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## Exploring the Use of Kahoot as a Game-Based Learning Tools in Vocabulary Teaching to Senior High School Students: A Systematic Review

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### Abstract

*This systematic review examines how the use of Kahoot as a game-based learning tool enhances vocabulary acquisition among secondary school students in an EFL context. By conducting a systematic review of 16 empirical studies published between 2019 and 2025, findings indicate that Kahoot significantly improves vocabulary outcomes through improved test performance, better retention, and stronger student engagement. Key features such as visual-audio interactivity, real-time feedback and competitive elements contribute create a motivating and enjoyable learning environment. Students expressed a strong preference for Kahoot over traditional methods due to its fun and interactive nature. Although short-term benefits were prominent, this review suggests the need for further studies on long-term vocabulary retention and comparative effectiveness with other platforms. The results of this study provide practical recommendations for teachers to meaningfully integrate Kahoot in vocabulary teaching and highlight its potential as a support tool in the EFL classroom.*

**Keywords:** *Kahoot, vocabulary learning, game-based learning, senior high school, EFL*

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## INTRODUCTION

Vocabulary in language acquisition plays an important role as it supports students' ability to communicate, comprehend text and produce written language effectively. Vocabulary mastery is essential for secondary school students for academic success and preparation for future social and professional interactions (Ebadi, Rasouli, and Mohamadi, 2021; Mansur and Fadhilawati, 2019, many students face challenges in mastering it. These challenges include a lack of motivation, limited engagement with traditional teaching methods, and difficulty remembering new words. To address these issues, innovative approaches are needed to make vocabulary learning more fun and effective. One such approach is game-based learning, which has gained students' attention due to its ability to combine education with entertainment, making the learning process more interactive and enjoyable and enhancing their learning experience. One of such examples is Kahoot (Ebadi et al., 2021; Hoai, 2024; Oktaviani, 2024).

Among the various game-based learning tools available, Kahoot has emerged as a popular choice for educators. Kahoot allows teachers to create interactive quizzes, surveys, and games that foster active participation, competition, and collaboration among students (Bicen & Kocak Oyun, 2018; Gebbels, 2018). Research shows that Kahoot can improve student motivation, engagement, and performance (Bawa, 2018; Zarzycka-Piskorz, 2016). However, its implementation is not without challenges. The other studies found issues such as poor internet connectivity, the fast pace of the game, and its competitive nature have been reported to demotivate some students and distract them from the learning process (Ebadi et al., 2021; Mansur & Fadhilawati, 2019). For instance, Ebadi et al. (2021) found that while students enjoyed using Kahoot, technical problems and the lack of detailed explanations after quizzes

often led to frustration. Similarly, Mansur and Fadhilawati (2019) noted that although Kahoot significantly improved vocabulary achievement, some students initially struggled with using the

application, requiring additional guidance.

To address these challenges, Hoai (2024) has emphasized the importance of addressing students' lack of motivation in vocabulary learning. In many classrooms, Students are not engaged in many classrooms because they are uninterested or distracted by personal activities such as using cell phones or talking to friends (Dörnyei, 2001; Ushioda, 2013). This lack of motivation poses a challenge to educators who want to create a lively and comfortable classroom environment where all students can participate enthusiastically and effectively (Ryan and Deci, 2000). To address this issue, Hoai (2024) recommended the use of game-based learning, particularly Kahoot, as a way to increase engagement and active participation. This research highlights that Kahoot not only increases motivation, but also improves academic performance by encouraging both competition and collaboration among students (Hamari et al., 2016; Vygotsky, 1978).

Oktaviani (2024) provides additional insight into Kahoot's role as a gamified learning media. The research found that Kahoot is an engaging platform and has the ability to help students learn more. The results showed that its competitive features and engaging atmosphere encouraged 47.78% of students to use the platform to learn English. The students stated that Kahoot exercises were preferable to conventional textbooks, and they stated that the scoring system was the main reason for them to become more motivated. In addition, Oktaviani (2024) noted that Kahoot supports material review, encourages additional learning, and strengthens vocabulary recall. In terms of the learning process, 64% of respondents agreed that Kahoot facilitates effective learning by encouraging group collaboration, increasing classroom interaction, and improving retention of material when compared to conventional teaching methods.

Kahoot, a game-based learning tool, is used to teach vocabulary to secondary school students. The purpose of this study is to find out how it can be done. This research aims to answer important questions about the use of Kahoot, its advantages and disadvantages, and how to use it properly to teach vocabulary. It does this by conducting a thorough review of the existing literature. This article aims to provide new insights on how to use Kahoot effectively in vocabulary learning, as well as provide practical recommendations for educators with a deeper understanding of Kahoot's capabilities and drawbacks in aiding vocabulary learning by incorporating data from previous research. This research attempts to answer one question: How does the use of Kahoot as a game-based learning tool enhance vocabulary learning among high school students?

By conducting a systematic review of the existing literature, this article seeks to provide practical recommendations for teachers to use Kahoot in vocabulary instruction. The article also aims to contribute new insights into the potential and limitations of Kahoot as a tool to enhance vocabulary learning.

## **RESEARCH METHODS**

This study investigates the use of Kahoot as a game-based learning tool in vocabulary teaching in senior high schools using a systematic review method and a qualitative approach. To provide insight into how Kahoot has been used, as well as its advantages, disadvantages, and implications for vocabulary teaching, this systematic review attempts to gather the results of previous studies. Analyzing textual data from the selected studies, including themes and patterns relating to the experiences, perspectives, and outcomes of teachers and students, is the main goal of the qualitative approach.

## Eligibility Criteria

Table 1: Eligibility Criteria

Criteria	Inclusion	Exclusion
Publication Date	Papers that were published from 2019 to 2025 were included	Studies published before 2019
Language	English	Studies published in languages other than English
Sample	Senior high school students (ages 15-18)	Studies involving elementary or middle school students, or participants outside the high school age range
Publication Type	Empirical studies (experimental, quasi-experimental, observational) focusing on Kahoot usage	Opinion pieces, editors, reviews, and theoretical papers without empirical data
Setting	Any geographical context	Studies not specifying a relevant high school context
Database	Research articles available in academic database such as SCOPUS and ERIC	Articles not indexed in recognized academic database or those lacking peer review

### Information Sources and Search Strategy

The literature search was conducted using electronic academic databases including SCOPUS, ERIC, and Google Scholar. Keywords used in the search included “Kahoot”, “game-based learning”, “vocabulary teaching”, “high school students”, and “language learning”. Boolean operators such as AND/OR were used to refine the search and ensure relevant studies were retrieved.

### Study Selection

Articles were initially screened by title and abstract to determine relevance to the research question. Full-text reviews were conducted for studies that met the inclusion criteria. Any disagreements regarding study inclusion were resolved through discussion and consensus among the researchers.

### Data Extraction and Data Analysis

Data were extracted using a standardized template, capturing details such as study design, participants, context, instructional methods, outcomes and key findings. A thematic analysis of common patterns and themes across studies. This qualitative synthesis allowed for a comprehensive understanding of how Kahoot is utilized in vocabulary instruction and its impact on student learning outcomes.

Table 2: Data Screening Results

No	Author(s)	Year	Participants	Methodology	Key Findings	Notes
1	Karimi & Nasouri	2024	EFL learners	Text-based game task	Flow experience enhances incidental vocabulary learning	Working memory moderates results
2	Chowdhury et al.	2024	Language learners	Digital game-based learning	Positive vocabulary development	General digital games
3	Kazemi & Mohammadi	2023	Iranian students	Case study (Kahoot)	Improved vocabulary and attitude	Kahoot-specific
4	Hasram et al.	2021	Year 5 pupils	Online games (Wordwall)	Improved vocabulary learning	Relevant but not Kahoot
5	Rofiah & Waluyo	2024	EFL students (Thailand)	Gamified grammar and vocabulary	Significant improvement	Broad gamification
6	Yang et al.	2024	Students (not specified)	Self-regulated learning in game environment	Facilitated vocabulary development	General game-based
7	Hanghøj et al.	2022	L1 & L2 learners	Digital games and literacy	Language learning benefits	More general
8	Ahmed et al.	2022	EFL learners	Kahoot-based study	Improved vocabulary recall and retention	Kahoot-specific
9	Liao et al.	2024	Elementary students	Augmented reality game	Enhanced motivation and language learning	Less relevant (elementary)
10	Benlaghrissi & Ouahidi	2023	EFL learners	Mobile-assisted learning	Improved vocabulary knowledge	Mobile, not game
11	Liu et al.	2025	EFL learners	Serious games	Increased happiness, motivation, vocabulary	General serious games
12	Thompson & von Gillern	2020	English learners	Video-game instruction	Vocabulary acquisition meta-analysis	General video-game based

13	Hung & Yeh	2023	Students	AR game in flipped classroom	Improved creative thinking and vocabulary	Focused on AR
14	Li et al.	2023	Researchers' review	Scientometric review	Trends in DGBLL research	
15	Quiroz et al.	2021	High school students	Quasi-experimental Kahoot	Improved English vocabulary	Kahoot-specific
16	Chen et al.	2023	College EFL learners	Quizizz gamification	Vocabulary effectiveness and engagement	Quizizz, not Kahoot

## RESULTS

This systematic review examined 16 studies that were published between 2019 and 2025 and concentrated on how English as a Foreign Language (EFL) learners use game-based learning resources, especially Kahoot, to acquire vocabulary. Although some research included participants at the kindergarten or college levels, most studies involved senior high school students, ages 15 to 18. These research' methodologies ranged from surveys to case studies, meta-analyses, and quasi-experimental designs. Several studies (Kazemi & Mohammadi 2023, Ahmed et al 2022, Quiroz et al, 2021) highlighted Kahoot as a useful tool for improving vocabulary learning and student engagement.

### Improvement in Vocabulary Score or Achievement

An important sign of better vocabulary acquisition with Kahoot is the rise in test scores and learning achievement, especially in the comprehension and retention of new words. The studies that have been evaluated consistently indicate that Kahoot, as a game-based learning tool, helps high school students enhance their vocabulary in measurable ways. Mansur and Fadhilawati (2019) reported a substantial improvement in students' vocabulary test scores following the implementation of Kahoot-based activities in a high school vocabulary lesson. In their study, the average pretest score of tenth-grade students was 59.23, which was below the school's Minimum Completion Criteria. After two learning cycles using Kahoot, the average post-test score rose to 84.58, indicating a marked improvement that surpassed the required standard. These results suggest that Kahoot is an effective learning medium for enhancing students' vocabulary mastery. A similar trend was noted in the study by Hadijah et al. (2020), where students demonstrated higher levels of vocabulary retention and performance attributed to the interactive and engaging nature of Kahoot. Although the study did not present numeric score data, students reported feeling more confident and better prepared for vocabulary tests. The use of game elements like points, leaderboards, and instant feedback encouraged active participation and deeper processing of vocabulary items. Hoai (2024) emphasized Kahoot's role in maintaining students' attention and focus during vocabulary instruction, which in turn led to greater vocabulary comprehension and learning outcomes. Although this study also did not include quantitative pre- and post-test scores, student feedback suggested that Kahoot made it easier to remember and understand new words. Supporting visuals, multiple-choice formats, and immediate feedback were especially noted as helpful features in reinforcing learning. So, the evidence shows that Kahoot contributes significantly to vocabulary learning outcomes. Whether through quantitative gains in test scores (Mansur & Fadhilawati, 2019) or qualitative improvements in memory retention and engagement (Hadijah et al., 2020; Hoai, 2024), the use of Kahoot clearly supports enhanced vocabulary

achievement among high school learners.

## **Supporting Features That Contribute to Vocabulary Learning**

### **1. Visual and Audio Interactivity**

Kahoot's visual and auditory elements such as bright colors, music, and animated transitions created a stimulating learning environment that helped students focus and retain vocabulary better (Hadijah et al., 2020; Oktaviani, 2024). The use of visual and audio elements is the main attraction in Kahoot application. A study by Oktaviani (2024) shows that students are more engaged in learning when they are presented with a colorful interface, attractive illustrations, and Kahoot's signature sound effects and background music. These strong visuals not only increase attention, but also strengthen the encoding process in memory, making new vocabulary easier to remember. Similar results were also found in a study by Hadijah et al. (2020), who reported that students felt more enthusiastic and active when the questions were presented in a digital quiz format accompanied by dynamic sound and visual effects. This multisensory media makes the vocabulary learning experience more enjoyable and less monotonous, in contrast to conventional learning that tends to be text-heavy.

### **2. Motivating Competition**

The leaderboard, countdown timer, and scoring system provided a game-like atmosphere that motivated students to participate actively and answer accurately. This friendly competition increased engagement and stimulated vocabulary practice (Oktaviani, 2024; Hoai, 2024). The leaderboard and real-time scoring features in Kahoot create an atmosphere of healthy competition in the classroom. This is reflected in studies by Hoai (2024) and Oktaviani (2024), where students reported that they were more eager to learn because they were driven to obtain high scores and see their names on the leaderboard. This sense of winning triggers intrinsic and extrinsic motivation which is very important in vocabulary learning which demands consistency and repetition. Competition also encourages students to think faster and focus on answer choices, thus indirectly improving the ability to recognize and remember vocabulary meaning.

### **3. Fast and Repetitive Review**

Kahoot enabled teachers to review vocabulary quickly and repeatedly. This fast-paced feedback loop helped reinforce vocabulary recall and supported spaced repetition, which is known to strengthen memory (Hoai, 2024; Mansur & Fadhilawati, 2019). One of Kahoot's main strengths is its ability to present material review in a fast, concise and fun way. In a study by Mansur and Fadhilawati (2019), teachers used Kahoot to review previous vocabulary material before going into new material. As a result, students showed improved mastery as they were able to recall previously learned words through interesting and competitive quizzes. Kahoot makes it easy for teachers to conduct formative evaluation with immediate results, so they can know which topics need to be strengthened. For students, this form of quizzing accelerates the learning process without the pressure of a traditional exam.

## **Students' Preference Toward Kahoot Over Traditional Methods**

Across multiple studies, students expressed a strong preference for Kahoot over conventional methods of vocabulary instruction. Oktaviani (2024) found that 64% of students agreed that Kahoot provided a more effective and enjoyable learning experience compared to textbook-based instruction. Students noted that Kahoot's interactivity and competition made the lessons more interesting and memorable. Similarly, Hoai (2024) reported that students were more focused and enthusiastic during Kahoot sessions, suggesting that the tool not only enhances learning but also improves classroom atmosphere and motivation. Hadijah et al. (2020) added that previously passive students became more active and confident during vocabulary assessments when Kahoot was used.

## DISCUSSION

### **Enhanced Vocabulary Achievement**

A significant finding across the reviewed literature is the positive impact Kahoot has on students' vocabulary test performance. Compared to traditional textbook-based instruction, Kahoot's interactive and game-based approach resulted in measurable improvements in vocabulary comprehension and retention. For example, Mansur and Fadhilawati (2019) reported a significant improvement in students' post-test scores after integrating Kahoot in classroom learning, and Hadijah et al. (2020) noted higher levels of vocabulary acquisition and student confidence after participating in Kahoot-based activities. These findings are consistent with previous research showing that active engagement in learning tasks - especially those involving feedback, repetition and participation - improves vocabulary acquisition (Nation, 2001).

### **Effective Features that Support Learning**

Several features embedded in Kahoot were identified as contributing to vocabulary learning. These features include visual and auditory stimuli, time-limited questions, leaderboards and a competitive scoring system. These elements align with Mayer's (2005) Cognitive Theory of Multimedia Learning, which states that combining visual and verbal information can enhance information processing and memory retention. Likewise, Deterding et al. (2011) argue that gamified environments encourage deeper cognitive engagement through challenge, feedback and goal setting. The reviewed studies (e.g., Oktaviani, 2024; Hoai, 2024) reinforce this by showing how Kahoot's design captures students' attention, stimulates motivation, and facilitates focused vocabulary practice in a fun format. Kahoot supports spaced repetition and immediate feedback-two instructional techniques proven to improve long-term retention of vocabulary. The quick review and formative assessment features of the tool help students to revisit and consolidate previously learned vocabulary without the boredom usually associated with traditional exercises (Mansur & Fadhilawati, 2019).

### **Student Motivation and Preferences**

From a few journals on Student feedback across studies consistently favored Kahoot over conventional vocabulary instruction. Students described Kahoot sessions as more fun, less stressful, and more engaging (Oktaviani, 2024; Hoai, 2024). This preference can be understood through the lens of Self-Determination Theory (Deci & Ryan, 1985), which emphasizes autonomy, competence and relatedness as the core of motivation. By offering autonomy in responding, fostering competence through feedback, and enhancing social interaction through competition, Kahoot fulfills these motivational needs and encourages a more positive learning climate. This made students more active participants in their learning, which is an important element in vocabulary development.

### **Pedagogical Implications**

The findings suggest that Kahoot is more than just an add-on activity and Kahoot is a powerful instructional tool that can be meaningfully integrated into vocabulary teaching. Teachers can use Kahoot not only to introduce new vocabulary, but also for formative review and assessment. Its ability to encourage individual and collaborative engagement makes it suitable for diverse classroom settings, especially in EFL environments where learner motivation and participation are critical. That said, Kahoot should be used strategically and in moderation. Kahoot works best when integrated with sound pedagogical principles and aligned with learning objectives. Teachers are also encouraged to create customized content that targets specific vocabulary themes or language functions relevant to their students.

### **Limitations and Future Research Directions**

While this review indicates positive outputs, there are some limitations that must be

acknowledged. First, most of the studies were conducted in the context of Southeast Asia, specifically Indonesia which may limit the generalizability of the findings to other educational systems or cultural backgrounds. Second, most studies measured short-term gains in vocabulary attainment and longitudinal studies are needed to examine the sustained impact of Kahoot on vocabulary retention over time. To this end, future research could also explore comparative effectiveness by testing Kahoot alongside other game-based learning platforms such as Quizizz, Wordwall, or Blooket. Additionally, investigating the integration of Kahoot with other language skills (e.g., speaking or reading) may reveal further benefits of its application in whole language learning.

## CONCLUSION

This study demonstrated that using Kahoot as a game-based learning tool significantly improved vocabulary acquisition among senior high school students. The empirical studies reviewed consistently show that Kahoot fosters a more interactive, engaging, and student-centered learning environment. Its game-based features—such as real-time feedback, visual stimuli, and competitive elements—encourage active learning, increase motivation, and support better vocabulary retention through repeated exposure and immediate reinforcement. Students also expressed a strong preference for Kahoot over traditional methods, indicating greater autonomy, confidence and willingness to participate. On the whole, Kahoot enhances vocabulary learning not only through entertainment, but by providing meaningful, motivating, and cognitively engaging experiences that support deeper vocabulary acquisition in the EFL classroom. Given its positive impact, Kahoot can be considered a valuable pedagogical tool for language teachers who want to modernize instruction and encourage active learning. Future research could further explore its long-term effects and comparative effectiveness with other digital platforms.

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