

EXPLORING MADRASAH IBTIDAIYAH STUDENTS' ENGLISH VOCABULARY LEARNING THROUGH DUOLINGO APPLICATION

Silvius Shoimah¹

Universitas Islam Zainul Hasan Genggong

Zainuddin²

Universitas Islam Zainul Hasan Genggong

Nina Agus Hariati³

Universitas Islam Zainul Hasan Genggong

Silviusshoimah468@gmail.com¹

Submit, 02-04-2026

Accepted, 23-07-2026

Publish, 26-07-2026

ABSTRACT

This study aimed to explore the implementation of the Duolingo application in supporting english vocabulary learning and to identify the specific learning activities facilitated by the platform. Using a qualitative descriptive research design, the study involved 26 fifth-grade students at MI Khilafiyah Syafi'iyah Zainul Hasan Genggong. Data were collected through classroom observations and semi-structured interviews with the teacher and students. The results reveal that Duolingo was successfully implemented through projector-based guided instruction, fostering a dynamic and enthusiastic classroom atmosphere. Six main types of vocabulary activities were identified: matching images, listening exercises, repetition, meaning recognition, vocabulary matching, and completing sentences. These activities utilized multimedia and gamification elements to enhance students' cognitive engagement and confidence. The study concludes that Duolingo serves as an effective pedagogical tool to overcome attention span limitations and strengthen long-term memory through sensory-based repetition. For practitioners, integrating such digital media collectively is recommended to facilitate social interaction and meaningful learning experiences.

Keywords: *Digital Learning, Duolingo, English Vocabulary, Madrasah Ibtidaiyah, Young Learners*

INTRODUCTION

For most learners, Vocabulary is one of the most important components in English learning, because it plays a major role and influences the four language skills of listening, speaking, reading, and writing (Langi, 2024). It implies that a lack of vocabulary hinders one's potential for efficient communication. Consequently, this illustrates the significance of words (Zainuddin & Wahab,

2023). No one can learn a language without first mastering vocabulary and emphasizing the importance of vocabulary in language learning (Rosyada-AS & Apoko, 2023). Vocabulary plays a central role in mastering English, encompassing knowledge and meaning of words. Understanding the definition of a word, its use in context, and its associations are important components of effective vocabulary mastery (Ayana et al., 2024). Students' vocabulary reveals the extent to which they have mastered other English language skills (Mutia et al., 2022). If learners can master vocabulary, they will understand reading texts, they can write, and they can speak in that language. Students who do not master sufficient vocabulary will fail to use the language both orally and in writing (Hamdani & Deviana, 2021).

Basic English has been taught since elementary school to prepare students for the changing times (Ndraha et al., 2023). English is still often considered a difficult subject for most students, especially at the elementary school level. A common difficulty encountered in the process of learning English in elementary school is vocabulary mastery (Ryan et al., 2024). Students often face several obstacles in understanding and memorizing these words due to various factors, including lack of exposure to the use of the local language, different language origins, and personal learning styles (Sakina & Astuti, 2024). To improve their academic abilities and study more effectively, learners need to build a substantial vocabulary. Additionally, they should gain expertise in the vocabulary suited to their grade level (Achmadi & Sofiana, 2024). In relation to this, teachers must first master English vocabulary when teaching children so that they understand all the functions, forms, meanings, and procedures for using vocabulary in everyday life (Kulsum et al., 2023).

On the other hand, teaching vocabulary to young students has its own difficulties because young students have their own characteristics, as stated (Syafrizal & Haerudin, 2018) who say that young students will feel comfortable learning when they have enthusiasm and energy that makes it easier for them to adapt, especially to the situation. Students' learning styles can also be influenced by many factors, including background, culture, genetics, and previous learning experiences. If teachers tailor their vocabulary teaching methods to the learning styles of elementary school students, they are sure to be more successful and interested in English (Andari, 2023). Therefore, teachers need to provide a sense of confidence and approval during the learning process to encourage students to progress. Finally, young students have a limited attention span. Due to this limited attention span, teachers need to be creative in designing a fully engaging learning process so that young students do not become bored and lose attention within ten minutes. Therefore, it is very important for teachers to be creative with young students (Sabgini & Wiraatmaja, 2023).

There are many ways to achieve learning in the world of education. One such alternative method or tool is to keep up with the latest developments by utilizing digital technology (Sakina & Astuti, 2024). In recent decades, learning English as a foreign language has undergone significant changes due to advances in digital technology. Advances in technology make it important to use when learning vocabulary, and it is undeniable that the use of applications affects learning outcomes (Puspitasari et al., 2022). Finding entertaining material that can inspire students to learn English can be made easier for teachers with the help of useful web resources. Meanwhile, teachers play an important role in introducing and guiding students in the use of technology (Nasrul & Fatimah, 2023). One of the most widely used digital applications among students is Duolingo.

Duolingo is very effective for hourly language tests that teachers can administer in class, especially in Indonesia (Harahap & Daulay, 2023). However, (Apoko et al., 2023) stated that Duolingo is difficult to use and cannot be accessed without an internet connection. Duolingo also contains advertisements that sometimes make the users uncomfortable, and premium features must be purchased if users want to get certain facilities or features. Students will be invited to practice regularly at varying times according to their choice, so naturalization will give them fluency and familiarity in learning the language. According to (Muhammad et al., 2024) Duolingo is the future of language learning and communication around the world. A program called Duolingo makes learning languages fun and simple, allowing users to play with the app instead of feeling like they are studying. Duolingo also offers several features aligned with gamification principles to facilitate English language learning for its users. These include rankings, levels, points, leaderboards, progress indicators, and rewards (Purwanto et al., 2022).

Many researchers have previously studied and tested the effectiveness of the Duolingo program in teaching English vocabulary. Several studies relevant to this research are those conducted by (Fitri et al., 2023). In this study, the researcher attempted to apply the Duolingo application as a way to see how it affects the vocabulary mastery of second-year students at SMPN 1 Koto Besar. The method used to explore this was a quasi-experimental design. The research population consisted of 97 second-year students at the school. There were 65 students in total, with 32 in the experimental class and 33 in the control class. A vocabulary test was used as a research tool. The researcher explained that the vocabulary mastery of students taught using the Duolingo app was better than those taught using conventional strategies.

In addition, as demonstrated by several features of the application, research conducted by (Suhendra et al., 2024) on fourth-grade students at SDN Purwamekar showed that they benefited from using Duolingo software by

improving their English vocabulary knowledge. The research approach used was pre-experimental, with a one-group pretest-posttest design and simple random sampling technique. This study involved a total of 30 students. The results showed that the average descriptive test score for elementary school students' English vocabulary knowledge before using the Duolingo application was 42.67. After two treatment sessions with the Duolingo application, the average score for elementary school students' English vocabulary knowledge increased to 80.33 from the descriptive test average. The results of the basic linear regression test showed that the use of the Duolingo application increased elementary school students' understanding of English vocabulary by 24.9%. It can be concluded that variable x, namely the use of the Duolingo application, affects variable y, namely the mastery of English vocabulary by fourth-grade elementary school students, thereby enabling children to master vocabulary. Other researchers (Indrasari et al., 2024, Anandra & Salmiah, 2024, Yuwono, 2022) explain that the Duolingo program works well for teaching vocabulary.

However, despite the increase in the number of studies, several research gaps remain. First, most previous studies used quantitative or experimental designs that focused on measuring learning outcomes, such as test scores and statistical improvements, rather than exploring the learning process itself. Second, most participants came from high schools, universities, or language course institutions, while research specifically exploring the implementation of Duolingo in Madrasah Ibtidaiyah environments is still limited. Third, there is still a lack of exploration into how young learners experience vocabulary learning activities in Islamic elementary school environments, which have different institutional characteristics and student prof (Pradini & Adnyayanti, 2022) iles compared to public schools. Based on these gaps, the issues raised in this study center on the limited understanding of how Duolingo is implemented to support English vocabulary among Madrasah Ibtidaiyah students and what types of vocabulary learning activities they engage in through the application. Although previous studies have confirmed its effectiveness, little is known about how the app functions pedagogically in Madrasah Ibtidaiyah classrooms, how students interact with its feature, and how vocabulary learning actually takes place in practice.

Based on initial observations conducted at MI Khilafiyah Syafi'iyah Zainul Hasan Genggong in Karangbong Pajajaran Subdistrict among fifth-grade students, involving 26 students, several problems were identified in the implementation of English vocabulary learning. Classroom observations showed that vocabulary teaching was mostly done through textbook-based explanations and translation techniques. Students were asked to memorize lists of words and repeat after the teacher, but many of them had difficulty remembering the words they had learned earlier during follow-up activities. When asked to mention

simple vocabulary related to everyday topics, some students hesitated or remained silent.

A brief informal interview with the English teacher also revealed that *“students often have difficulty remembering the meanings of words and pronouncing new vocabulary correctly”*. The teacher stated that although students initially showed enthusiasm, they tended to lose focus when learning activities relied solely on worksheets and explanations on the blackboard. In addition, the school has not optimally integrated digital learning media into vocabulary teaching, even though most students are familiar with smartphones in their daily lives.

Therefore, this study aims to explore the use of Duolingo in supporting English vocabulary learning among Madrasah Ibtidaiyah students and identify the types of vocabulary learning activities facilitated by the application. Instead of measuring effectiveness through statistical results, this study focuses on describing the implementation process, student engagement, and their learning experiences when using Duolingo in vocabulary teaching.

LITERATUR REVIEW

Vocabulary is a fundamental element of language that students need to excel in. Students aiming to gain proficiency in a language must focus on learning vocabulary (Pradini & Adnyayanti, 2022). According to (Sanjaya et al., 2022) Vocabulary is the main component of language proficiency that act as a support tool to master skills in English (reading, listening, writing, and speaking). By having a strong grasp of words, learners will be capable of articulating ideas, comprehending written material effectively, and recognizing the significance of the terms they hear. They will also be able to convey their thoughts, beliefs, and wishes clearly. This indicates that vocabulary plays a crucial role in effective communication (Andari, 2023). Understanding vocabulary is crucial for mastering English, so it should be introduced to children at a young age. Those being referred to as young learners are typically between the ages of 5 and 12 (Mokalu, 2022).

Vocabulary must be taught to young learners because during this phase, they undergo a "golden age" where they can easily absorb new information. At this time, their brain development allows them to easily understand and adapt to new experiences, including learning about language (Wen et al., 2024). Moreover (P. Nation, 2022) proposed ideas for teaching vocabulary to young learners. When teaching young learners, it is more effective for teachers to focus on vocabulary and language-centered instruction. This means that vocabulary instruction should include pronunciation, spelling, word meaning analysis, memorization, phrases and clauses, as well as correction. Technically, these ideas are embodied in

activities involving guessing unknown words from context. This activity determines word meaning based on context rather than its basic definition. The knowledge gained from this activity will last longer because of its connection to the natural world. Second, the study of word parts and mnemonic devices.

METHOD

This study employed a qualitative descriptive research design to explore the implementation of Duolingo in supporting English vocabulary learning among fifth-grade, involving 26 students at MI Khilafiyah Syafi'iyah Zainul Hasan Genggong in Karangbong, Pajarakan Subdistrict. Qualitative Research is appropriate for this study because it aims to understand and describe social phenomena in depth within their natural setting. According to (Creswell & Creswell, 2017) qualitative research is an approach used to explore and understand the meaning individuals or groups ascribe to a social or human problem. Similarly, (Moleong, 2017) states that qualitative research seeks to understand the phenomena experienced by research subject holistically and descriptively in the form of words within a natural context. In addition, (Sugiyono, 2018) explains that qualitative research is conducted in natural settings where the researcher acts as the key instrument. Therefore, this method is suitable for describing the learning process, student engagement, and classroom interaction when using Duolingo in vocabulary teaching.

In this study, Duolingo was implemented through classroom-based guided instruction using a projector, where the researcher facilitated the activities and students participated collectively. The data were collected through classroom observations and semi-structured interviews. Observations focused on how Duolingo was applied during vocabulary learning and on students' participation and engagement, supported by field notes to document classroom interactions. Semi-structured interviews were conducted with the English teacher and selected fifth-grade students to explore their experiences and perceptions of Duolingo-based vocabulary learning. The participants were fifth-grade, involving 26 students of MI Khilafiyah Syafi'iyah Zainul Hasan Genggong. This study aimed to describe the classroom implementation of Duolingo and identify the types of vocabulary learning activities facilitated through the application.

FINDING

Duolingo was implemented through guided classroom-based learning using a projector. According to (Viberg et al., 2020) this type of learning model is in line with the concept of Mobile-Assisted Language Learning (MALL), which does not always require the use of personal devices, but can be facilitated collectively in a classroom setting. The researcher displayed the application interface on the screen and guided the students step by step during the vocabulary

learning session. Students did not use their personal mobile phones, but instead observed the projector screen and participated collectively. The researcher controlled the flow of activities, selected vocabulary material appropriate for Year 5 level, and paused the screen display when students were asked to respond orally.

The implementation of the Duolingo application in class V MI Khilafiyah Syafi'iyah Zainul Hasan Genggong created a very dynamic and enthusiastic learning atmosphere. The use of a projector to display the application interface collectively triggered a significant positive emotional response from the students. The classroom atmosphere, which had previously been quiet, became boisterous with excitement, reflecting the students' curiosity about digital learning media, which they had never experienced before. This is in line with (Mayer, 2024) Cognitive Theory of Multimedia Learning, which states that the simultaneous use of visual and auditory elements can significantly increase students' cognitive engagement and motivation to learn, especially in children. This enthusiasm shows that the introduction of new technology can instantly increase students' affective engagement through multimedia stimuli that capture the full attention of all participants.

In the process of interacting with the application, the decision-making mechanism was carried out through the active participation of students in turns. Instead of answering simultaneously, which could potentially cause chaos, students came to the front of the class one by one to contribute their answers. Although students actively suggest word choices or translations, the researcher, acting as the instructor, acts as the main controller in determining the final answer. This strategy reflects the concept of technology-supported collaborative learning, in which, according to (Kessler, 2018), the integration of technology in language classes must be able to facilitate regular social interaction so that students can build knowledge collectively. This pattern of interaction ensures a guided discovery structure, where students have the autonomy to try, while the teacher ensures that the learning flow remains on track with the material targets.

Findings in the field show a contrasting transformation when compared to the initial learning conditions that relied solely on textbooks. Before the implementation of Duolingo, students tended to be passive and only received one-way instructions through conventional techniques. The integration of digital media changed the classroom atmosphere to a more lively one; students began to show a healthy competitive attitude and actively scrambled to answer questions. This phenomenon is supported by research by (Plass et al., 2015), which confirms that gamification elements in educational applications can reduce language anxiety and transform a passive learning environment into an interactive and enjoyable one. This change confirms that digital stimulation can break academic

boredom and encourage MI students to be more courageous in expressing their understanding of vocabulary.

During the learning process, researchers applied pedagogical scaffolding strategies to bridge the gap in students' understanding of vocabulary considered complex. When the application presented difficult new words, researchers paused progress to provide additional explanations by writing synonyms on the board or using simple analogies. This approach is relevant to the argument made by (Derivry & Potolia, 2023), who state that the role of teachers remains crucial in digital learning to provide context and pedagogical support so that technology does not merely become a tool for entertainment. This approach ensures that the use of Duolingo becomes a meaningful cognitive process in which each new vocabulary word is deeply contextualized before students move on to higher levels of difficulty.

To explore more deeply the experiences of Madrasah Ibtidaiyah students in learning English vocabulary through the Duolingo application, researchers collected data through participatory observation and semi-structured interviews. The interviews were conducted in 12 February 2026 involving six fifth-grade students from MI Khilafiyah Syafi'iyah Zainul Hasan Genggong who were selected using purposive sampling techniques. The criteria for selecting participants were based on their level of activity during learning sessions using a projector, good communication skills, and representation of various levels of initial vocabulary comprehension. This was done to understand how digital interaction through Duolingo affects students' motivation, memory retention, and confidence in pronouncing new vocabulary.

As a first step to validate the impact of using this application from the teachers' perspective, the researchers conducted interviews with fifth-grade English teachers. The teachers confirmed that integrating Duolingo into the classroom brought about real changes in students' cognitive abilities to remember material, as stated in the following excerpt:

"Yes, I have noticed some changes in the students' abilities, especially in remembering the vocabulary they have learned. After the activity was completed, when I tried to ask them again about some of the words that appeared in the exercises, several students were able to mention the meaning or pronunciation quite well. This shows that repeated exercises in the application can help students remember vocabulary more easily. Although not all students experienced the same improvement, in general there was quite positive progress."

This transformation shows that the transition from traditional textbook-based memorization methods to interactive digital platforms can strengthen students' long-term memory through consistent reinforcement. The students' ability to recall the meaning and pronunciation of words well indicates that

Duolingo's audio-visual stimulation helps them internalize information more deeply than simply reading a list of words. Pedagogically, this positive feedback from teachers reinforces the theory that game-based learning not only increases enjoyment but also serves as an effective cognitive tool for overcoming students' learning barriers in mastering English vocabulary at the Madrasah Ibtidaiyah level.

In line with the findings from the teachers' perspective, the researchers then explored in greater depth the direct experiences of the students during the learning process. Through these interviews, the researchers sought to explore the students' subjective perspectives on the effectiveness of the application's features compared to the conventional learning media (textbooks) previously used in class. During the interview process, the researchers asked five main questions focusing on the technical aspects of using the application, ease of remembering words, and the emotional impact of gamification elements. The interview data was recorded using audio devices and supported by photographic documentation of the activities to ensure data validity. Based on the results of a thematic analysis of the students' responses, several main themes emerged that describe their learning experiences as follows:

Table 1 Interview Result

Participant	Main Theme	Sub-theme / Focus	Direct Quote
1	Students' Confidence & Future Aspiration	Impact on pronunciation and speaking confidence	<i>"Yes, it's very helpful. Because if we are fluent in pronunciation, our confidence will increase and that will be a plus for our future."</i>
2	Cognitive Processing of Vocabulary	Multi-modal repetition and long-term memory	<i>"Yes, much easier. This is because Duolingo uses a method of repeated repetition in various formats (visual, audio, and text), so that the vocabulary sticks in your long-term memory."</i>
3	Gamification & Learning Motivation	Attractive interface and reward system (points/levels)	<i>"Yes, I feel happy and excited because the interface is attractive and there is a points and level system that makes me want to keep learning every day."</i>

4	Comparative Learning Experience	Interactivity and instant feedback vs. passive media	<i>"The main difference is interactivity and instant feedback. On Duolingo, I know immediately if my answer is wrong, complete with audio feedback. Books, on the other hand, are passive..."</i>
5	Psychological Empowerment	Auditory familiarity and reduced hesitation in speaking	<i>"Yes, I feel more confident. Because I have often heard the correct pronunciation through the app, I no longer hesitate when I have to say those words in real conversations."</i>

Based on the data presented in Table 1, it can be seen that the use of the Duolingo application has a multifaceted impact on the English vocabulary learning process of MI students. Student motivation and perception are not only influenced by the technical features of the application, but also by psychological factors and interactive experiences in the classroom. For example, Participant 1 and Participant 5 highlighted an increase in self-confidence and awareness of the importance of correct pronunciation for their future. This shows that Duolingo has succeeded in building students' intrinsic motivation by strengthening their speaking skills from an early age.

On the other hand, Participant 3 and Participant 4 emphasized the functional and mechanical aspects of the application, such as the reward system and instant feedback. These findings indicate that the gamification elements in Duolingo serve as effective external motivators to maintain the attention of Madrasah Ibtidaiyah students, who tend to have limited attention spans. In addition, the comparison provided by Participant 4 confirms that the transition from passive media (textbooks) to interactive digital media provides a more meaningful learning experience due to direct audio-visual engagement. Overall, the results of these interviews reinforce the observational findings that the collective integration of Duolingo in the classroom is capable of creating a supportive learning environment that accommodates students' cognitive and affective needs in mastering new vocabulary.

Vocabulary learning activities in the Duolingo app are designed with a repetition approach that combines visual, auditory, and textual elements simultaneously. Based on the interview results, Participant 2 explained that the effectiveness of vocabulary mastery in this application lies in the diversity of its interaction formats. This was revealed in his statement:

“Duolingo uses a method of repeated repetition in various formats (visual, audio, and text), so that the vocabulary sticks in your long-term memory.”

This finding is in line with (I. S. P. Nation, 2022) which states that repetition is the key to vocabulary retention, whereby learners need to interact with new words many times in various activities in order to truly master them.

Through this sensory-based repetition approach, fifth-grade MI students engage in various types of systematic instructional exercises. Based on field observations, there are six main types of activities that facilitate students' vocabulary mastery through this application:

Matching images with words

This activity facilitates vocabulary acquisition through concrete visual associations. Researchers direct students' attention to the projector screen to identify familiar objects before selecting the correct answer. The use of an application interface with brightly colored illustrations and attractive designs successfully keeps students fully focused on the learning material. The students' responses were enthusiastic and participatory, as they actively discussed the relationship between the shape of the object and the English text displayed. During the process, a positive competitive atmosphere and collective excitement arose when students successfully found the correct answer. This emotional involvement boosted the students' confidence and eliminated learning pressure, making it easier for them to understand the meaning of new words through an interactive game format.

Listening Activity

This activity focused on strengthening students' auditory skills, where the researcher instructed the entire class to listen to the sounds coming from the Duolingo app through a speaker. The researcher guided the students to focus on the sounds of words or sentences spoken by native speakers, then asked them to identify the word fragments available on the screen to be rearranged. Students were also given the opportunity to listen to the audio in slow mode (turtle icon) to ensure the accuracy of their hearing of difficult phonemes. The students' response to this activity showed deep concentration and curiosity. Students actively tried to imitate the sounds they heard before deciding on the right word choice. There was lively interaction as students corrected each other's listening in a collaborative atmosphere. This activity transformed the usually boring listening process into an interactive and participatory exercise. This synchronized audio-visual engagement made students feel more confident in their pronunciation skills. This activity effectively helped Madrasah Ibtidaiyah students recognize English sound patterns through a format that was simple yet cognitively challenging.

Repetition

This activity focuses on training students' oral production through techniques that mimic the voice models provided by the application. The researcher instructs the entire class to listen carefully to the pronunciation of the sentences that appear on the projector screen, then guides the students to repeat the sentences together before one representative comes forward to try the voice recognition feature. The researcher ensures that each intonation and sound of the words is practiced repeatedly to strengthen the students' memory and articulation habits. The students' response to this repetition activity is very proactive and curious. The students' activity involves the process of listening critically and trying to repeat each word in the sentence aloud. Small discussions arose among the students as they tried to match the sounds they produced with the sounds coming out of the audio system. This emotional involvement was in stark contrast to conventional memorization methods, as students felt more confident expressing themselves without fear of mispronunciation. This activity effectively helped Madrasah Ibtidaiyah students build basic fluency through consistent and interactive repetition practice.

Vocabulary meaning recognition

This activity was designed to test students' cognitive abilities in recognizing word equivalents from Indonesian to English. In its implementation, the researcher gave instructions by directing the students' focus on the Indonesian keywords that appeared in the character application text balloons on the projector screen. The researcher guided the students to analyze the three available answer choices and asked them to distinguish the meaning of each option so that students would not just guess, but truly understand the semantic differences. The students' responses to this activity showed serious concentration while remaining interactive. Students engaged in critical thinking activities to recall previously learned vocabulary in order to determine the most appropriate answer among the distractor options that appeared. Cooperation among students was very prominent as they gave each other reasons behind their choice of certain words, creating an educational discussion process in the classroom.

Match the appropriate vocabulary

This activity focuses on strengthening students' memory through the technique of synchronous word pairing between Indonesian and English. In this session, the researcher instructed students to observe two columns of words displayed on the projector screen and find the correct translation between them. The researcher guided students to process information quickly but carefully, encouraging them to identify the vocabulary they were most confident about first to make it easier to eliminate other word choices. Students' responses to this activity were very dynamic and interactive. Students engaged in problem-solving activities that required high concentration to match ten different words in a short

time. There was lively collective discussion in the classroom as students tried to synchronize their answers. The speed with which students responded to these visual stimuli indicated an improvement in vocabulary mastery that was beginning to be well internalized. There is a real emotional satisfaction when the word pairs they choose disappear from the screen as a sign of a correct answer, which provides motivation to complete the entire challenge. This activity effectively helps students train their memory and accelerate their language transfer skills through an interactive and fun format.

Complete the sentence

This activity is a more complex level of interaction because it requires students to understand the context of short conversations. Researchers gave instructions for students to listen to sentences on the screen, while providing assistance in the form of clues or explanations of familiar situations on the blackboard to clarify the meaning. This visual aid on the blackboard served as a bridge for students to determine the most logical answer to complete the missing part of the dialogue. The students' responses showed a significant improvement in critical thinking skills. They engaged in collective discussions to connect the clues from the researcher with the answer choices available in the application. This activity sparked a feeling of challenge but remained enjoyable, where students felt proud when they succeeded in constructing functional sentences. Through this contextual instructional support, students became more confident in applying vocabulary to real communication structures.

DISCUSSION

This study shows that the implementation of Duolingo through projector-based guided instruction is in line with several digital learning theories. The use of multimedia elements such as images, text, and audio reflects the principles of Technology Enhancing Language Learning (TELL) proposed by (Warschauer & Meskill, 2013) , which emphasizes the integration of technology to support meaningful language interaction. Furthermore, the combination of visual and auditory input is consistent with the Cognitive Theory of Multimedia Learning developed by (Mayer, 2005), which states that learning is more effective when verbal and visual information are presented together. The interactive and participatory nature of these activities also supports (Vygotsky & Cole, 2018) Constructivism Theory, as students actively construct their understanding of vocabulary through engagement, exploration, and interaction in the classroom rather than passive memorization.

In relation to vocabulary, the observed activities reflect the aspects of vocabulary knowledge proposed by (Webb & Nation, 2017) and (Schmitt, 2010), which include form, meaning, and use. Matching and listening activities supported

students in recognizing word forms and meanings, while repetition and oral responses facilitated productive use. The students' enthusiasm and voluntary participation can also be interpreted through Self-Determination Theory developed by (Deci et al., 2017), which highlights the importance of intrinsic motivation in learning. The gamified elements of Duolingo appeared to foster enjoyment and autonomy. Additionally, the repeated exposure and immediate feedback observed during the sessions align with Behaviorism Theory associated with (Skinner, 2019), particularly in the reinforcement process where correct responses were strengthened through confirmation and repetition.

The results of the study show that the Duolingo application was implemented collectively through a projector during classroom instruction, allowing students to participate together in vocabulary learning activities under the guidance of the teacher. During the learning process, students actively observe vocabulary exercises displayed on the screen and answer questions provided in the application together. Some students are also willing to voluntarily answer these tasks, showing that learning activities encourage active participation in class. This classroom interaction shows that the use of digital applications can create a collaborative learning experience where students not only learn vocabulary individually but also through joint involvement in class. Shared use of the application allows students to interact simultaneously with vocabulary exercises while the teacher facilitates the learning process and guides students when difficulties arise. According to (Agustina et al., 2022) that mobile learning applications can also be adapted to collaborative learning environments in the classroom, especially in contexts where access to individual devices may be limited. Previous studies also highlight that MALL-based applications such as Duolingo can support vocabulary learning by providing interactive language exercises and increasing student exposure to vocabulary through digital activities (Ahmed et al., 2022).

During classroom observations, students showed enthusiasm and curiosity when vocabulary exercises appeared on the screen, especially when the application provided immediate feedback after each answer. The game features encouraged students to participate more actively because they were interested in finding out whether their answers were correct. As a result, the classroom atmosphere became more lively compared to traditional vocabulary learning activities, which usually rely on memorization. The six identified activity types apply the principle of sensory repetition, which is crucial for long-term memory. Through varied formats, students do not merely memorize words in isolation but interact with the vocabulary repeatedly within audio, visual, and textual contexts. This structured repetition allows Madrasah Ibtidaiyah students to internalize sound patterns and word meanings more deeply than with conventional translation

methods. The application of pedagogical scaffolding strategies by teachers remains the key to success even when digital media is used intensively. When students encounter complex vocabulary, the teacher's role in providing simple analogies or additional explanations on the blackboard ensures that app usage is not merely entertainment but a meaningful cognitive process. This synergy between technology and teacher guidance creates a guided discovery framework, where students have the autonomy to experiment while staying on track with the targeted material. According to (Hong et al., 2024), gamification in language learning can transform traditional classroom activities into a more interactive learning experience by integrating game elements such as points, rewards, and levels. Similarly, Fadillah and (Al-Hafdi & Alhalafawy, 2024) found that gamified learning activities encourage students to participate more actively because learning tasks are considered fun challenges rather than formal academic work.

The learning process also shows that teacher guidance remains essential in supporting students' vocabulary comprehension when using the application. When students encounter unfamiliar words or are unsure about the correct answer, teachers provide explanations, examples, and simple translations to help them understand the meaning of the vocabulary. This interaction between teachers and students creates a supportive learning environment, where students feel comfortable asking questions and clarifying their understanding. Teacher guidance is very important when students encounter unfamiliar vocabulary or have difficulty understanding the instructions provided by the digital learning platform. Through explanations, examples, and contextual guidance, teachers help students interpret the meaning of vocabulary more effectively. (Lipton & Wellman, 2024) showed that teacher guidance plays a crucial role in technology-based language learning because students still need instructional support to understand the meaning of vocabulary and learning instructions provided by digital platforms.

Interview data reinforces the finding that Duolingo has a positive psychological impact, particularly on boosting students' self-confidence. The auditory familiarity gained from frequently listening to native speakers' pronunciation through the app makes students no longer hesitate to produce words orally. This confidence is crucial for young learners in building a foundation for English communication for their future educational levels. The interactivity and instant feedback offered by Duolingo are key differentiators from passive media such as textbooks. Students feel motivated by the point and level system (gamification), which provides emotional satisfaction when they successfully complete challenges. This mechanism effectively transforms classroom

competition into a healthy learning incentive, where students support one another and engage in collaborative discussions to find the correct answers.

Overall, student responses during learning activities also show that using Duolingo provides a more enjoyable vocabulary learning experience. Many students appear more confident in answering vocabulary questions because they receive immediate feedback from the app, which helps them recognize whether their answers are correct or incorrect. The visual and audio features available in the app also help students understand the meaning and pronunciation of vocabulary more clearly. As a result, students become more motivated to participate in learning activities and show greater interest in learning English vocabulary. (Abildina et al., 2023) show that the integration of interactive digital learning platforms in English classes can increase student motivation and interest because learning activities become more interesting and enjoyable. In line with these findings, interactive features such as visual support, audio pronunciation, and instant feedback can create a more positive learning experience for students and encourage them to participate more actively in vocabulary learning activities.

CONCLUSION

This study shows that the implementation of the Duolingo application through guided instruction using a projector successfully increased the affective and cognitive engagement of fifth-grade students at MI Khilafiyah Syafi'iyah Zainul Hasan Genggong. The main findings reveal that the integration of digital technology transformed the previously passive classroom atmosphere into a dynamic and enthusiastic one through six main types of activities: matching images, listening activities, repetition, meaning recognition, matching vocabulary, and completing sentences. This study clearly answers the research question by proving that Duolingo functions as an effective pedagogical medium in the Madrasah Ibtidaiyah environment, where multimedia and gamification features are able to overcome the limitations of students' attention span and strengthen long-term memory retention of new vocabulary.

The implications of this study reinforce the theories of multimedia learning and constructivism, which show that the collaboration between digital media and teacher guidance (scaffolding) creates a supportive learning environment for elementary school students. Although it has a significant impact on students' confidence and motivation, this study has limitations because it focuses on describing the process in one institution with a limited number of participants, namely 26 students. Therefore, it is recommended that future research explore the independent use of personal devices or involve a broader population in various Madrasah contexts. For education practitioners, it is

recommended to collectively integrate digital media to facilitate social interaction and educational discussions in the classroom.

REFERENCES

- Abildina, S., Sardarova, Z., Ozgambayeva, R., Janzakova, S., Kalykbayeva, A., Bitikova, A., & Abdol, E. (2023). The Effect of Variables Associated with the Digital Learning Environment on Students' Motivation and Attitudes. *International Journal of Education in Mathematics, Science and Technology*, 11(6), 1497–1517.
- Achmadi, A. S., & Sofiana, N. (2024). Fairy Tales in The Classroom: Investigating the Effect of English Fairy Tales on Vocabulary Mastery. *Channing: Journal of English Language Education and Literature*, 9(2), 100–106.
- Agustina, N., Mayuni, I., Iskandar, I., & Ratminingsih, N. M. (2022). Mobile learning application: Infusing critical thinking in the EFL classroom. *Studies in English Language and Education*, 9(2), 16.
- Ahmed, A. A. A., Hassan, I., Pallathadka, H., Keezhatta, M. S., Noorman Haryadi, R., Al Mashhadani, Z. I., Yahya Attwan, L., & Rohi, A. (2022). MALL and EFL learners' speaking: Impacts of Duolingo and WhatsApp applications on speaking accuracy and fluency. *Education Research International*, 2022(1), 6716474.
- Al-Hafdi, F. S., & Alhalafawy, W. S. (2024). Ten Years of Gamification-Based Learning: A Bibliometric Analysis and Systematic Review. *International Journal of Interactive Mobile Technologies*, 18(7).
- Anandra, C. T., & Salmiah, M. (2024). Students' Perception of Duolingo application on mastering vocabulary. *IDEAS: Journal on English Language Teaching and Learning, Linguistics and Literature*, 12(1), 688–704.
- Andari, I. A. M. Y. (2023). Factors influence the acquisition of vocabulary by young learners. *Kumarottama: Jurnal Pendidikan Anak Usia Dini*, 2(2), 153–166.
- Apoko, T. W., Dunggio, A. A., & Chong, S. L. (2023). The students' perceptions on the use of mobile-assisted language learning through duolingo in improving vocabulary mastery at the tertiary level. *English Review: Journal of English Education*, 11(1), 17–26.
- Ayana, H., Mereba, T., & Alemu, A. (2024). Effect of vocabulary learning strategies on students' vocabulary knowledge achievement and motivation: the case of grade 11 high school students. *Frontiers in Education*, 9, 1399350.
- Creswell, J. W., & Creswell, J. D. (2017). *Research design: Qualitative, quantitative, and mixed methods approaches*. Sage publications.
- Deci, E. L., Olafsen, A. H., & Ryan, R. M. (2017). Self-determination theory in work organizations: The state of a science. *Annual Review of Organizational Psychology and Organizational Behavior*, 4, 19–43.
- Derivry, M., & Potolia, A. (2023). *Virtual exchange for intercultural language learning and teaching: Fostering communication for the digital age*. Routledge.

- Fitri, Y., Melani, M., Roza, V., & Reflinda, R. (2023). The effect of using Duolingo application toward students' vocabulary mastery at the second grade of SMPN 1 Koto Besar. *Innovative: Journal Of Social Science Research*, 3(2), 8265–8279.
- Hamdani, B., & Deviana, A. M. (2021). Increasing the students' vocabulary mastery through constructivism principle in the fifth grade of sdn zaha probolinggo. *Teaching English as Foreign Language, Literature and Linguistics*, 1(2), 88–95.
- Harahap, I. F., & Daulay, S. H. (2023). Duolingo Application in English Teaching Practice: Teacher's Perception. *KnE Social Sciences*, 93–104.
- Hong, Y., Saab, N., & Admiraal, W. (2024). Approaches and game elements used to tailor digital gamification for learning: A systematic literature review. *Computers & Education*, 212, 105000.
- Indrasari, H. A., Prasetyo, Y., & Putranto, H. R. (2024). The Unlocking Language Proficiency: Exploring Duolingo's Impact on Vocabulary Learning. *Journal of English Teaching, Literature, and Applied Linguistics*, 8(1), 75–82.
- Kessler, G. (2018). Technology and the future of language teaching. *Foreign Language Annals*, 51(1), 205–218.
- Kulsum, E. M., Sakina, R., Fauzan, E., & Fajriah, Y. N. (2023). Teaching vocabulary to young learners using YouTube videos at a private school in Sumedang. *JEPAL (Journal of English Pedagogy and Applied Linguistics)*, 4(1), 51–61.
- Langi, N. T. (2024). Using picture of Luwu culture activity for teaching vocabulary. *English Language Teaching Methodology*, 4(3), 482–488.
- Lipton, L., & Wellman, B. (2024). *Mentoring Matters: A Practical Guide to Learning-Focused Relationships, (Establish a learning-focused mentor-teacher relationship)*. Solution Tree Press.
- Mayer, R. E. (2005). *The Cambridge handbook of multimedia learning*. Cambridge university press.
- Mayer, R. E. (2024). The past, present, and future of the cognitive theory of multimedia learning. *Educational Psychology Review*, 36(1), 8.
- Mokalu, P. (2022). The Use of Realia to Improve Young Learners' Vocabulary. *Journal of English Language Teaching, Literature and Culture*, 1(1), 46–53.
- Moleong, L. J. (2017). *Metodologi penelitian kualitatif/Lexy J. Moleong*. Pt Remaja Rosdakarya.
- Muhammad, M. H. I. A., Muhyidin, M. S., & Setyawan, W. H. (2024). The effectiveness of using duolingo in teaching vocabulary to camp class at language center. *Celtic: a journal of culture, english language teaching, literature and linguistics Учёбное: Universitas Muhammadiyah Malang*, 11(2), 293–305.
- Mutia, A., Sahardin, R., & Putra, G. M. (2022). The impact of vocabulary instruction on vocabulary achievement. *English Education Journal*, 13(4), 464–477.
- Nasrul, V., & Fatimah, S. (2023). The effect of using duolingo application on students' English learning motivation and vocabulary enrichment: An experimental research at SMKN 1 Padang. *Journal of English Language*

Teaching, 12(3), 933–952.

- Nation, I. S. P. (2022). *Learning vocabulary in another language*. Cambridge university press.
- Nation, P. (2022). Teaching and learning vocabulary. In *Handbook of practical second language teaching and learning* (pp. 397–408). Routledge.
- Ndraha, M. P., Naibaho, T. T., Purba, M. A., Siburian, G. D., Manurung, A. K. R., Silitonga, R. A., Herman, H., Sihombing, S. D., & Saragih, V. R. (2023). The Importance of Learning English “Vocabulary” for Elementary School Age Children. *Journal of Community Empowerment and Innovation*, 2(3), 114–125.
- Plass, J. L., Homer, B. D., & Kinzer, C. K. (2015). Foundations of game-based learning. *Educational Psychologist*, 50(4), 258–283.
- Pradini, P. C., & Adnyayanti, N. L. P. E. (2022). Teaching English vocabulary to young learners with Wordwall application: An experimental study. *Journal of Educational Study*, 2(2), 187–196.
- Purwanto, H. N., Faridi, A., & Rozi, F. (2022). The effect of DuoLingo and SPADA to teach listening to students with different achievement levels. *English Education Journal*, 12(1), 87–95.
- Puspitasari, H., Maharani, R. F., Setyawan, W. H., & Primasari, Y. (2022). Android-based mobile application for vocabulary learning. *English Education*, 1(2), 4.
- Rosyada-AS, A., & Apoko, T. W. (2023). Investigating English vocabulary difficulties and its learning strategies of lower secondary school students. *JOLLT Journal of Languages and Language Teaching*, 11(3), 489–501.
- Ryan, T., Islam, M. H., Ferdiyanto, F., Islam, U., & Hasan, Z. (2024). Analysis of students’ difficulties in mastering English vocabulary at elementary school students. *International Journal of English Education and Linguistics (IJoEEL)*, 6(1), 43–49.
- Sabgini, K. N. W., & Wiraatmaja, T. (2023). The usage of video in teaching vocabulary for young learners. *Journal of English Educational Study (JEES)*, 6(1), 93–104.
- Sakina, R., & Astuti, R. S. (2024). Using Duolingo application in learning vocabulary: A descriptive qualitative study at the fifth grade of an elementary school in Sumedang. *Biormatika: Jurnal Ilmiah Fakultas Keguruan Dan Ilmu Pendidikan*, 10(2), 131–145.
- Sanjaya, I. G. H., Dewi, N. L. P. E. S., & Paramartha, A. A. G. Y. (2022). An investigation of teaching aids used by English teachers in teaching vocabulary for young learners. *Journal of Educational Study*, 2(1), 26–34.
- Schmitt, N. (2010). *Researching vocabulary: A vocabulary research manual*. Springer.
- Skinner, B. F. (2019). *The behavior of organisms: An experimental analysis*. BF Skinner Foundation.
- Sugiyono, P. D. (2018). Quantitative, qualitative, and R&D research methods. *Bandung:(ALFABETA, Ed.)*.
- Suhendra, N. N., Sari, N. T. A., & Wahyudin, D. (2024). The Effect of Using the Duolingo Application on Elementary School Students’ Mastery of English

- Vocabulary. *Educational Studies and Research Journal*, 1(2), 93–98.
- Syafrizal, S., & Haerudin, H. (2018). The implementation of vocabulary building strategy in teaching English vocabulary to young learners. *Jo-ELT (Journal of English Language Teaching) Fakultas Pendidikan Bahasa & Seni Prodi Pendidikan Bahasa Inggris IKIP*, 5(1), 40–48.
- Viberg, O., Wasson, B., & Kukulska-Hulme, A. (2020). Mobile-assisted language learning through learning analytics for self-regulated learning (MALLAS): A conceptual framework. *Australasian Journal of Educational Technology*, 36(6), 34–52.
- Vygotsky, L., & Cole, M. (2018). Lev Vygotsky: Learning and social constructivism. *Learning Theories for Early Years Practice*. UK: SAGE Publications Inc, 68–73.
- Warschauer, M., & Meskill, C. (2013). Technology and second language teaching. In *Handbook of undergraduate second language education* (pp. 303–318). Routledge.
- Webb, S., & Nation, P. (2017). *How vocabulary is learned*. Oxford University Press.
- Wen, Y., Song, Y., Aw, G. P., Goh, H. H., Zheng, Y., & Wang, Y. (2024). Investigating seamless vocabulary learning for young learners. *Educational Technology & Society*, 27(3), 102–113.
- Yuwono, N. I. (2022). The effectiveness of Duolingo application in teaching vocabulary at the seventh grade students of Junior High School. *Edunovatica: Jurnal Inovasi Pembelajaran*, 1(01), 1–8.
- Zainuddin, H. P., & Wahab, A. A. (2023). The Effectiveness of the Students' Vocabulary Handbook of English Course at Zahanain Islamic Boarding School. *ELS Journal on Interdisciplinary Studies in Humanities*, 6(1), 133–137.