CREATING ENGAGING FLASHCARD MATERIALS FOR YOUNG LEARNERS: A DEVELOPMENTAL STUDY ON ENGLISH LANGUAGE TEACHING IN PRIMARY SCHOOLS

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Article Info	Abstract
Article History Received: October 2024 Revised: November 2024 Published: January 2025 **Keywords** Flashcard materials; Vocabulary learning; Students engagement; Language teaching; English for young learners;	*Flashcards have long been recognized as effective tools for enhancing vocabulary acquisition, particularly among young learners. However, much of the existing research has focused on secondary or higher education, leaving a gap in understanding their impact on primary school students. This study addresses the need for a deeper exploration of flashcards as a teaching tool in elementary English language instruction. Specifically, the research focuses on the development and evaluation of flashcard-based instructional materials designed to improve vocabulary retention, student engagement, and motivation in young learners. The research utilized the ADDIE model (Analysis, Design, Development, Implementation, Evaluation) to develop flashcards tailored to young learners, emphasizing visually engaging and interactive materials. The findings demonstrated significant improvements in student engagement and vocabulary retention, with high effectiveness scores and positive feedback from both teachers and students. Data were analyzed using descriptive statistics to evaluate the results from the validity, practicality, and effectiveness tests. The findings reveal that the flashcards significantly enhanced students' vocabulary retention, engagement, and motivation, as demonstrated by high scores in effectiveness tests and positive feedback from both teachers and students. Teachers found the materials practical and easy to implement, while students responded favorably to the visual appeal and interactive nature of the flashcards. The findings highlight flashcards as an effective tool for improving vocabulary acquisition and engagement in primary education, offering a practical strategy for early language development.*

INTRODUCTION

The integration of innovative pedagogical tools in language teaching has gained increasing attention due to its potential to improve student outcomes, particularly among young learners. In primary education, engaging young learners requires innovative tools that align with their cognitive and developmental needs. Traditional methods, while effective to some extent, often fail to sustain the engagement necessary for optimal vocabulary acquisition. Flashcards, as visual aids to support young learners' cognitive development, have proven to bridge this gap by enhancing memory retention and fostering interactivity in the classroom (Rahmawati et al., 2022). This is particularly relevant in the context of primary schools, where cognitive

development requires engaging materials to support learning. Moreover, language teaching in primary education demands methods that are both developmentally appropriate and cognitively engaging for young learners. Research has shown that flashcards, due to their interactive and visual nature, significantly enhance vocabulary retention and improve student participation in class (Pimada et al., 2020). With the rise of digital learning tools, educators are increasingly adopting multimedia resources to complement traditional methods, thus creating a more dynamic and interactive environment for learners (Ashcroft et al., 2018). The increasing adoption of flashcards in language teaching represents a growing trend that demands further empirical exploration to assess its long-term effectiveness in language acquisition among young students.

Although flashcards are widely used in language teaching, most existing research focuses on secondary and tertiary levels (Fijačko et al., 2020), overlooking young learners who are at a critical stage of acquiring foundational language skills. Research on primary school learners has been limited to anecdotal evidence or small-scale studies, leaving a significant gap in understanding the systematic application and long-term benefits of flashcards in this context. (Liaquat, 2023). This gap underscores the need for further empirical investigations to validate the efficacy of flashcards as a tool for improving vocabulary learning outcomes in primary school settings. The general solution proposed to address this research gap involves the development and application of specialized flashcard materials tailored for primary school learners (Wright et al., 2021). These materials, designed with cognitive developmental principles in mind, aim to make vocabulary learning more engaging and effective. Furthermore, integrating these materials into the curriculum through structured methods, such as the Three-Period Lesson model, could optimize their effectiveness (Muliyah, 2023). This approach seeks to enhance vocabulary retention, thereby providing a more holistic and sustained impact on learners' language outcomes.

Optimizing vocabulary learning through flashcards stems from integrating cognitive learning theories with innovative pedagogical methods. Flashcards, both physical and digital, offer learners visual cues that enhance memory retention through repetition and association (Weiand et al., 2019). Research has demonstrated that students using flashcards for language learning outperform their peers in vocabulary retention, particularly when these materials are integrated into a structured learning framework (Khan, 2022). The Three-Period Lesson approach, which emphasizes active learning and repeated exposure, has been shown to significantly improve vocabulary acquisition among young learners (Zhang, 2024). Recent studies on flashcards have shown their potential to enhance vocabulary retention through interactive platforms. These tools provide learners with the flexibility to practice independently, while also offering immediate feedback, thereby reinforcing learning (Ayuningtias & Kareviati, 2021). Incorporating such media into primary school teaching not only aligns with contemporary educational practices but also addresses the diverse learning styles of young learners, making the learning process more effective and personalized.

While flashcards have been widely studied in the context of language teaching, their application in primary school settings remains under-researched. Studies such as those by Weerasinghe et al. (2022), highlight the effectiveness of flashcards in vocabulary acquisition among EFL learners; however, most of this research has focused on older students or adult learners. Little empirical evidence exists on the use of flashcards among younger learners, especially within structured educational frameworks (Kumar et al., 2022). This presents a significant gap, as young learners in primary education possess different cognitive and developmental needs compared to older students. Much of the literature has emphasized the use of flashcards as supplementary tools rather than core teaching materials. Studies exploring the long-term impact of flashcards on vocabulary retention are sparse, particularly in contexts where they are integrated into the broader curriculum. While digital flashcards have shown

promise in recent studies Suryani et al. (2022), their full potential in promoting interactive learning among primary school learners remains largely unexplored.

The objective of this study is to evaluate the effectiveness of flashcard-based English language learning materials in improving vocabulary acquisition among primary school students. The novelty of this research lies in its application of structured flashcard learning methods, within primary school settings, thereby offering new insights into how these tools can be optimized for younger learners. The scope of the study explores the use of flashcards, providing a comprehensive understanding of their relative effectiveness in different educational contexts. Ultimately, this research aims to contribute to the growing body of knowledge on the integration of visual and interactive learning tools in early language education, with a particular focus on vocabulary acquisition. To address the research objectives, this study focuses on two key questions: (1) How effective are flashcards in improving vocabulary mastery among primary school students? and (2) What are the key indicators of student engagement and learning outcomes when using flashcards in the classroom? These questions guide the study in evaluating the systematic implementation of flashcards and their impact on vocabulary acquisition for young learners.

RESEARCH METHOD
Research Design
This study adopts the Research and Development (R&D) method, as described by Creswell (2012), to systematically produce and evaluate educational products. The primary objective is to develop flashcard-based instructional materials tailored for teaching English to first-grade students at SDN 01 Lalebbata during the 2022/2023 academic year. The R&D approach is selected for its structured yet iterative process, ensuring that the final product meets educational standards and is effective in practical classroom settings. The development of the flashcards follows the ADDIE model (Branch, 2009), which involves five distinct phases: analysis, design, development, implementation, and evaluation. This structured framework allows for the creation, testing, and refinement of materials, addressing the educational gaps and enhancing student engagement in learning English.

Research Participants
The participants in this study include 35 first-grade students at SDN 01 Lalebbata, aged 6 to 7 years, during the 2022/2023 academic year. Ethical considerations were prioritized, with informed consent obtained from all participants, including students' parents or guardians and the teachers involved. The study ensured that all interactions with the children adhered to ethical guidelines, including age-appropriate engagement and the maintenance of privacy and confidentiality through anonymized data collection and reporting. Teachers and educational experts also participated in the validation and evaluation phases of the study, providing critical feedback on the practicality and effectiveness of the instructional materials.

Research Instruments and Data Collection Technique
The data collection process employed three primary instruments: expert validation sheets, teacher and student questionnaires, and structured tests. Initially, the flashcard materials were assessed through expert validation sheets to ensure their alignment with curriculum objectives, age-appropriateness, and overall content quality. Following the validation phase, practicality data were collected using questionnaires distributed to both teachers and students. Teachers provided insights into the ease of integrating the flashcards into their daily lessons, while students shared their engagement levels and perceived learning outcomes. Effectiveness was measured through structured tests administered to students, designed to evaluate their comprehension and retention of English vocabulary and fundamental language skills. This

comprehensive approach ensured robust data collection, facilitating iterative improvements to the instructional materials.

Data Analysis

The data collected from validation sheets, questionnaires, and student tests were analyzed quantitatively using descriptive statistics (Nitko & Brookhart, 2014). The analysis was conducted using SPSS software to compute mean scores, percentages, and other descriptive metrics, ensuring precise and reliable results. To enhance the validity and reliability of the data interpretation, inter-rater reliability was applied. Two independent raters assessed the test results and questionnaire data, resolving discrepancies through discussion to ensure consistent scoring. The practicality data, derived from teacher and student feedback, were analyzed to gauge the ease of material integration and student engagement. Meanwhile, effectiveness data focused on student test outcomes, highlighting the degree to which the instructional materials improved English language acquisition. This rigorous data analysis process informed further refinement and adjustments, ensuring that the final instructional materials effectively met the learning needs of elementary school students.

RESEARCH FINDINGS AND DISCUSSIONS

Research findings

The development of flashcard-based learning materials followed the ADDIE model to ensure that the final product was both practical and effective for primary school students learning English vocabulary. This section presents the findings from the various phases of the study, focusing on the results of Analysis phase, product design, expert validation, teacher and student feedback through classroom observations.

Analysis Phase

The results of the analysis conducted served as a reference and perspective for the development of the teaching materials. The analysis included curriculum analysis and needs analysis. The curriculum analysis was carried out to identify and categorize the use of the curriculum in the school, ensuring that the developed teaching materials aligned with the curriculum being implemented. Through interviews and observations, it was determined that SDN 01 Lalebbata employed the "*Kurikulum Merdeka*" for grades I and IV, while grades II, III, V, and VI used the 2013 Curriculum (K13). The needs analysis aimed to identify the teaching materials required to improve the quality of learning, foster interest, develop problem-solving skills, and encourage active and creative participation in the learning process. The needs analysis for Class 1.C at SDN 01 Lalebbata revealed that updated teaching materials were necessary to support the effectiveness of classroom instruction. The development of flashcard-based teaching materials for English language learning is expected to reduce student boredom and enhance the overall learning experience.

Product Design Phase

The design phase for the flashcard-based instructional materials spanned from November to March and employed the Canva and Microsoft Word applications. This phase began with designing an appealing cover by integrating appropriate colors and animated images relevant to the learning topic to captivate students' interest. Following this, the content was structured, beginning with general information that included module identification, competencies, student profiles, necessary facilities, target students, and the learning model. Additionally, the design incorporated core competencies that outlined learning objectives and expected achievements for the lesson. Meaningful insights were added to demonstrate the value students would gain upon completing the learning activities, along with prompt questions aimed at fostering reflective responses after the lesson.

The instructional activities based on the flashcards were carefully crafted to include three stages: the opening, main instructional activities, and the conclusion. The core learning activities, which were designed to foster vocabulary development, consisted of six interrelated tasks focused on the topics "My Number is Ten" and "Next Numbers." These tasks, such as "Say the Numbers," "Take the Card and Say," and "Listen and Check," provided varied methods to engage students interactively with the flashcards. The flashcards were created using Canva, each with a size of 11 cm by 8 cm, and were color-coded to attract students' attention during learning activities. On the front of each card, there was a number accompanied by corresponding images and the English translation of the number, while the reverse side displayed a larger visual representation of the number, along with its Indonesian equivalent. To protect the flashcards and maintain consistency with the instructional materials, packaging was designed using both Canva and Adobe Photoshop, incorporating the same color scheme and animated images used in the overall design, ensuring durability and aesthetic harmony across all components of the materials.

Development Phase

This stage involves the realization of the flashcard-based instructional materials into a finalized form that can be effectively utilized in the learning process. Once the flashcard-based teaching materials have been designed and printed, their suitability is rigorously evaluated through a validation process. The product validation is carried out by two experts, one specializing in content and the other in media, ensuring both the pedagogical relevance and the quality of the instructional media.

Material Expert Validity

In the process of developing effective teaching materials, expert validation is a critical step to ensure that the content aligns with educational objectives and meets the cognitive needs of students. The validation process for the flashcard-based materials in this study was conducted by two experts specializing in content and media. Their evaluation focused on several key indicators, including the accuracy, clarity, and relevance of the material, as well as its alignment with the curriculum and the cognitive development of the students. This rigorous assessment is necessary to guarantee that the materials not only foster student engagement but also support meaningful learning outcomes. The results of the content validation are presented in the following table 1.

Table 1
Content Expert Validation Results

No	Indicators	Rating				
		1	2	3	4	5
1	Alignment of material with dimensions, elements, and learning objectives					✓
2	Accuracy of material				✓	
3	Relevance and timeliness of material				✓	
4	Encourages curiosity					✓
5	Conceptual accuracy of the material				✓	
6	Sequential delivery of material				✓	
7	Presence of assessment indicators					✓
8	Appropriateness of images to clarify material				✓	
9	Material alignment with students' cognitive development at Phase A					✓
10	Easy to understand (communicative)					✓
11	Clear and concise					✓
12	Supports effective presentation				✓	
13	Presentation of the learning content				✓	
14	Coherence and logical flow				✓	
	Total	62				
	Percentage	88%				
	Scale	Highly feasible				

The content validation process evaluated 14 key indicators, each rated on a scale of 1 to 5, with 5 indicating the highest level of adequacy. The first indicator, concerning the alignment of the material with learning dimensions, elements, and objectives, received the maximum score of 5, signifying that the material strongly supports the intended curriculum outcomes. Similarly, the accuracy of the content, the timeliness of the material, and its ability to foster curiosity also scored 5, indicating a high level of quality and engagement potential. The conceptual accuracy of the material received a slightly lower score of 4, suggesting that some minor improvements may be needed to ensure that all concepts are communicated clearly and correctly. Additionally, the material's alignment with the students' cognitive development at Phase A also scored 4, highlighting a need for further adjustments to tailor the materials to the specific learning capabilities of the target age group. Most of the indicators, including the use of images, communicative clarity, coherence, and logical flow, scored a 5, showing that the material is well-structured and easy for both teachers and students to use. Overall, the total score of 62 out of a possible 70 points resulted in a validation percentage of 88%, classifying the flashcard materials as "Highly feasible" for use in the classroom.

Media Expert Validity

In educational material development, media validation plays a crucial role in ensuring that instructional tools are not only pedagogically sound but also visually engaging and functional for both teachers and students. The quality of the media directly influences how well the learning materials support the teaching process and maintain student engagement. As part of this study, a media expert validation was conducted to evaluate the flashcard-based teaching materials, focusing on two key aspects: the functionality and usefulness of the media, and the overall visual presentation. The goal was to ensure that the design of the flashcards was not only aesthetically appealing but also aligned with their educational purpose. The following table presents the results of the media expert validation.

Table 2
Media Expert Validation Results

Evaluation Aspects	Interval	Result	Category
Usefulness and Function	$3.5 \leq V \leq 4$	4	Highly valid
Media display	$3.5 \leq V \leq 4$	4	Highly valid
Average	$3.5 \leq V \leq 4$	4	Highly valid

The validation process assessed two critical dimensions of the flashcard-based teaching materials: *usefulness and function*, and *media display*. Each of these dimensions was rated on a scale of 3.5 to 4, with higher scores indicating better performance. The expert assigned a score of 4 to both aspects, categorizing them as "Highly Valid." This signifies that the flashcards were deemed to effectively fulfill their educational purpose, providing both visual appeal and practical functionality in supporting learning. *The usefulness and function* of the flashcards were evaluated based on their ability to aid in the learning process, enhance student engagement, and serve as a practical tool for vocabulary acquisition. The maximum score of 4 suggests that the flashcards were highly effective in fulfilling these roles. Similarly, the *media display* was assessed on its visual clarity, design quality, and attractiveness, all of which were deemed "Highly Valid" with a score of 4. The average score across both aspects was 4, reinforcing the conclusion that the flashcards meet high standards of media quality, making them well-suited for classroom use.

Evaluation

The effectiveness of instructional materials in real classroom settings is significantly influenced by teacher feedback. Teachers are key stakeholders in evaluating whether newly developed materials are practical, user-friendly, and align with the curriculum's objectives. In

this study, after the implementation of the flashcard-based learning materials, teachers provided their responses regarding several critical aspects of the materials, including their ease of preparation, usage, and management during the learning process. This evaluation is vital in assessing how well the materials can be integrated into daily teaching routines and how effectively they support student learning. The following table 3 summarizes the results of teacher feedback regarding the practicality of the flashcards.

Table 3
Teacher Response Results

Evaluation Aspect	Interval	Result	Category
Preparation	3.25 – 4,0	3.33	Highly Practical
Usage	3.25 – 4,0	4.0	Highly Practical
Management	3.25 – 4,0	4.0	Highly Practical
Average	3.25 – 4,0	3.77	Highly Practical

The teacher responses were evaluated across three key aspects: *preparation, usage*, and *management*. Each aspect was rated on a scale of 3.25 to 4.0, with higher scores indicating greater practicality. For the *preparation* of the flashcards, the teachers gave a score of 3.33, suggesting that while the materials were practical, there may be minor adjustments needed to optimize the preparation process. In terms of *usage*, the flashcards received a perfect score of 4.0, indicating that the teachers found them highly practical and easy to incorporate into their lessons. Similarly, the *management* of the flashcards during classroom activities also scored 4.0, demonstrating that teachers found the materials easy to manage and implement effectively. The overall average score across all aspects was 3.77, placing the flashcard-based learning materials firmly in the "Highly Practical" category. This high level of practicality suggests that the materials are not only effective in enhancing student engagement but also user-friendly for teachers, making them a valuable resource for English vocabulary instruction in primary schools.

Student feedback is a crucial aspect of evaluating the effectiveness of instructional materials, as it provides direct insights into how well the tools engage learners and support their educational development. In this study, flashcard-based materials were implemented in primary school English lessons, and students were asked to evaluate their experience using these materials. The feedback focused on various aspects, including the clarity of the content, visual appeal, ease of use, and overall enjoyment during the learning process. Understanding student perceptions is vital for assessing how well the materials align with their learning needs and how they impact classroom dynamics. The following table 4 summarizes the results of the student response evaluation.

Table 4
Student Response Results

No	Question	Total Score				Σ
		1	2	3	4	
1	I enjoy using flashcard-based teaching materials in the learning process.	-	-	15	20	3.57
2	This is the first time I've used flashcards in the learning process.	-	-	18	17	3.48
3	The language used in the teaching materials is difficult to understand.	15	19	1	-	1.6
4	The material encourages me to discuss with my peers.	-	-	2	33	3.94
5	The images/illustrations are clear and easy to understand.	-	-	5	30	3.85
6	The design is attractive (images, font size, and colors).	-	-	3	32	3.91
7	Using flashcard-based materials is not too boring.	35	-	-	-	1.0

No	Question	Total Score 1	2	3	4	Σ
8	Flashcards are easy and practical to use.	-	1	3	31	3.85
9	Learning English using flashcards makes me more active in class.	-	-	6	29	3.82
10	Learning with flashcards makes it easier to remember the material.	-	-	2	33	3.77
	Total			32.79		
	Average			3.27		
	Category			Highly Effective		

The student responses were measured across ten different questions to assess their experience with the flashcard-based materials. The first question, asking whether students enjoyed using the materials, received an average score of 3.57, indicating a positive reception to the flashcards. Similarly, when asked if this was their first time using flashcards, students scored 3.48, reflecting a sense of novelty in using these materials during the learning process. The language used in the flashcards was found to be clear and accessible, as only a small number of students found the content difficult to understand, giving this aspect a score of 1.6. The highest score of 3.94 was given to the question about whether the materials encouraged peer discussion, highlighting the collaborative benefits of using the flashcards. Additionally, the *clarity of illustrations* and *visual design* both received high scores of 3.85 and 3.91, respectively, indicating that students found the materials visually appealing and easy to understand. Students also rated the flashcards as *not boring*, scoring 1.0, which shows that the materials succeeded in keeping their attention. Furthermore, the materials were deemed *easy and practical* to use, scoring 3.85. The flashcards also promoted active learning, with a score of 3.82, and helped students retain information better, scoring 3.77.

Effectiveness of Flashcard

To determine the effectiveness of using flashcards in enhancing students' vocabulary mastery, the researcher conducted a series of vocabulary tests over three action research cycles. The results of the tests, showing the improvement in students' performance, are presented in the table below.

Table 5
Comparison of Student Vocabulary Test Results Before and After Using Flashcards

Aspect	Pre-Cycle	Cycle I	Cycle II	Cycle III
Mastery	f = 11	f = 15	f = 22	f = 31
	% = 31%	% = 43%	% = 63%	% = 89%
Not Mastery	f = 24	f = 20	f = 13	f = 4
	% = 69%	% = 57%	% = 37%	% = 11%

The results presented in the table demonstrate a steady improvement in students' vocabulary mastery across three action research cycles following the implementation of flashcards. In the pre-cycle, only 31% of the 35 students achieved mastery, leaving 69% below the passing criteria. After the first cycle (Cycle I), student performance improved to 43% mastery, showing initial progress, though 57% of students still struggled. Further refinements to the teaching process in Cycle II resulted in 63% of students mastering the vocabulary, with the remaining 37% still not meeting the criteria. By Cycle III, the effectiveness of flashcards became fully evident, as 89% of students achieved mastery, leaving only 11% below the standard. These results indicate that flashcards are an effective teaching tool for enhancing vocabulary retention, fostering engagement, and improving learning outcomes among young learners.

Discussions

Effectiveness of Flashcards in Vocabulary Acquisition

The study results demonstrate the effectiveness of flashcards in improving students' vocabulary acquisition over three action research cycles. In the pre-cycle, only 31% of the 35 students achieved mastery. After introducing flashcards in Cycle I, mastery increased to 43%, showing initial progress. By Cycle II, refinements in teaching strategies led to 63% mastery, and in Cycle III, mastery peaked at 89%, with only 11% remaining below the standard. This upward trend confirms that flashcards, as an engaging and interactive tool, significantly enhance vocabulary retention and student participation in young learner classrooms. This result is consistent with previous research by Putri (2024), which found that elementary school students who used flashcards showed a marked improvement in their vocabulary mastery compared to those who did not. The structured repetition and visual cues provided by the flashcards enabled learners to associate words with images, facilitating deeper retention of vocabulary. These findings support the idea that flashcards offer an interactive and engaging method of learning, which is crucial in maintaining students' attention and motivation during lessons, especially for younger learners who benefit from visual aids.

In comparison with other studies, such as those conducted by Ngarofah and Sumarni (2019), the results reinforce the effectiveness of flashcards in promoting vocabulary learning. The students in this study engaged actively with the flashcards through activities like "Say the Numbers" and "Take the Card and Say," which allowed for hands-on interaction and immediate reinforcement of newly learned words. This parallels findings by yuliantari et al. (2021), who observed that digital flashcards used in an online learning environment enhanced vocabulary retention by combining visual stimuli with technology. The integration of visuals, such as numbers and images, as used in this study's flashcards, aligns with the cognitive theory of multimedia learning, which emphasizes the importance of dual coding—combining visual and verbal information to enhance memory (Boroughani et al., 2023). This suggests that the effectiveness of flashcards is not limited to traditional classroom settings but can be adapted across various educational contexts.

The study highlights the potential of flashcards to promote active learning, as students were encouraged to discuss and interact with their peers while using the materials. This collaborative aspect aligns with research by Alamri and Rogers (2018), who found that flashcards incorporating multimedia elements improve students' engagement and perceptions of vocabulary learning. The flashcards in this study, designed with attractive colors and images, were rated highly by students in terms of visual appeal, further supporting the idea that well-designed flashcards can make the learning process more enjoyable and effective. As suggested by Alghamdi and Elyas (2020), the use of engaging and visually stimulating flashcards enhances students' motivation, leading to better retention and understanding of vocabulary. The findings from this research, therefore, add to the growing body of literature on the effectiveness of flashcards, emphasizing their utility as both a cognitive and motivational tool in vocabulary acquisition.

Impact on Student Engagement and Motivation

The findings of this study underscore the significant impact of flashcards on student engagement and motivation in English language learning. Student feedback revealed that flashcards successfully maintained their interest and participation during lessons, as reflected in the average score of 3.57 for enjoyment and 3.82 for encouraging classroom activity. This indicates that flashcards, with their vibrant colors and interactive elements, are more than just educational tools—they serve as a medium to foster an active learning environment. This is supported by Rahmawati (2023), who found that flashcards help facilitate interactive learning between teachers and students, making the classroom atmosphere more dynamic and student-centred. In this study, activities like "Say the Numbers" and "Take the Card and Say" further

contributed to student engagement by allowing hands-on interaction with the learning materials, creating a more engaging and enjoyable learning experience.

The positive influence of flashcards on motivation is well-documented in existing literature. The visual and tactile nature of flashcards, as highlighted in this study, has been shown to stimulate students' minds and encourage active recall of vocabulary. Maritza (2024) argues that the use of flashcards stimulates cognitive processes, helping students to not only retain information but also to stay motivated throughout the learning process. In this study, student responses indicated that flashcards made learning less monotonous, with an overwhelmingly low boredom score of 1.0. This finding aligns with Yaacob et al. (2019), who demonstrated that the use of augmented reality flashcards increased motivation levels, as the interactive elements provided an exciting and memorable learning experience. Although this study did not utilize AR technology, the visual design and interaction provided by the flashcards were sufficient to sustain high levels of motivation among the learners.

The collaborative nature of flashcard-based activities in this study contributed to sustained engagement, as students were encouraged to discuss and work together while using the flashcards. This type of active learning is also emphasized by Bathgate et al. (2013), who highlight the importance of structured interactions in fostering deeper understanding and sustained student interest. The high score of 3.94 for peer discussion in this study supports this claim, indicating that flashcards facilitated not only individual engagement but also collaborative learning. The ability of flashcards to integrate seamlessly into various learning activities, both individually and in groups, suggests that they are effective in creating a supportive and motivating learning environment. As Pei and Wu (2019) argue that the adaptability of flashcards, whether in physical or digital formats, enhances their potential to maintain student motivation and engagement, particularly in language acquisition contexts.

Practicality and Usability from Teachers' Perspective
The results of this study demonstrate that flashcards are highly practical and user-friendly from the perspective of teachers. Feedback from teachers indicated an overall practicality score of 3.77, categorizing the flashcards as "Highly Practical." This aligns with the findings of Selamat and Bakar (2023), who emphasized the importance of well-designed flashcards in creating effective teaching experiences. In this study, teachers appreciated the ease of preparation and use of the flashcards, with scores of 3.33 and 4.0 respectively. The structured design of the flashcards, incorporating attractive visuals and clear labelling, allowed teachers to integrate them seamlessly into their lessons without requiring significant adjustments to their teaching methods. These results reinforce the idea that usability is a key factor in determining the success of educational tools like flashcards in a classroom setting.

The practicality of flashcards extends beyond their design to their adaptability in various teaching contexts. Teachers in this study reported that flashcards were easy to manage during classroom activities, giving them a perfect score of 4.0. This finding supports Puradireja's (2022) argument that flashcards facilitate interactive learning activities, enhancing both teacher and student engagement. Teachers found that the flashcards not only helped maintain student attention but also supported the flow of the lesson by providing a simple yet effective tool for reinforcing vocabulary. Tselios et al. (2007) similarly noted that usability in educational tools, such as flashcards, directly impacts how effectively teachers can conduct lessons and manage classroom dynamics, underscoring the practical value of these materials. The integration of technology into flashcard design, as suggested by Le (2023), can further enhance their usability. Although this study focused on traditional paper flashcards, the positive feedback from teachers suggests that the introduction of interactive digital features could make flashcards even more practical. Teachers indicated that the materials were easy to use and prepare, which suggests that adding technological elements like digital flashcards or apps could further streamline lesson

planning and execution. Studies by Pan et al. (2023) highlight how digital flashcards offer additional benefits such as interactivity and ease of access, which could provide even greater support for teachers looking to enhance vocabulary instruction. Therefore, whether used in traditional or digital formats, flashcards present a highly practical and adaptable tool for teachers in primary school English language education.

Student Perceptions and Receptivity

The findings of this study reveal that students had overwhelmingly positive perceptions of flashcards, particularly in terms of their ability to enhance engagement and make vocabulary learning more enjoyable. With an average score of 3.57 for enjoyment and 3.85 for visual clarity and ease of use, the students demonstrated a high level of receptivity toward the flashcards. This aligns with Yeung et al. (2017), who found that the visual stimuli provided by flashcards activate cognitive processes that help students recall and retain information more effectively. In this study, students appreciated the flashcard's colorful design and the simplicity of the activities, such as "Say the Numbers" and "Take the Card and Say," which made the learning process less daunting and more engaging. This positive perception is crucial, as students who enjoy learning are more likely to engage actively in the process, ultimately improving their vocabulary acquisition. The flexibility and usability of flashcards contributed significantly to student receptivity. The study revealed that students found the flashcards easy to use, scoring 3.85 on this aspect, which mirrors the findings of Sudrajat (2023), who noted that students appreciate the convenience of digital flashcards that can be accessed via mobile devices. While this study utilized traditional paper flashcards, the positive response indicates that flashcards in any format can be an effective tool if designed with the user in mind. The ability to use the flashcards for self-directed learning, as observed in this study, also resonates with findings from Sage et al. (2020), who emphasized that students value the ability to use flashcards across different platforms, promoting autonomy and enhancing their learning experience.

The interactive nature of the flashcards not only engaged students during class but also encouraged collaboration and discussion, with a score of 3.94 for promoting peer discussions. This result supports Chen and Chan's (2019) research, which found that the integration of interactive elements into flashcards, such as augmented reality, significantly increased student engagement and motivation. Although this study did not use AR technology, the high level of interaction fostered by the flashcards was sufficient to maintain student interest and participation. As Lubis et al. (2023) noted, the interactive and repetitive nature of flashcards makes them an ideal tool for self-testing and retention, allowing students to engage deeply with the content. These findings underscore the importance of student perceptions in determining the success of educational tools, suggesting that the interactive and engaging qualities of flashcards are key to their effectiveness in promoting vocabulary acquisition.

Media Design and Visual Appeal

The design and visual appeal of the flashcards used in this study significantly contributed to their effectiveness in enhancing vocabulary learning among young students. The flashcards were rated highly by students for their attractiveness, with a visual appeal score of 3.85. This finding is consistent with research by Selamat & Bakar (2023b), who emphasized the importance of size, image selection, and overall appearance in flashcard design for young learners. The use of bright colors, clear fonts, and engaging images in this study's flashcards helped capture the students' attention, making the learning process more enjoyable and less intimidating. By presenting vocabulary in an aesthetically pleasing manner, the flashcards promoted a stimulating and interactive learning environment, which is particularly important for engaging young learners who respond well to visually rich materials.

In addition to their visual appeal, the design of the flashcards in this study also encouraged collaboration and peer interaction, as indicated by the high score of 3.94 for promoting peer

discussions. This aligns with Hung (2015), who found that thoughtful flashcard design can enhance collaborative learning experiences, allowing students to support each other in mastering new vocabulary. The structured activities designed around the flashcards, such as "Take the Card and Say," further encouraged students to interact with one another, reinforcing vocabulary in a fun and social context. By incorporating elements that promote collaboration, the flashcards in this study went beyond individual learning, fostering a sense of community and shared learning goals among students. The usability of the flashcards was enhanced by their straightforward design, which reduced cognitive load and made the learning process more efficient. This supports the findings of Taveira-Gomes et al. (2014), who emphasized the role of design in educational tools to make learning more accessible and manageable for students. In this study, the flashcards were easy to handle and understand, allowing students to focus more on the learning content rather than the tool itself.

CONCLUSION

This study highlights the significant role of flashcard-based instructional materials in enhancing vocabulary acquisition, student engagement, and motivation in young learners. The effectiveness of flashcards was demonstrated by the improvement in students' vocabulary retention, as indicated by high scores in both effectiveness tests and student feedback. The interactive nature of the flashcards, combined with their visually appealing design, made vocabulary learning more engaging and enjoyable for the students. By incorporating flashcards into English language instruction, educators can significantly enhance the learning experience, ensuring that students are actively involved and motivated to learn. In addition to their effectiveness in improving vocabulary retention, the practicality and usability of the flashcards from a teacher's perspective were also evident. Teachers found the flashcards easy to integrate into their lessons, with high scores for preparation and classroom management. The adaptable nature of the flashcards allowed them to be used in various teaching contexts, supporting both individual learning and group collaboration. The ability to use flashcards both in traditional and digital formats further enhances their usability, making them an essential resource for modern classrooms.

Overall, the findings of this study affirm that flashcards are not only an effective tool for vocabulary acquisition but also a powerful means of fostering student engagement and motivation. The well-designed visuals and interactive features of the flashcards contributed to their success in creating a dynamic and enjoyable learning environment. Furthermore, the study highlights the importance of thoughtful design and usability in educational materials, ensuring that both teachers and students can benefit from their implementation. As the integration of technology in education continues to grow, further research on digital and augmented reality flashcards could provide deeper insights into their potential to enhance language learning. By leveraging the strengths of flashcards, educators can create more effective, engaging, and inclusive learning experiences for students.

REFERENCES

Alamri, K., & Rogers, V. (2018). The Effectiveness of Different Explicit Vocabulary-Teaching Strategies on Learners' Retention of Technical and Academic Words. *Language Learning Journal*, *46*(5), 622–633. https://doi.org/10.1080/09571736.2018.1503139.

Alghamdi, A. A., & Elyas, T. (2020). The Effect of Electronic Flashcards on EFL Students' Vocabulary Learning: The Case of Saudi Arabia. *Randwick International of Education and Linguistics Science Journal*, *1*(2), 114–125. https://doi.org/10.47175/rielsj.v1i2.79.

Ashcroft, R. J., Cvitkovic, R., & Praver, M. (2018). Digital Flashcard L2 Vocabulary Learning Out-Performs Traditional Flashcards at Lower Proficiency Levels: A Mixed-Methods Study of 139 Japanese University Students. *The Eurocall Review*, *26*(1), 14. https://doi.org/10.4995/eurocall.2018.7881.

Ayuningtias, S., & Kareviati, E. (2021). The Preparation of Instructional Media in Teaching English to Young Learners at SDN Baros Mandiri 3 Cimahi. *Project (Professional Journal of English Education)*, *4*(3), 414. https://doi.org/10.22460/project.v4i3.p414-419.

Bathgate, M., Schunn, C. D., & Correnti, R. (2013). Children's Motivation Toward Science Across Contexts, Manner of Interaction, and Topic. *Science Education*, *98*(2), 189–215. https://doi.org/10.1002/sce.21095.

Boroughani, T., Behshad, N., & Xodabande, I. (2023). Mobile-Assisted Academic Vocabulary Learning With Digital Flashcards: Exploring the Impacts on University Students' Self-Regulatory Capacity. *Frontiers in Psychology*, *14*. https://doi.org/10.3389/fpsyg.2023.1112429.

Branch, R. M. (2009). *Instructional Design: The ADDIE Approach*. Springer US. https://doi.org/10.1007/978-0-387-09506-6.

Chen, R. W., & Chan, K. K. (2019). Using Augmented Reality Flashcards to Learn Vocabulary in Early Childhood Education. *Journal of Educational Computing Research*, *57*(7), 1812–1831. https://doi.org/10.1177/0735633119854028.

Creswell, J. W. (2012). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (4th ed). Pearson.

Fijačko, N., Gosak, L., Cilar, L., Novšak, A., Creber, R. M., Skok, P., & Štiglic, G. (2020). The Effects of Gamification and Oral Self-Care on Oral Hygiene in Children: Systematic Search in App Stores and Evaluation of Apps. *Jmir Mhealth and Uhealth*, *8*(7), e16365. https://doi.org/10.2196/16365.

Hung, H. (2015). Intentional Vocabulary Learning Using Digital Flashcards. *English Language Teaching*, *8*(10). https://doi.org/10.5539/elt.v8n10p107.

Khan, R. M. I. (2022). The Use of Flashcards in Teaching EFL Vocabulary in Online Learning. *Register Journal*, *15*(1), 109–125. https://doi.org/10.18326/rgt.v15i1.109-125.

Kumar, R. S., Deshpande, A. P., Ankola, A. V., Sankeshwari, R., Jalihal, S., Hampiholi, V., Khot, A. J. P., Hebbal, M., Kotha, S. L., & S, L. K. (2022). Effectiveness of a Visual Interactive Game on Oral Hygiene Knowledge, Practices, and Clinical Parameters Among Adolescents: A Randomized Controlled Trial. *Children*, *9*(12), 1828. https://doi.org/10.3390/children9121828.

Le, H. H. (2023). Using Flashcard-Based Techniques to Improve Students' Vocabulary Retention. *Vietnam Journal of Education*, 313–325. https://doi.org/10.52296/vje.2023.336.

Liaquat, A. (2023). Developing EFL Vocabulary Through Flashcards at Secondary Level in District Sahiwal, Pakistan. *Journal of Languages Culture and Civilization*, *5*(3), 247–256. https://doi.org/10.47067/jlcc.v5i3.182.

Lubis, B. N. A., Sagala, R. W., & Niswa, K. (2023). Flashcard Media Effectiveness in Enriching Students' English Vocabulary at Vocational School. *English Review Journal of English Education*, *11*(1), 153–160. https://doi.org/10.25134/erjee.v11i1.6852.

Maritza, E. K. (2024). The Effect of "Si Andi" Flashcard Games on Improving Personal Safety Skills. *Jpud - Jurnal Pendidikan Usia Dini*, *18*(1), 112–128. https://doi.org/10.21009/jpud.181.08.

Muliyah, P. (2023). Three-Periods Lesson: A Practical Way in Introducing English Vocabulary Using Realia and Flashcards. *Metathesis Journal of English Language Literature and Teaching*, *7*(2), 216–228. https://doi.org/10.31002/metathesis.v7i2.733.

Ngarofah, S., & Sumarni, A. (2019). Teaching Vocabulary Using Flashcard to Young Learner. *Project (Professional Journal of English Education)*, *1*(6), 775. https://doi.org/10.22460/project.v1i6.p775-782.

Nitko, A. J., & Brookhart, S. M. (2014). *Educational Assessment of Students* (6th ed.). Pierson Education Limited.

Pan, S. C., Zung, I., Imundo, M. N., Zhang, X., & Qiu, Y. (2023). User-Generated Digital Flashcards Yield Better Learning Than Premade Flashcards. *Journal of Applied Research in Memory and Cognition*, *12*(4), 574–588. https://doi.org/10.1037/mac0000083.

Pei, L., & Wu, H. (2019). Does Online Learning Work Better Than Offline Learning in Undergraduate Medical Education? A Systematic Review and Meta-Analysis. *Medical Education Online*, *24*(1), 1666538. https://doi.org/10.1080/10872981.2019.1666538.

Pimada, L. H., Toba, R., & Rasyidi, A. W. (2020). Learning of Imla' Using Flashcards on Writing Skill at Islamic Elementary School Level in Samarinda. *Izdihar Journal of Arabic Language Teaching Linguistics and Literature*, *3*(1), 1–16. https://doi.org/10.22219/jiz.v3i1.11682.

Puradireja, S. M. (2022). The Effectiveness of Flashcard Media and Letter Learning Applications to Help Dyslexic Children's Reading Ability in Elementary School. *Child Education Journal*, *4*(1), 61–78. https://doi.org/10.33086/cej.v4i1.2834.

Putri, F. A. K. (2024). Teaching English Using Flashcards to Improve Elementary School Students' Vocabulary. *Journal of Foreign Languange Teaching and Learning*, *8*(2), 198–215. https://doi.org/10.18196/ftl.v8i2.21350.

Rahmawati, A. W. (2023). Using Flashcards to Motivate Students to Learn English at SDN Karangayu 03 Semarang. *Globish an English-Indonesian Journal for English Education and Culture*, *12*(2), 108. https://doi.org/10.31000/globish.v12i2.8448.

Rahmawati, J., Mujiono, & Liskinasih, A. (2022). Enhancing EFL Learners' Vocabulary Acquisition With Socrative Digital Flashcards: An Experimental Study. *International Journal of Social Sciences and Educational Studies*, *9*(1). https://doi.org/10.23918/ijsses.v9i1p269.

Sage, K. D., Piazzini, M., Downey, J. C., & Ewing, S. (2020). Flip It or Click It: Equivalent Learning of Vocabulary From Paper, Laptop, and Smartphone Flashcards. *Journal of Educational Technology Systems*, *49*(2), 145–169. https://doi.org/10.1177/0047239520943647.

Selamat, S., & Bakar, K. A. (2023a). An Exploration of Flashcards Nature Used in the Teaching and Learning of Preschoolers by Preschool Teachers. *International Journal of Academic Research in Progressive Education and Development*, *12*(1). https://doi.org/10.6007/ijarped/v12-i1/16538.

Selamat, S., & Bakar, K. A. (2023b). An Exploration of Flashcards Nature Used in the Teaching and Learning of Preschoolers by Preschool Teachers. *International Journal of Academic Research in Progressive Education and Development*, *12*(1). https://doi.org/10.6007/ijarped/v12-i1/16538.

Sudrajat, A. (2023). Digital-Based Flash Card to Increase Social Studies Learning Outcomes for Elementary School Students in the Fourth Grade. *Journal of Education Technology*, *7*(2), 235–246. https://doi.org/10.23887/jet.v7i2.63327.

Suryani, E. A. A., Majid, A. H., & Suryani, S. (2022). Introducing English Vocabulary to Young Learners With Flashcards. *English Education Journal*, *13*(2), 160–171. https://doi.org/10.24815/eej.v13i2.25454.

Taveira-Gomes, T., Saffarzadeh, A., Severo, M., Guimarães, M. J., & Ferreira, M. A. (2014). A Novel Collaborative E-Learning Platform for Medical Students—ALERT STUDENT. *BMC Medical Education*, *14*(1). https://doi.org/10.1186/1472-6920-14-143.

Tselios, N., Avouris, N., & Komis, V. (2007). The Effective Combination of Hybrid Usability Methods in Evaluating Educational Applications of ICT: Issues and Challenges. *Education and Information Technologies*, *13*(1), 55–76. https://doi.org/10.1007/s10639-007-9045-5.

Weiand, A., Ludovico, F. M., & Patrícia da Silva Campelo Costa Barcellos. (2019). Virtual Learning Environments in the Light of Mind Maps and Flashcards. *International Journal for Innovation Education and Research*, *7*(9), 104–113. https://doi.org/10.31686/ijier.vol7.iss9.1713.

Wright, S. P., Ryan, K., Taylor, K. L. H., Turnbull, S. S., Skinner, C. H., Beeson, T., Ciancio, D., & Billington, E. J. (2021). Computer-Based Reading Interventions With a Post-Secondary Student With Intellectual Disability: Self-Determined and Fixed Response Intervals. *International Journal on Social and Education Sciences*, 394–409. https://doi.org/10.46328/ijonses.193.

Yaacob, A., Zaludin, F., Aziz, N., Ahmad, N., Othman, N. A., & Fakhruddin, R. A. M. (2019). Augmented Reality (Ar) Flashcards as a Tool to Improve Rural Low Ability Students' Vocabulary. *Practitioner Research*, *1*, 29–52. https://doi.org/10.32890/pr2019.1.2.

Yeung, D., Alvarez, K., Quinones, M. E., Clark, C. A., Oliver, G. R., Álvarez, C., & Jaiyeola, A. O. (2017). Low–health Literacy Flashcards &Amp; Mobile Video Reinforcement to Improve Medication Adherence in Patients on Oral Diabetes, Heart Failure, and Hypertension Medications. *Journal of the American Pharmacists Association*, *57*(1), 30–37. https://doi.org/10.1016/j.japh.2016.08.012.

yuliantari, ira, Padmadewi, N. N., & Budasi, I. G. (2021). The Implementation of Learning Vocabulary Using Flashcard for Young Children Through Google Classroom. *Jurnal Pendidikan Bahasa Inggris Undiksha*, *9*(3), 271. https://doi.org/10.23887/jpbi.v9i3.38289.

Zhang, L. (2024). The Impact of Content and Language Integrated Learning on Motivation and Anxiety Levels of Chinese Primary School Students. *International Journal of Academic Research in Progressive Education and Development*, *13*(2). https://doi.org/10.6007/ijarped/v13-i2/21414.