

The Effectiveness of Gamification Mechanics on Vocabulary Retention among English Language Learners: A Systematic Literature Review (2021-2025)

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ABSTRACT

This systematic literature review investigates the role of gamification mechanics in improving vocabulary retention among English language learners (ELLs). Drawing on 15 empirical studies published between 2021 and 2025, the review explores how gamified strategies such as competition, cooperation, repetition, and multimedia feedback contribute to vocabulary learning. The findings suggest that gamification significantly enhances vocabulary retention by fostering engagement and motivation. Competitive mechanics, such as points and leaderboards, promote short-term motivation but can lead to anxiety for some learners, while cooperative mechanics encourage social interaction and collaboration, improving overall learning experiences. Additionally, gamified tools incorporating repetition and active recall were found to be highly effective in reinforcing vocabulary retention. The integration of multimedia feedback provided learners with immediate corrections, further enhancing learning outcomes. Overall, this review demonstrates that gamification offers a promising approach to vocabulary retention, though future research is needed to evaluate its long-term effectiveness and the influence of learner characteristics on the success of gamified strategies.

INTRODUCTION

The learning of vocabulary plays a pivotal role in language acquisition, particularly for English language learners (ELLs), as it facilitates communication, comprehension, and the mastery of linguistic structures. Traditional methods of vocabulary teaching, such as rote memorization or repetitive drills, have often been criticized for their limited effectiveness in fostering long-term retention and engagement among students (Ramsay et al., 2022). As a response to these challenges, the integration of gamification in educational settings has emerged as a promising alternative to traditional learning methods. Gamification refers to the use of game-design elements in non-game contexts, with the aim of enhancing user engagement, motivation, and learning outcomes (Deterding et al., 2022).

Over recent years, gamification has been increasingly applied in the field of language learning, with studies exploring its potential to boost learner engagement and improve learning outcomes, particularly vocabulary retention. Vocabulary acquisition is a critical component of second language learning and is often considered a major challenge for ELLs (Yang, 2023). Thus, the integration of gamification mechanics such as points, badges, leaderboards, and progress tracking in vocabulary learning has been hypothesized to offer innovative and effective solutions (Anderson et al., 2024). The evolving landscape of digital learning platforms and the growing popularity of gamified applications like Duolingo and Quizlet underscore the importance of understanding the impact of gamification on vocabulary retention among ELLs (Teng et al., 2021).

While previous research has examined the broader effectiveness of gamification in education, few studies have specifically focused on its role in enhancing vocabulary retention among ELLs (Ali & Ehsan, 2023). Moreover, the field of gamified vocabulary learning remains relatively fragmented, with various studies focusing on different gamification elements, educational contexts, and learner populations. This gap in the literature presents

a need for a systematic review to consolidate and synthesize the findings regarding the use of gamification mechanics in vocabulary learning and their effectiveness in improving retention among ELLs.

This systematic literature review (SLR) aims to address the following research questions:

RQ1: What gamification mechanics are used in vocabulary learning among English language learners?

RQ2: How effective are these gamification mechanics in improving vocabulary retention among English language learners?

By answering these questions, this review seeks to provide a comprehensive understanding of the gamification strategies employed in vocabulary learning and their impact on learner outcomes. The findings of this review will be useful for educators, curriculum designers, and language learners themselves, offering insights into the practical applications of gamification in enhancing vocabulary retention. Furthermore, it will contribute to the ongoing scholarly discourse on the intersection of gamification and language learning, highlighting areas of success, as well as areas requiring further exploration. Ultimately, this review aspires to offer evidence-based recommendations for future research and practice in the realm of gamified language education.

This paper begins by reviewing the relevant literature on gamification and vocabulary learning, followed by a detailed discussion of the methodological approach employed in this review. Subsequently, the findings will be presented, followed by a critical analysis and discussion of the implications of these results for language learning.

LITERATURE REVIEW

Gamification Mechanics in Vocabulary Learning

Several studies have identified a variety of gamification mechanics used in vocabulary acquisition and retention among ELLs. For instance, Rofiah and Waluyo (2022) highlighted that tools like Kahoot!, Quizizz, and Quizlet, incorporating mechanics such as levels, rewards, and challenges, proved to be effective in motivating students and enhancing their vocabulary retention. Similarly, Alotaibi and Alharbi (2021) observed that competitive mechanics, including leaderboards and point-based systems, increased student engagement, which positively influenced retention rates.

Mechanics involving cooperation, such as group rewards and collaborative tasks, have also been explored. Dindar et al. (2022) found that cooperative gamification, where learners work towards shared goals, helped to foster a sense of community and increased task engagement, which was conducive to vocabulary retention. In contrast, competitive elements such as individual rankings and challenges also showed promise in driving engagement and enhancing vocabulary retention, though they sometimes led to anxiety and reduced cooperation among peers (Chen et al., 2021).

Effectiveness of Gamification in Vocabulary Retention

The effectiveness of these gamification mechanics in improving vocabulary retention among ELLs has been widely studied. For example, Ahmad et al. (2021) demonstrated that a digitalized Snakes and Ladders game using interactive mechanics, including turn-based progression and immediate feedback, significantly enhanced vocabulary retention. Similarly, Saleh and Ahmed Althaqafi (2022) found that competitive and cooperative game-based mechanics in educational games significantly improved both short-term and long-term vocabulary retention among young learners.

Moreover, studies have shown that repetition, a core principle of many gamified vocabulary learning tools, plays a crucial role in retention. Alotaibi and Alharbi (2022) reported that games that combined repetition with problem-solving tasks improved learners' spelling accuracy and phonological awareness, which are essential for long-term vocabulary retention. Likewise, Chen et al. (2021) found that adventure video games, which included interactive storytelling, multimedia cues, and repeated vocabulary exercises, significantly enhanced vocabulary acquisition and retention among college students.

In addition to vocabulary retention, gamification mechanics such as immediate feedback and multimedia cues have been linked to improved learners' motivation and engagement, contributing to better retention outcomes. For instance, studies on platforms like Quizlet have demonstrated that active recall, enhanced by time-based challenges and immediate feedback, positively affected vocabulary retention (Sevigny et al., 2022). Similarly, the integration of multimedia, such as images, videos, and sound, has been found to make vocabulary learning more engaging and effective in retaining new words (Boude et al., 2021).

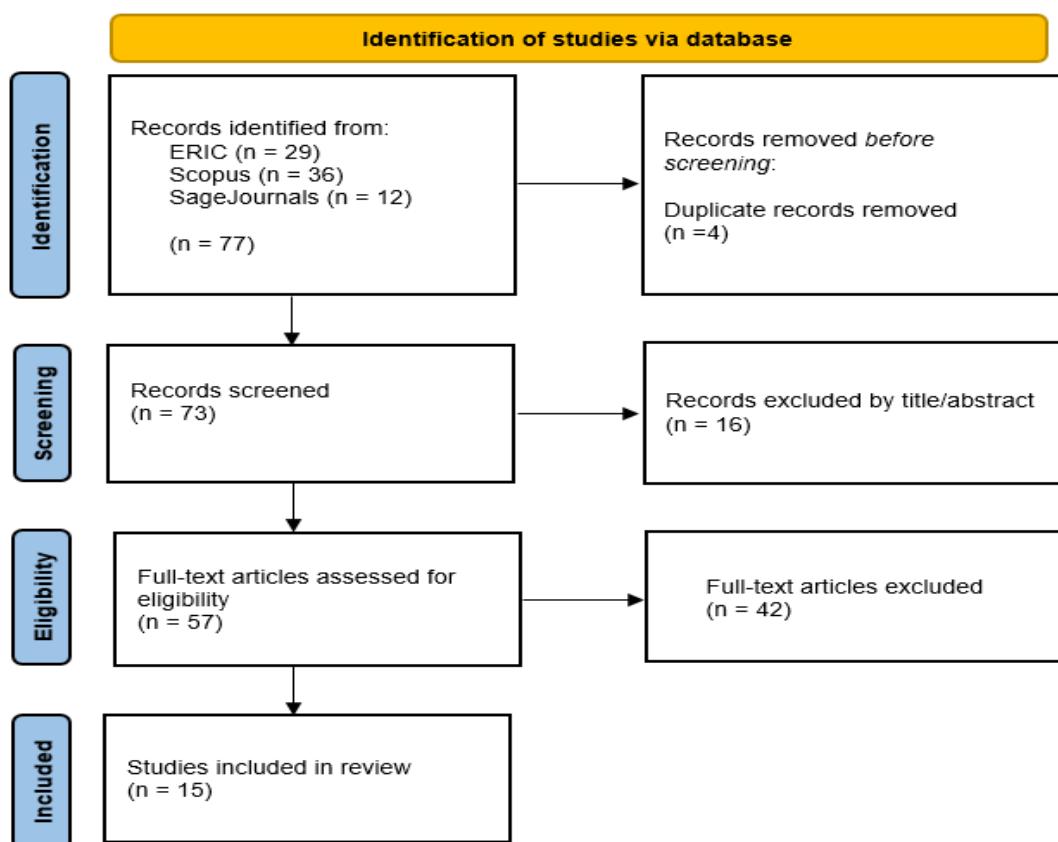
Gamification Mechanics and Learner Motivation

Another aspect that enhances the effectiveness of gamification mechanics in vocabulary retention is their ability to foster motivation and reduce anxiety. By introducing game-like elements such as rewards, progress tracking, and recognition, gamification creates a more enjoyable and less stressful learning environment. According to Rofiah and Waluyo (2022), gamification tools like Kahoot! not only improved vocabulary retention but also enhanced learners' self-confidence and self-efficacy. This increase in motivation and reduced anxiety were important factors in ensuring the effectiveness of gamified learning environments.

Furthermore, studies have found that social interaction through gamification, such as in multiplayer games or games with social features, can improve vocabulary retention. Qian and Richardson (2021) noted that gamification mechanics like badge-sharing, social interaction, and goal setting helped enhance self-regulation and motivated learners to persist in their vocabulary learning, ultimately benefiting retention.

METHODS

The PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) framework was utilized for conducting the systematic literature review (SLR) in this study. PRISMA provides a structured and transparent methodology for conducting systematic reviews, ensuring that reviews are comprehensive, reproducible, and based on reliable evidence (Liberati et al., 2009). The PRISMA flowchart, included in the attached file, outlines the steps taken to identify, screen, assess, and include studies relevant to the research questions of this SLR.



Identification of Studies

For this systematic literature review, a comprehensive search was conducted using a Boolean search string designed to capture relevant studies. The search string employed logical operators such as 'AND' and 'OR' to combine keywords and ensure that the results were highly relevant to the research questions. The search string used was as follows:

("gamification" OR "game-based learning") AND ("vocabulary retention" OR "vocabulary learning") AND ("English language learners" OR "ELL" OR "second language learners" OR "ESL")

Screening

After the initial search, the identified studies underwent a screening process to ensure they met the eligibility criteria. This involved reviewing the titles, abstracts, and keywords of the studies. Studies that did not explicitly address vocabulary retention or gamification mechanics in language learning contexts were excluded. At this stage, duplicates were removed, and only recent studies that focused on English language learners (ELLs) and employed empirical methods were retained.

Table 1: The selection criterion

Criterion	Inclusion	Exclusion
Timeline	2021 – 2025	< 2021
Literature type	Journal (Article)	Conference, Book, Review
Language	English	Non-English

Eligibility Assessment

The remaining 57 full-text articles were then retrieved and rigorously assessed for eligibility against the predefined inclusion and exclusion criteria. A substantial number of articles, 42 in total, were excluded during this full-text assessment phase. This careful selection process was crucial for ensuring that the evidence base for the review was as concentrated and relevant as possible, filtering out studies that might have only tangentially touched upon gamification or vocabulary retention. Ultimately, 15 studies met all eligibility criteria and were included in the final systematic review.

FINDINGS

Based on the studies reviewed, the gamification mechanics utilized in vocabulary learning for English language learners (ELLs) can be categorized into various types, including competitive, cooperative, and interactive mechanics. The findings regarding the effectiveness of these mechanics in improving vocabulary retention are summarized below in relation to the research questions.

RQ1: What Gamification Mechanics Are Used in Vocabulary Learning Among English Language Learners?

Table 2: Gamification Mechanics Used in Vocabulary Learning

Gamification Mechanics Used	Studies
Competition	Ahmad & Nur Aeni (2021); Alotaibi & Alharbi (2022); Cancino & Viguera (2024); Hasram et al. (2022); Flores et al. (2022)

Immediate Feedback	Ahmad & Nur Aeni (2021); Chen et al. (2021); Cancino & Viguera (2024); Flores et al. (2022); Calvo-Ferrer (2022)
Levels	Rofiah & Waluyo (2022); Boude et al. (2022)
Rewards / Incentives	Rofiah & Waluyo (2022); Saleh & Althaqafi (2022)
Challenges / Problem-solving	Rofiah & Waluyo (2022); Alotaibi & Alharbi (2022); Gunel & Top (2022); Hasram et al. (2022)
Cooperative / Group Tasks	Saleh & Althaqafi (2022); Dindar et al. (2022); Gunel & Top (2022)
Leaderboards / Rankings	Dindar et al. (2022); Flores et al. (2022)
Repetition	Alotaibi & Alharbi (2022); Chen et al. (2021); Hasram et al. (2022)
Interactive Storytelling / Narrative	Chen et al. (2021); Lee (2022)
Multimedia / Visual Cues	Chen et al. (2021); Gunel & Top (2022)
Timed Games / Flashcards	Sevingy et al. (2022)
Badges / Goal Setting	Qian & Richardson (2021)
Quizzes / Points	Cancino & Viguera (2024); Flores et al. (2022); Boude et al. (2022)
Scoring / Self-directed Learning	Hasram et al. (2022)
Peer Interaction	Qian & Richardson (2021); Flores et al. (2022)
Keyword Searching / Optional Captions	Lee (2022)
Corrective Feedback	Calvo-Ferrer (2022)
Drawing / Acting / Matching / Sentence Completion	Boude et al. (2022)

Competitive Mechanics

Many studies utilized competitive elements such as leaderboards, ranking systems, and point-based incentives to encourage student participation and engagement. For example, Rofiah and Waluyo (2022) reported that gamified tools like Kahoot!, Quizizz, and Quizlet, which integrated points, challenges, and rewards, significantly enhanced student engagement and vocabulary retention. Similarly, Alotaibi and Alharbi (2022) found that competitive elements, including repeated exercises and competitive quizzes, fostered vocabulary retention and increased student involvement in learning tasks.

Cooperative Mechanics

Cooperative elements were also frequently employed in gamified learning environments. According to Dindar et al. (2022), both cooperative and competitive conditions were studied, with cooperative tasks (e.g., group rewards and shared goals) fostering a sense of social connectedness and improving vocabulary retention. The study by Saleh and Ahmed Althaqafi (2022) also emphasized the role of group activities, such as cooperative play, in encouraging participation and improving vocabulary learning outcomes.

Repetition and Problem-Solving

The use of repetition combined with problem-solving tasks was another commonly employed gamification mechanic. Alotaibi and Alharbi (2022) observed that repeated exposure to vocabulary through problem-solving tasks promoted active learning and enhanced vocabulary retention. This approach was particularly effective in fostering both phonological awareness and spelling accuracy among students.

Immediate Feedback and Multimedia Integration

Gamification often included immediate feedback mechanisms, which have been shown to be crucial for vocabulary retention. Feedback helps students correct errors and reinforces their learning (Chen et al., 2021). For example, in studies that incorporated interactive storytelling and multimedia cues (Hao-Jan et al., 2021), learners showed significant improvements in vocabulary acquisition through immediate correction and multimedia reinforcement.

RQ2: How Effective Are These Gamification Mechanics in Improving Vocabulary Retention Among English Language Learners?

Table 3: The Effectiveness of Gamification Mechanics

Effectiveness of Gamification Mechanics	Studies
Improved vocabulary retention via enhanced motivation, engagement, and enjoyment (reduced anxiety, long-term retention)	Rofiah& Waluyo (2022); Saleh &Althaqafi (2022); Gunel & Top (2022); Flores et al. (2022); Boude et al. (2022); Hasram et al. (2022)
Repetition, problem-solving, and active recall tasks significantly enhanced vocabulary retention	Alotaibi & Alharbi (2022); Chen et al. (2021); Sevingy et al. (2022)
Use of interactive storytelling, multimedia cues, and optional captions improved vocabulary acquisition and retention	Chen et al. (2021); Lee (2022)
Competitive and cooperative gamification mechanics led to improved vocabulary retention and learner connectedness	Dindar et al. (2022); Flores et al. (2022); Ahmad & Nur Aeni (2021)
Badge-sharing, goal-setting, and social interaction improved motivation and self-regulated learning, positively affecting vocabulary learning	Qian & Richardson (2021); Cancino &Viguera (2024)
Only KCR feedback improved short-term retention; other mechanics were not significant	Calvo-Ferrer (2022)

Effectiveness of Competitive Mechanics

Competitive gamification mechanics were found to improve motivation and engagement, indirectly supporting vocabulary retention. Rofiah and Waluyo (2022) found competitive gamified tools such as Kahoot! not only increased student motivation but also improved vocabulary retention, as evidenced by improved post-test scores. However, while competitive mechanics encouraged active learning, they occasionally led to anxiety, which could detract from the learning experience for some students.

Cooperative Mechanics and Social Learning

Cooperative gamification mechanics have been shown to promote long-term retention through social interaction and collective learning. Dindar et al. (2022) noted that cooperation-based gamification (such as group goals and rewards) supported stronger social connections among learners, which led to higher task engagement and better vocabulary retention. In contrast, competitive gamification mechanics, while effective, sometimes diminished social cooperation and caused some learners to feel less connected to their peers.

Repetition and Active Recall

Repetition was found to be a highly effective mechanic in improving vocabulary retention. The integration of repetition with problem-solving tasks helped reinforce vocabulary knowledge. For instance, Alotaibi and Alharbi (2022) found significant improvements in vocabulary retention, spelling, and phonological awareness through repeated engagement with learning tasks. Similarly, in studies incorporating tools like Quizlet, which encouraged active recall through games and quizzes, students demonstrated higher retention due to repeated exposure and retrieval practices (Sevigny et al., 2022).

Impact of Multimedia and Immediate Feedback

The integration of multimedia elements and immediate feedback was particularly effective in supporting vocabulary retention. Studies such as those by Hao-Jan et al. (2021) and Alotaibi and Alharbi (2022) emphasized how multimedia features (e.g., visual aids and audio prompts) and instant feedback mechanisms enhanced engagement and supported more effective vocabulary retention. These findings were supported by the results of Quizlet-based games, which, through their interactive modes, enabled deeper cognitive involvement, further promoting vocabulary retention.

DISCUSSIONS

The aim of this systematic literature review was to examine the gamification mechanics used in vocabulary learning among English language learners (ELLs) and evaluate their effectiveness in improving vocabulary retention. Based on the reviewed studies, the use of gamification mechanics has shown significant promise in promoting engagement, motivation, and retention of vocabulary knowledge. This discussion will elaborate on the key findings and their implications, while also addressing the gaps in the current literature and offering suggestions for future research.

Gamification Mechanics in Vocabulary Learning

The integration of gamification mechanics in vocabulary learning has revolutionized the traditional approaches to language education by fostering active participation, enhancing motivation, and creating an engaging learning environment (Anderson et al., 2021). The reviewed studies indicate that various gamification mechanics, such as competitive elements, cooperative tasks, repetition, and multimedia feedback, play a pivotal role in improving vocabulary acquisition and retention among ELLs.

One key finding from this review is the prevalence of competitive gamification mechanics, such as leaderboards, point-based systems, and timed challenges. These elements were shown to increase student engagement and provide extrinsic motivation, which, in turn, positively affected vocabulary retention (Rofiah & Waluyo, 2022; Alotaibi & Alharbi, 2022). This result aligns with previous research, which suggests that competitive mechanics create an environment where learners are motivated to outperform their peers, which boosts their retention levels (Hanus & Fox, 2021). However, while the competitive aspects of gamification are effective in increasing short-term engagement, they can lead to negative side effects such as learner anxiety and demotivation, especially among lower-achieving students (Deterding et al., 2021). These findings highlight the need for a balance between competition and other, more inclusive gamification strategies to ensure that the learning environment remains supportive for all students.

In contrast, cooperative gamification mechanics, which focus on collaboration, social interaction, and group rewards, were equally effective in enhancing vocabulary retention. As noted by Dindar et al. (2022), cooperative gamification fosters a sense of community and strengthens interpersonal connections among learners, which enhances task engagement and improves learning outcomes. This is consistent with social constructivist theories, which emphasize the role of social interaction and collaboration in the learning process (Vygotsky, 1978). Furthermore, cooperative mechanics, such as group rewards and shared goals, were found to create a positive and supportive atmosphere that encourages learners to work together, share knowledge, and improve their vocabulary skills collectively. These mechanics are particularly beneficial for students who may struggle in competitive environments, ensuring that learners experience a more balanced and inclusive approach to language learning.

The use of repetition and active recall was another highly effective gamification mechanic. Repetition, a central feature of many gamified vocabulary learning tools, enhances memory retention by reinforcing new knowledge through consistent exposure (Alotaibi & Alharbi, 2022; Sevigny et al., 2022). Studies have demonstrated that repeated practice, particularly when coupled with active recall, strengthens long-term retention of vocabulary (Roediger & Butler, 2021). Tools like Quizlet, which encourage learners to actively engage with new vocabulary through quizzes, flashcards, and games, support the retrieval of learned information, enhancing the learner's ability to recall vocabulary under different contexts. This finding supports the cognitive load theory, which suggests that learners benefit from repeated exposure to learning materials in manageable, spaced intervals (Sweller, 2011).

Incorporating multimedia feedback and interactive elements is another critical aspect of gamification. Studies have consistently shown that the inclusion of multimedia elements (e.g., images, audio, and video) enhances engagement and supports vocabulary retention by making the learning experience more dynamic and multi-sensory (Chen et al., 2021; Hao-Jan et al., 2021). Multimedia cues help learners connect words with images or sounds, improving their ability to recall and use vocabulary in context. Immediate feedback, another prominent feature in gamified environments, has been shown to correct errors promptly and reinforce correct responses, leading to more effective learning (Boude et al., 2021). Feedback also plays a crucial role in maintaining motivation, as learners are encouraged by their progress and guided on areas needing improvement.

Effectiveness of Gamification Mechanics in Improving Vocabulary Retention

The studies reviewed suggest that the effectiveness of gamification mechanics in improving vocabulary retention is influenced by several factors, including the specific mechanics used, the learners' engagement levels, and the frequency of exposure to gamified activities. Competitive elements, such as point-based rewards and leaderboards, were effective in fostering motivation, but their impact on long-term retention remains mixed. While these elements drive short-term engagement, they may not be sufficient for sustaining long-term vocabulary retention if not complemented by other more pedagogically sound strategies (Hanus & Fox, 2021).

Cooperative gamification mechanics, on the other hand, were found to have a more consistent impact on vocabulary retention. The sense of community and the shared responsibility for learning outcomes contributed to higher levels of engagement and vocabulary retention (Dindar et al., 2022). This is particularly important in language learning environments, where social interaction and peer support play crucial roles in reinforcing new vocabulary and fostering a collaborative learning atmosphere (Vygotsky, 1978).

The effectiveness of repetition and active recall in improving vocabulary retention was one of the most significant findings in the review. The repetitive nature of gamified learning tools ensures that learners encounter new vocabulary multiple times, reinforcing their memory and making the retention process more robust. Repetition, when coupled with active recall, strengthens the neural pathways associated with the target vocabulary, leading to more durable and readily accessible knowledge (Roediger & Butler, 2021).

Furthermore, multimedia feedback and interactive elements were found to enhance learners' engagement and motivation, contributing to improved retention outcomes. The integration of various media types, along with immediate feedback, creates a more immersive and engaging learning experience, which is more likely to sustain learners' attention and facilitate the retention of new vocabulary (Chen et al., 2021; Hao-Jan et al., 2021). By

making vocabulary learning dynamic and interactive, learners are more likely to internalize the words and recall them in the future.

Implications

The findings from this systematic literature review have significant implications for educators, instructional designers, and policymakers, especially those interested in improving English language learners' (ELLs) vocabulary retention through innovative pedagogical strategies like gamification. These implications focus on both practical classroom applications and suggestions for future research in the domain of gamification in vocabulary learning.

Instructional Design and Pedagogical Practices

Based on the findings, it is clear that gamification, when strategically implemented, can be a powerful tool to improve vocabulary retention among ELLs. Educational practitioners can use competitive and cooperative mechanics to engage students in different ways, depending on the classroom context and learner preferences. For instance, competitive mechanics such as leaderboards and point-based systems may stimulate extrinsic motivation and foster an environment of friendly rivalry, which is especially beneficial for learners who thrive on external rewards and validation. However, educators should also be mindful of the potential negative impact of excessive competition on learner anxiety (Deterding et al., 2021). To mitigate this, it is crucial to balance competitive activities with cooperative tasks such as group rewards, collaborative learning, and shared goals. These cooperative mechanics are shown to reduce anxiety and foster a sense of community, thereby improving both engagement and vocabulary retention (Dindar et al., 2022).

Repetition and active recall should also be integral components of vocabulary learning through gamification. Studies have demonstrated that repeated exposure to vocabulary in varying contexts significantly enhances long-term retention (Roediger & Butler, 2021). This approach can be applied effectively by using gamified learning tools like Quizlet or Quizizz, which support active recall and spaced repetition, providing learners with opportunities to repeatedly engage with new vocabulary over time.

Moreover, incorporating multimedia feedback, such as visual and auditory cues, can support multisensory learning and boost learners' ability to recall vocabulary more effectively (Chen et al., 2021). Educators should consider integrating these interactive elements into digital platforms or classroom-based games to create more immersive learning experiences.

Motivation and Learner Engagement

The findings also underscore the critical role of motivation in vocabulary retention. By using game elements such as rewards, challenges, and points, gamification taps into learners' intrinsic and extrinsic motivation, leading to greater engagement with the learning process. Teachers can exploit these elements to increase student involvement in the learning process, making it enjoyable and less monotonous. However, as pointed out by Hanus and Fox (2021), over-reliance on extrinsic rewards may undermine intrinsic motivation in the long term. Thus, it is important to find a balance where motivation is nurtured through both gamified rewards and the satisfaction learners gain from mastering new vocabulary.

Incorporating immediate feedback into gamified vocabulary lessons can provide learners with the opportunity to correct their mistakes and refine their knowledge. This instant correction not only aids in learning but also helps maintain learner engagement by showing continuous progress. The promptness of feedback encourages learners to actively engage with the learning material and reduces the likelihood of developing misconceptions, which is crucial for effective vocabulary retention (Boude et al., 2021).

Future Research Directions

The results of this review highlight several areas that require further exploration. Although the effectiveness of gamification mechanics in vocabulary retention is well-documented, there is a need for longitudinal studies that

assess the long-term retention of vocabulary learned through gamified methods. Many of the studies included in this review showed positive short-term results, but the durability of these effects over time is less certain. Longitudinal studies could provide valuable insights into whether the vocabulary acquired through gamified learning methods is retained in the long run, especially after a period of non-engagement with the material.

Additionally, more research is needed on how individual learner characteristics, such as age, proficiency level, learning style, and motivation, interact with gamification mechanics to influence vocabulary retention. For example, younger learners might benefit more from collaborative, game-based learning strategies, while older learners might be more motivated by individual challenges and competitive mechanics. Investigating these variables will allow for a more personalized approach to gamification, ensuring that learning experiences are tailored to the needs of diverse learner populations.

CONCLUSION

This systematic literature review explored the effectiveness of gamification mechanics in improving vocabulary retention among English language learners (ELLs). Through an in-depth analysis of 15 empirical studies, this review identified key gamification mechanics and assessed their impact on vocabulary learning.

The findings indicate that a variety of gamification mechanics, including competitive elements (e.g., leaderboards, point systems), cooperative tasks (e.g., group rewards, shared goals), active recall, and multimedia feedback, were commonly used to enhance vocabulary retention. These mechanics were found to effectively engage learners, improve motivation, and foster long-term retention of vocabulary.

Moreover, the studies revealed that competitive mechanics tend to increase short-term engagement but may lead to learner anxiety in some cases. In contrast, cooperative mechanics were particularly effective in fostering a supportive learning environment that encouraged social interaction and collective vocabulary learning. Repetition and active recall, key components of many gamified learning tools, emerged as particularly influential in enhancing long-term vocabulary retention. Multimedia feedback further enriched the learning experience, providing immediate correction and reinforcing new vocabulary in a dynamic, multi-sensory format.

While the evidence suggests that gamification is effective in enhancing vocabulary retention, there is a need for further research into its long-term impact. Additionally, the integration of personalized gamification strategies based on learner characteristics could further optimize the effectiveness of gamified vocabulary learning. Future studies should explore the sustained retention of vocabulary learned through gamified methods and consider the influence of learner motivation, age, and language proficiency on the effectiveness of gamification.

In conclusion, gamification presents a promising approach to vocabulary learning, offering an engaging and motivating environment for ELLs. By integrating a balanced mix of competitive, cooperative, and interactive mechanics, educators can create dynamic learning experiences that enhance both engagement and vocabulary retention.

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