

A SYSTEMATIC REVIEW OF FLASHCARDS FOR ENGLISH LANGUAGE TEACHING (ELT)

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Abstract

Flashcards have long been recognized as a valuable tool in English Language Teaching (ELT), particularly for helping students build and retain vocabulary. With the rise of technology, traditional paper-based flashcards have evolved into digital formats, making them more versatile and widely accessible in language learning. This study aims to analyze trends in flashcard research and explore their impact on vocabulary acquisition, student engagement, and technological integration. This systematic review explores the effectiveness of flashcards in ELT, focusing on primary school students by analyzing studies published between 2020 and 2024. Following the PRISMA framework, relevant studies were selected from databases such as Google Scholar, Mendeley, and Semantic Scholar, ensuring a rigorous screening process based on specific inclusion and exclusion criteria. The findings reveal that flashcards improve vocabulary retention, increase student engagement, and foster motivation. Digital flashcards, in particular, offer interactive features, multimedia support, and ease of access, creating a more engaging and adaptable learning experience. However, challenges such as unequal access to technology and the risk of over-reliance on digital tools must be considered. This review emphasizes the importance of integrating flashcards with other teaching strategies to maximize their impact in ELT classrooms.

Keywords: *English Language Teaching; Flashcards; Primary School; Student Engagement; Vocabulary Acquisition*

INTRODUCTION

English Language Teaching (ELT) has significantly developed alongside learning methods and media innovations. Visual aids are essential in language teaching as they enhance learning and support learners in acquiring and retaining new language skills. Tools like images, diagrams, and charts simplify complex concepts by presenting information in a visually engaging and accessible manner (Dang Thi Kim Chung, 2023). One of the long-established tools in ELT is flashcards, widely recognized for their

effectiveness in facilitating vocabulary acquisition through visualization. With technological advancements, flashcards have evolved from physical to digital formats, offering more engaging designs and flexible accessibility in language learning. Numerous studies have explored the effectiveness of both physical and digital flashcards in ELT. Syamsiyah and Ma'rifatulloh (2023) found that flashcards significantly enhanced students' vocabulary acquisition in junior high school English learning.

The impact of flashcards on language learning can be analyzed through several key theoretical frameworks. Cognitive theory suggests that learning involves internal processes such as information processing and memory, where repetition through flashcards is crucial in transferring information from short-term to long-term memory (Mayer, 2014). From a behaviorist perspective, flashcards are reinforcement tools that strengthen stimulus-response associations, accelerating vocabulary acquisition through repeated practice (Skinner, 2014). Meanwhile, cognitive load theory highlights the importance of designing instructional materials that reduce learners' cognitive burden. Well-structured flashcards simplify information presentation, facilitating more effective information processing (Sweller, 1988). Furthermore, dual coding theory posits that humans process verbal and visual information through separate but interconnected channels, meaning that flashcards integrating text and images can enhance comprehension and retention (Clark & Paivio, 1991).

In practice, flashcards aid vocabulary acquisition and improve students' communication skills. Earlier research identified flashcards as the most effective tool for enhancing vocabulary learning in online ESL classes for intermediate-level students (Dineshika & Jayasinghe, 2024). Additionally, flashcards play a vital role in helping students acquire vocabulary, a fundamental component of language, and essential for effective communication (Saputri & Prasetyarini, 2024).

Flashcards, also called word cards, are instructional tools that present a word in the target language (L2) on one side. In contrast, the reverse side typically provides its meaning through a first language (L1) translation, an L2 synonym, or a formal definition (Webb, 2019). They are made by cutting a white piece of paper and sticking it to a card sheet, ensuring the student's words on the flashcards are clear and spelled correctly (Surapur, 2020). By giving flashcards, students can remember the vocabulary given by the teacher because it is accompanied by images or visuals so that students can understand and remember it more easily.

Researchers and educators have demonstrated that flashcards can help visual, auditory, and tactile learners by helping them decode and read words fluently. Language teachers have been using flashcards to teach and present material in the classroom for many years (Madya et al., 2018). Since flashcards are a learning media that take the form of visual cards that students enjoy and can be presented as games, they are thought to be a medium that makes vocabulary learning enjoyable and engaging. Flashcards are an alternative that can assist pupils in improving their vocabulary abilities, particularly their

listening and speaking skills (Sulaiman & Akidah, 2021). Flashcards can facilitate vocabulary instruction, making it more effective for teachers, particularly in English language learning (Atmaja & Sonia, 2020).

In addition, Gardner proposed that intelligence is not a single ability but consists of eight distinct types, each specialized in different areas. These include logical-mathematical, linguistic, musical, spatial, bodily-kinesthetic, intrapersonal, interpersonal, and naturalist intelligence (Gardner, 2006). There are various learner types in any class, and teachers should try to accommodate each learner type and learning style at some point during the session. Despite encouraging self-directed learning, flashcards are frequently underutilized because of their brightness, color, and adaptability, which appeal to various learning styles (Madya et al., 2018).

In recent years, the widespread accessibility of mobile devices among language learners worldwide has led to a growing interest in research on mobile-assisted language learning (MALL) (Xodabande et al., 2022). These tools offer enhanced functionality, such as multimedia integration, adaptive learning, and personalized study modes, which can improve vocabulary retention and engagement (Nakata, 2019). Digital flashcards often incorporate visual, auditory, and multimedia elements such as images, videos, and audio alongside text, designing a diverse learning experience that engages multiple senses and accommodates different learning needs (Longchin et al., 2024). Additionally, digital flashcards can be accessed across various devices, allowing learners to study anytime and anywhere, further supporting effective and flexible language learning (Management Association, 2019).

As computer technology advances rapidly, structured flashcard learning has become increasingly popular, as shown by the growing use of digital flashcards. Research indicates that digital flashcards could be more effective for learning than traditional paper-based flashcards due to their benefits (San, 2023). Digital flashcards can enhance social presence in online settings by facilitating collaborative and individual activities. As a result, it can be inferred that the larger the feeling of social engagement offered by the online flashcards platform, the more energy students will spend studying and the more pleasant the impression they will have (Marmon, 2018).

Additionally, Dual Coding Theory suggests that humans process information through two separate but related channels: non-verbal (visual) and verbal (linguistic) (Clark & Paivio, 1991). When information is provided in both text and graphics, the dual channels improve comprehension, retention, and recall. According to the hypothesis, learners form stronger cognitive connections when they identify a word with a similar visual, resulting in improved memory retention. However, the implications for language teaching highlight the importance of adopting a balanced approach that integrates both traditional and contemporary methods. By incorporating technology and real-world contexts into language instruction, students can develop a more practical and effective use of vocabulary (Fengyu, 2023).

While many studies have explored the use of flashcards in ELT, a comprehensive review that systematically examines their effectiveness and development is still needed. Therefore, this study aims to address the following questions: (1) In what ways do flashcards support vocabulary acquisition and help students retain and understand new words? (2) How has the integration of technology changed the use of flashcards in ELT, and what are the advantages and challenges of digital flashcards?

This study adopts a systematic review approach to address these questions, gathering and analyzing research findings from academic sources such as Google Scholar, Mendeley, and Taylor & Francis. The selected studies were chosen based on their relevance to the topic, the credibility of their sources, and their focus on English language learning.

RESEARCH METHOD

This study followed the *Preferred Reporting Items for Systematic Reviews and Meta-Analyses* (PRISMA) guidelines for its search strategy, as outlined by Page et al. (2021). The authors selected specific keywords based on the title topic of the systematic review. The keywords used in the search included "flashcards," "flashcards AND/OR English teaching," and "flashcards for ELT." The search was carried out across multiple academic journal databases, including Google Scholar, Mendeley, and Semantic Scholar. The study covered a specific period, i.e., articles published between 2020 and 2024 that met the inclusion criteria.

The initial search was carried out by two reviewers (C.K. and N.A.), who used the authors' keyword list. The selection technique used to assess the relevance of the articles identified in the preliminary search to the study: a) Reading the titles: If the titles looked to be relevant, the citations were entered in specialized software (Mendeley Reference Manager), followed by a search for duplicates using Mendeley capabilities. Mendeley tools to detect and eliminate duplicates, ensuring only a single copy remained; b) reviewing the abstract: if the abstract lacked sufficient information based on the inclusion criteria, the paper was excluded from the study; c) examining the full text of the article: analyzing and reviewing the selected papers to identify which ones should be included in the systematic review. Studies that fail to meet the exclusion criteria will be removed.

This research review examined recent empirical studies with inclusion criteria as follows: 1) Articles listed in Google Scholar, Mendeley, and Semantic Scholar, 2) Articles published in the last 5 years, in 2020 - 2024, 3) Articles with a school student population, 4) Articles using English, 5) Original articles that are accessible in full text.

Meanwhile, the criteria for exclusion are as follows: 1) Studies involving populations other than school students (for example, university students, employees, or non-formal course participants), 2) Articles that used a language other than English, 3) Articles that were only available in abstract form or could not be accessed in full text, 3) Research

that does not address the Flashcard variable in English Teaching, 4) Articles that are reviews or meta-analyses.

RESULTS AND DISCUSSION

Results

This systematic review follows the PRISMA guidelines (*Preferred Reporting Items for Systematic Reviews and Meta-Analyses*) to maintain a clear, thorough, and reliable selection process. The initial search identified many articles from multiple databases, focusing on studies published within the last five years (2020–2024). After removing duplicates and reviewing titles and abstracts according to established inclusion and exclusion criteria, a final set of relevant studies was selected for full-text analysis. The study selection process is systematically illustrated in the PRISMA flowchart below.

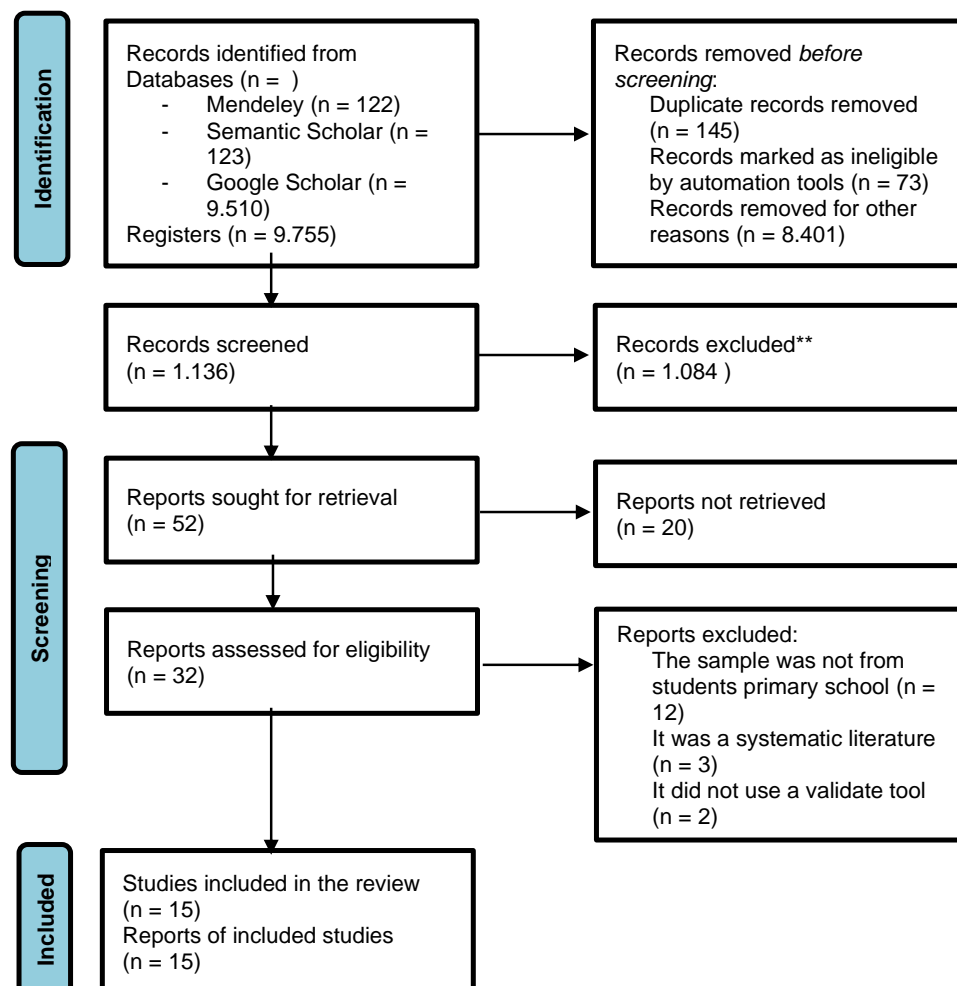


Figure 1 PRISMA Flowchart of the selection process

The studies included in this review offer valuable perspectives on using flashcards in English language teaching (ELT), especially for primary school students. They examine

different aspects, such as how flashcards support vocabulary learning, boost student engagement, and compare the effectiveness of digital and physical formats. Additionally, they highlight various teaching strategies that enhance the use of flashcards in the classroom. The table below summarizes key findings and research methods from previous studies.

Table 1 Summary and Characteristics of the Final Selected Studies

No.	Author(s) / Country	Main Characteristics	Variable	Study Design	Measure	Findings
1	Asrindah Nasution & Rani Rahim (Indonesia)	30 fourth-grade students	Flashcards in vocabulary learning	R&D (4-D Model)	Expert validation & vocabulary tests	Flashcards are feasible and effective in improving students' vocabulary
2	Muhammad Ridho Adzani & Rahmad Salahuddin (Indonesia)	2nd-grade students at SDI Nurul Ulum	Flashcard Sentences for literacy improvement	Classroom Action Research (3 cycles)	Literacy tests & observations	Literacy scores improved from 60.66 (pre-test) to 81.56 (final test)
3	S. Thoriqul Huda & Devi Dwi Kurniawan (Indonesia)	22 first-grade students	Flashcards for English concrete noun mastery	Classroom Action Research	Vocabulary tests & observations	Students' vocabulary scores improved from 49.21 (cycle 1) to 64.21 (cycle 2)
4	Nada Ayu Saputri & Aryati Prasetyarini (Indonesia & Malaysia)	8 tutoring students in Malaysia and 41 elementary students in Indonesia	Flashcards in EFL classrooms	Mixed-methods	Questionnaires & interviews	Flashcards enhance vocabulary acquisition and engagement in both

No.	Author(s) / Country	Main Characteristics	Variable	Study Design	Measure	Findings
						cultural contexts.
5	Novi Nuryani & Odo Fadloeli (Indonesia)	Young learners in grade 2	Flashcard utilization in English teaching	Qualitative descriptive	Observation & interview	Flashcards improve student engagement and comprehension
6	Endang Sri Andayani (Indonesia)	30 third-grade students	Flashcard learning method and writing skills	Pre-experimental	Pre-test & post-test	Flashcards significantly enhance students' English writing skills
7	Farrah Aufa Khasani Putri et al. (Indonesia)	Fourth-grade students	The effect of flashcards on vocabulary acquisition	Experimental	Vocabulary tests (pre-test & post-test)	Vocabulary scores increased from 52.2 to 77.6 after using flashcards
8	Renita Donasari et al. (Indonesia)	20 second-grade students	Student responses to flashcard games & visual worksheets	Mixed methods	Questionnaires, observation & interviews	Flashcard games & visual worksheets boost motivation and participation
9	Rani Santika et al. (Indonesia)	Primary school students	Flashcards & educational posters in English learning	Classroom action research	Observation & student feedback	Flashcards are effective in improving

No.	Author(s) / Country	Main Characteristics	Variable	Study Design	Measure	Findings
						English proficiency
10	Livia Feranty et al. (Indonesia)	28 fifth-grade students	The role of flashcards in vocabulary mastery	Classroom action research	Pre-test & post-test	Vocabulary scores increased from 53.2 to 85.7
11	Kholilah Yuniar Nasution et al. (Indonesia)	56 fifth & sixth-grade students	Digital flashcards for English communication	Classroom action research	Surveys & observation	Digital flashcards increased learning interest by 10.25% and improved speaking skills.
12	I Gusti Ayu Winda Yuliantari et al. (Indonesia)	Fifth-grade students	Flashcards in Google Classroom for vocabulary learning	Case study	Student interviews & observation	Online flashcards enhance vocabulary retention and engagement
13	İlknur Çaparlar & Eyup Yünkül (Turkey)	34 fifth-grade students	Flashcards through Quizlet for vocabulary learning	Quasi-experimental	Pre-test & post-test	Quizlet-based flashcards significantly improve vocabulary retention
14	Shivona Mathura & Free-Queen B. Zulu (South Africa)	31 first-grade ESL students	Flashcards in creative writing	Action research	Writing assignments & teacher assessment	Flashcards improve students' creative writing skills

No.	Author(s) / Country	Main Characteristics	Variable	Study Design	Measure	Findings
15	Ade Winda Rahmawati & Katharina Rustipa (Indonesia)	First-grade students	Flashcards for motivation in English learning	Observational study	Teacher observation & interviews	Flashcards significantly boost student motivation

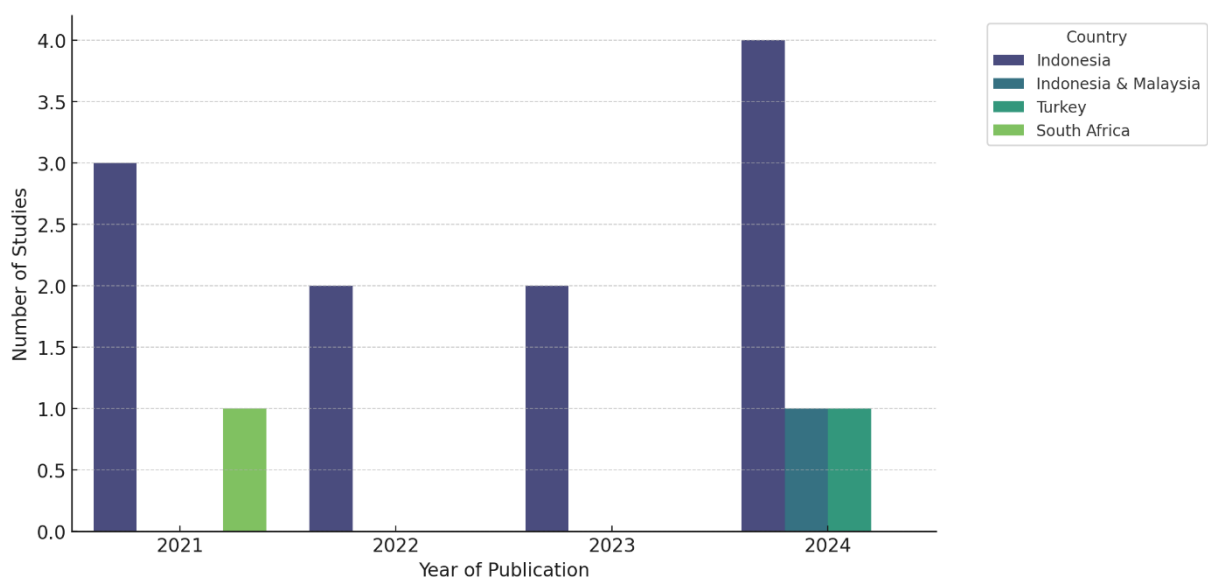


Figure 2 Distribution of Selected Studies by Year and Country

The graph shows how research on flashcards in English Language Teaching (ELT) has grown between 2020 and 2024. Over the years, there has been a steady increase in studies, with significant spikes in 2021 and 2024. This suggests that flashcards remain a relevant tool for language learning, especially in vocabulary acquisition and student engagement. The surge in research during these years may also reflect the rising interest in digital flashcards and their role in modern education.

Indonesia stands out as the country with the most research on flashcard-based learning. This highlights the country's strong emphasis on teaching vocabulary, particularly at the primary and secondary school levels. The widespread use of flashcards in Indonesian classrooms may be driven by efforts to improve language proficiency and make learning more engaging. Meanwhile, Malaysia has shown a growing interest in this area, with an increase in studies in 2024, indicating a rising awareness of flashcards' benefits in ELT.

Beyond Southeast Asia, Turkey and South Africa have also contributed to flashcard research, though to a lesser extent. Their involvement highlights a broader global interest in flashcards as a language-learning tool. Additionally, research from 2023 and

2024 suggests a shift toward digital flashcards, with platforms like Quizlet and Google Classroom gaining attention. This reflects the growing role of technology in education, particularly in vocabulary learning, as more teachers and students turn to mobile-assisted language learning (MALL).

In general, the graph highlights Indonesia as a leading contributor to flashcard research, while other countries are gradually increasing their focus on this area. The continued rise in studies, especially in 2021 and 2024, shows that flashcards remain a valuable teaching tool. As technology becomes more integrated into education, digital flashcards are gaining popularity, demonstrating how traditional teaching methods are evolving to meet modern learning needs.

Discussion

Based on the results of the study, the efficacy of flashcards in vocabulary acquisition and engagement has led to extensive research on their usage in English Language Teaching (ELT). To achieve objective learning, learning goes well and requires appropriate learning media in the anticipated learning process. The selection of appropriate media will foster significant learning outcomes for the learners, considering the complicated and distinctive learning process (Maulana et al., 2023). In this context, flashcards are one of the learning media that have long been used in language teaching, especially in improving vocabulary acquisition and student engagement in the learning process.

This systematic review examines the use of flashcards in ELT, specifically with primary school pupils, by combining the results of multiple studies. The findings show that flashcards effectively improve student motivation, classroom engagement, and vocabulary retention. Furthermore, the incorporation of technology into flashcard-based instruction has brought with it both new possibilities and difficulties.

Vocabulary serves as the foundation for learning a foreign language. It consists of the words individuals must understand to communicate effectively, particularly for young learners (Ariyanto et al., 2024). Vocabulary plays a crucial role in language proficiency. Students with a broad vocabulary tend to perform well in receptive skills, such as reading and listening, and productive skills, including speaking and writing (Khasyi et al., 2024). The effectiveness of flashcards in enhancing students' vocabulary retention has been demonstrated by research by A. Nasution and Rahim (2022), which shows that fourth-grade students' vocabulary acquisition was much enhanced by flashcards when they used the 4-D Model technique. Similar findings were made by Adzani and Salahuddin (2019), who conducted classroom action research with second-grade kids and discovered that flashcard-based interventions raised reading scores from 60.66 to 81.56. Furthermore, flashcards offer students an efficient and quick method to increase their vocabulary (Rahmani et al., 2022).

Additionally, Thoriq & Dwi Kurniawan (2021) found that using flashcards significantly improved vocabulary mastery among first-grade students, with their scores increasing

from 49.21 to 64.21 over two research cycles. Their findings support Sweller's Cognitive Load Theory, which suggests that well-designed flashcards help reduce cognitive strain, making learning more effective (Sweller, 1988). Similarly, research by Saputri and Prasetyarini (2024), conducted in Indonesia and Malaysia, reinforced that flashcards benefit vocabulary acquisition, demonstrating their effectiveness across different cultural settings in EFL classrooms. However, flashcards are effective for vocabulary acquisition because they accommodate various learning styles. Moreover, this teaching strategy can help improve the learning needs of different students, such as visual, audio, and kinesthetic children (Mathura & Zulu, 2021).

Flashcards are not just tools for vocabulary memorization; they also help boost student engagement and motivation. Internal and external motivation are vital in enhancing learning outcomes (Agustini et al., 2023). Research by Nuryani and Fadloeli (2021) revealed that second-grade students demonstrated better focus and comprehension when flashcards were integrated into their English lessons. Similarly, Donasari et al. (2023) found that pairing flashcards with visual worksheets increased student enthusiasm and active participation in the learning process. These results reinforce the idea that interactive learning tools like flashcards can create a more engaging and motivating classroom environment (Madya et al., 2018).

Further, Putri et al. (2024) conducted a pre-experimental study and found that students' vocabulary scores increased from 52.2 to 77.6 after using flashcards. These results reinforce that interactive learning tools help create a more engaging and motivating classroom environment. However, while flashcards can boost student motivation, their effectiveness depends on contextual integration with broader learning activities (Santika et al., 2023). Learners may initially be excited to use flashcards, but their enthusiasm could decrease if the activity becomes repetitive. Teachers should integrate gamification and group challenges to keep students engaged, ensuring that learning remains dynamic and meaningful.

The integration of digital tools, such as language learning applications and online resources, has become crucial in meeting the varied needs of learners. One significant development in education is the rise of language learning apps, which offer interactive platforms that enable teachers to design engaging and personalized learning experiences (Khasyi et al., 2024). As educational technology continues to evolve, the transition from traditional to digital flashcards has reshaped vocabulary instruction. K. Y. Nasution et al. (2024) examined the influence of digital flashcards on English communication skills, revealing a 10.25% increase in student interest, contributing to improved speaking abilities. Likewise, Yuliantari et al. (2021) investigated the use of flashcards in Google Classroom, highlighting their effectiveness in boosting vocabulary retention and student engagement.

In earlier research, Çaparlar & Yünkül (2024) looked at how Quizlet-based flashcards affected fifth-grade pupils' vocabulary retention and discovered significant gains. Their

results align with Dual Coding Theory (Clark & Paivio, 1991), highlighting how integrating verbal and visual information improves memory recall and comprehension. While digital flashcards offer advantages like spaced repetition and interactive quizzes, potential drawbacks should also be considered. Furthermore, technological obstacles like restricted device availability and unstable internet connections can disrupt the consistent implementation of digital flashcards in certain educational environments (Morady Moghaddam et al., 2025).

Moreover, while flashcards provide a solid foundation for vocabulary learning, they should not be used in isolation. Combining them with communicative tasks, creative exercises, and interactive learning techniques will maximize their impact and ensure a more holistic language learning experience. Ultimately, the success of flashcards in ELT depends on how effectively they are incorporated into a well-rounded instructional design that prioritizes engagement and comprehension.

CONCLUSION

The findings show that flashcards continue to be a valuable tool in English language learning, especially for building vocabulary. By presenting words in a visually engaging way, flashcards help students better understand and remember new vocabulary. With the advancement of technology, traditional paper-based flashcards have gradually shifted to digital formats, making them more accessible and adaptable to different learning settings. Digital flashcards, with their interactive features, offer a more flexible and engaging way to support vocabulary learning.

Beyond vocabulary acquisition, flashcards also play a crucial role in boosting student engagement and motivation. Their interactive nature, often enhanced through gamification, creates an enjoyable learning experience that encourages students to participate more actively in class. Research has shown that using flashcards can significantly increase students' enthusiasm and classroom involvement, further proving their effectiveness as a teaching tool in English Language Teaching (ELT).

Additionally, the integration of technology has further improved the functionality and accessibility of flashcards in ELT. The introduction of multimedia elements and adaptive learning modes in digital flashcards has made learning more engaging and flexible. However, some challenges, such as unequal access to technology and the risk of over-reliance on digital tools, need to be considered. To ensure maximum effectiveness, further research is needed to examine the long-term impact of digital flashcards and how they can be integrated with other teaching strategies in English language education.

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