socially engaging activities better support vocabulary learning than traditional, drill-based practices.

Data Analysis

The data analysis procedure involved two main phases: assumption testing and hypothesis testing. The normality of the data was assessed using the Shapiro–Wilk test, wherein the dataset was deemed to follow a normal distribution when the significance value (p) was greater than the predetermined alpha level of 0.05 ([Ghasemi & Zahediasl, 2012](#)). The selection of an appropriate hypothesis testing procedure was guided by the results of the normality and homogeneity analyses. When both assumptions were satisfied, a parametric test, specifically the independent-samples

t-test, was employed. However, if either assumption was violated, a non-parametric alternative, such as the Mann–Whitney U test, was utilized instead (Pallant, 2020).

The alternative hypothesis (H_a) proposed that a significant difference existed in students’ vocabulary mastery between those taught using the Word Bingo game and those receiving traditional instruction. Consistent with standard statistical procedures, the null hypothesis (H_0) was rejected when the p-value fell below the significance threshold of $\alpha = 0.05$, signifying that the instructional intervention had a meaningful impact. In contrast, if the p-value was greater than 0.05, the null hypothesis was upheld, indicating that the two teaching methods did not produce a statistically significant difference in outcomes (Field, 2013).

Result and Discussion

This section presents the results of statistical analyses conducted to examine the effectiveness of the Word Bingo game in improving students’ vocabulary mastery. The analysis includes tests for homogeneity and normality, which serve as prerequisites for parametric testing. These are followed by hypothesis testing to assess the significance of the instructional treatment, as well as additional measures such as N-gain and effect size to determine the magnitude of improvement and impact. The findings are presented in tables and explained in detail below.

Table 1. Homogeneity Test

		Levene	df1	df2	Sig.
		Statis- tic			
Score	Based on Mean	3.333	1	46	.074
	Based on Median	2.593	1	46	.114
	Based on Median and with adjusted df	2.593	1	39.556	.115
	Based on trimmed mean	3.384	1	46	.072

Prior to analysing the effectiveness of the instructional treatments, a homogeneity of

variance test was conducted using Levene’s Test (Table 1). The result indicated a significance value of 0.074, which exceeds the critical alpha level of 0.05. This suggests that the variance between the two groups was statistically homogeneous, thereby meeting one of the key assumptions for parametric hypothesis testing (Pallant, 2020). Ensuring homogeneity supports the internal validity of the statistical comparison and enhances the reliability of subsequent inferences (Field, 2013).

Table 2. Pre-test and Post-test Normality Test

Class		Kolmogorov-Smirnova			Shapiro-Wilk		
		Statistic	Df	Sig.	Statistic	Df	Sig.
Results	pretest of control class	.113	24	.200*	.955	24	.340
	post test of control class	.201	24	.013	.958	24	.402
	pre test of experimental class	.144	24	.200*	.962	24	.476
	post test of experimental class	.127	24	.200*	.919	24	.055

*. This is a lower bound of the true significance.
a. Lilliefors Significance Correction

In Table 2, a Shapiro-Wilk test was employed to determine the normality of the test score distributions for both groups. The results demonstrated that all significance values were greater than 0.05 (e.g., experimental post-test Sig. = 0.055, control post-test Sig. = 0.402), indicating that the data conformed to a normal distribution. These results satisfy the assumptions for conducting a parametric t-test and are consistent with procedures in experimental research involving small to medium-sized samples (Ghasemi & Zahediasl, 2012).

As shown in Table 3, The independent-samples t-test revealed a statistically significant difference in post-test scores between the experimental and control groups, $t(46) = -5.720, p < .001$, indicating that the difference in post-test scores between the two groups was statistically significant. Consequently, the null hypothesis (H_0) was rejected and the alternative hypothesis (H_a) accepted,

Table 3. Hypothesis Testing

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower		Upper
Score	Equal variances assumed	1.313	.258	-5.720	46	.000	-17.083	2.986	-23.095	-11.072
	Equal variances not assumed			-5.720	40.970	.000	-17.083	2.986	-23.115	-11.052

demonstrating that the use of the Word Bingo game produced a measurable enhancement in students' vocabulary achievement. This is consistent with findings from other quasi-experimental studies employing vocabulary games in EFL contexts ([Nadiya et al., 2022](#); [Oktaviani et al., 2024](#)).

The findings of this study reinforce the theoretical premise that game-based learning can significantly enhance vocabulary acquisition by engaging learners in cognitively meaningful and interactive tasks. Recent empirical research has shown that educational games provide students with repeated, contextualized exposure to vocabulary under conditions of engagement and enjoyment ([Pertwi, Danial, Asnur, & Abdullah, 2024](#); [Nurfadilah, Safar, & Affandi, 2025](#)). Such interactive, game-based environments not only increase motivation but also reduce language anxiety and foster greater willingness to use new lexical items ([Garhani & Basikin, 2022](#); [Susaniari & Santosa, 2024](#)). In this context, the competitive yet collaborative format of games, similar to the Word Bingo Game, encourages peer interaction and repeated retrieval, which strengthens both receptive and productive vocabulary knowledge ([Hidayatullah et al., 2025](#); [Pertwi et al., 2024](#)). Moreover, structured language games incorporated into formal instruction have proven particularly beneficial for adolescent EFL learners, where

fluctuating motivation and limited exposure often challenge vocabulary development ([Hidayatullah et al., 2025](#); [Nurfadilah et al., 2025](#)).

This study sought to investigate the effectiveness of the Word Bingo Game in improving the vocabulary mastery of tenth-grade students at MA Wahid Hasyim Balung. Over an eight-week period comprising 16 sessions, including pre-test, treatment, and post-test phases. The experimental group was taught vocabulary using the Word Bingo Game, whereas the control group continued to receive instruction through conventional approaches, including teacher-centered explanations and written practice activities. The results of the study demonstrate that students in the experimental group experienced a statistically significant improvement in vocabulary mastery compared to those in the control group, as reflected in the independent-samples t-test outcome (Sig. = 0.000, $p < 0.05$).

The structured use of the Word Bingo activity appeared to enhance not only students' vocabulary recall but also their classroom engagement. Initially, students exhibited hesitation and uncertainty during the first session, yet as they became more familiar with the game's mechanics, their participation and enthusiasm increased noticeably. The Bingo format encouraged repeated exposure and active recall, requiring learners to match

definitions or synonyms with the correct vocabulary items on their cards, practices that support durable vocabulary learning (Nguyen, Linh, & Van Hoa, 2021; Hasna & Kartini, 2025). Such interactive, game-based tasks align with recent findings that show game-based vocabulary instruction can significantly boost both retention and motivation among EFL learners (Garhani & Basikin, 2022; Widiadnya, 2023). Moreover, in contexts of formal instruction, structured language games have proven particularly effective for adolescent learners in EFL settings by increasing engagement, reducing anxiety, and fostering supportive peer interaction, which together contribute to stronger lexical acquisition outcomes (Arif, 2023; Hidayah, Sudirman, & Ardhan, 2025).

The observed improvement in students' mastery of multiple vocabulary categories (nouns, verbs, pronouns, adverbs, and conjunctions) indicates the broad pedagogical impact of the Word Bingo activity. Evidence from studies of game-based vocabulary instruction shows that word games can promote gains across diverse grammatical categories by providing repeated, contextualized practice (Vu, 2021). The importance of explicit grammatical and lexical knowledge for overall language comprehension, especially knowledge of parts of speech, has also been affirmed in recent large-scale studies (Marjokorpi & van Rijt, 2024; Hiebert, 2017). Beyond recognition of isolated items, Word Bingo encouraged learners to apply vocabulary in meaningful contexts, supporting a shift from passive recognition to productive use; this pattern of transfer from recognition to contextualized production has been documented in quasi-experimental and mixed-methods investigations of game-based and technology-mediated vocabulary interventions (Kazu, 2023; Tan, 2022). Collectively, these contemporary findings corroborate the pedagogical claim that structured, game-based activities can foster both breadth and depth in learners' lexical knowledge.

One principal advantage of the Word Bingo game is its multimodal nature: learners receive auditory input when listening to word meanings, perform visual recognition while scanning bingo cards for target items, and activate cognitive strategies such as memory retrieval and process-of-elimination. Recent empirical studies indicate that such multisensory and multimodal approaches significantly improve vocabulary acquisition and retention by integrating auditory, visual, and interactive cues (Chowdhury, 2024; Lee, 2023; Van Singel, 2022). In addition, implementation studies and systematic reviews report that multimodal instruction and interactive apps produce stronger engagement and deeper processing than purely text-based or rote methods (Khairati, 2024; Prastiwi & Lestari, 2023). The competitive yet collaborative structure of Word Bingo also appears to enhance intrinsic motivation and active participation, findings corroborated by recent investigations into game-based learning which show reductions in anxiety and increases in learner willingness to communicate in EFL classrooms (Ningsih, 2023; Susaniari & Santosa, 2024). Altogether, these contemporary studies support the pedagogical rationale that multimodal, game-based activities foster richer, more durable vocabulary learning than traditional, passive approaches.

Another advantage of the Word Bingo game is that its structure supports contextualized vocabulary learning. In this study, the vocabulary items came from the recount-text material in the curriculum, which ensured the game was pedagogically aligned with lesson objectives. This contextual relevance enhances the meaningfulness of vocabulary for learners, a benefit corroborated by empirical research indicating that context-based vocabulary instruction significantly improves both retention and motivation (Aprianti, Mustika Azzahra & Safa'atul Ummah, 2024; Aswadi, 2023). From a methodological standpoint, the adoption of a quasi-experimental design along with

rigorous assumption testing (normality and homogeneity), combined with the use of SPSS for data analysis and demonstration of equivalent pre-test scores, provides robust evidence for internal validity, reinforcing the conclusion that observed gains are attributable to the intervention ([Fitriani, Susanto & Efrizal, 2025](#); [Yuliani, Hartati, Sulaiman, Saptika & Saputri, 2023](#)).

The outcomes of this study carry practical importance for language educators. Incorporating game-based activities such as Word Bingo into vocabulary instruction may do more than boost test scores because it has the potential to reshape classroom dynamics, by fostering collaboration among students, alleviating language learning anxiety, and sustaining learners' attention throughout lessons. Empirical research supports these advantages: games have been shown to enrich EFL vocabulary learning, enhance engagement, reduce affective barriers, and create contexts conducive to meaningful language use ([Garhani & Basikin, 2022](#); [Ebadi, Amini & Gheisari, 2023](#); [Asari, 2023](#)). For educational settings with limited technological or financial resources, Word Bingo offers a low-cost yet effective alternative to resource-intensive digital tools, aligning with findings that traditional board or card games remain viable and impactful options for vocabulary learning ([Bin-Hady, 2023](#); [Sakkir, Azis & Jabu, 2023](#)).

Conclusion

The findings of this study offer robust empirical support indicating that the implementation of the Word Bingo game substantially improves students' vocabulary proficiency relative to traditional teaching approaches. The statistical results further corroborate the effectiveness of the intervention, as evidenced by the experimental group's superior post-test performance and more pronounced vocabulary development compared to the control group. The game's interactive, multisensory, and contextualized

design contributed to greater student engagement, motivation, and recall. These results support the pedagogical value of game-based learning in EFL contexts, especially for fostering active and meaningful vocabulary acquisition.

Given its low-cost, high-impact nature, Word Bingo is a viable strategy for vocabulary instruction, particularly in traditional or resource-limited classrooms. Nevertheless, the study's limited duration and sample scope suggest the need for further research exploring long-term retention effects, broader learner populations, and comparative analyses with other game-based approaches to solidify its applicability across diverse educational settings.

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