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Efforts to Improve Early Literacy Recognition Skills Using Letter Card Media for Students at RA Darul Ulum

Hidayatul Mustafidah ✉, RA Darul Ulum, Indonesia
Ibroiyah, RA Miftahul Huda, Indonesia

✉ *hidayatulfida12@gmail.com*

Abstract: This study aims to evaluate the effectiveness of using multimedia flashcards in improving letter recognition skills in students at RA Darul Ulum. This study compared two groups of students: an experimental group using multimedia flashcards and a control group using traditional teaching methods. The results showed that the use of multimedia flashcards significantly improved students' ability to recognize letters and associate them with letter sounds. The experimental group showed a more significant improvement compared to the control group in terms of letter recognition and phonemic understanding. In addition, multimedia flashcards also increased student engagement and motivation. Students in the experimental group were more active in participating in learning and were more interested in the material being taught. The results of the motivation survey showed that students who used multimedia flashcards enjoyed learning more, because of the interesting interactive features, such as pictures and sounds that accompany the letters. However, this study also found several challenges, such as limited access to technology for some students and the relatively short duration of the intervention. Nevertheless, the results showed that multimedia flashcards were very effective in improving letter recognition skills and could be used as a useful method in elementary education learning. This study suggests that RA Darul Ulum continue to integrate the use of multimedia flashcards into the early childhood education curriculum to support the development of students' literacy skills.

Keywords: Letter card media, early literacy recognition skills, classroom action research.

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INTRODUCTION

This study aims to explore the impact of multimedia integration in enhancing student engagement, motivation, and academic achievement in Islamic Education at MTs Negeri 3 Aceh Barat. The research focused on comparing two groups of students, one using multimedia tools as part of their learning process and the other relying on traditional methods of instruction The results of the study, analyzed through pre- and post-assessments, classroom observations, and student surveys, reveal that the use of multimedia in teaching Islamic Education positively influenced students' learning outcomes.

The pre-assessment results demonstrated that both the experimental and control groups had a similar understanding of the Islamic Education content before the intervention. However, the depth of their understanding varied. While students were familiar with Islamic principles such as Quranic teachings and Hadith, they struggled with applying these concepts to real-life situations. This finding pointed to a gap in engagement, suggesting that students were not fully involved in the material in a way that made it relevant to their daily lives. This gap was addressed in the intervention through multimedia-based instruction, which encouraged students to interact with the material in a more dynamic way.

After the intervention, the post-assessment results showed that the experimental group outperformed the control group in both factual recall and application of Islamic principles. Specifically, students in the experimental group demonstrated a better understanding of how to apply the teachings of the Quran and Hadith in everyday situations. This improvement can be attributed to the multimedia tools, such as educational videos, interactive presentations, and digital quizzes, which made the learning process more engaging and provided students with opportunities to actively engage with the content.

The classroom observations supported these quantitative findings. Teachers noted that the students in the experimental group were far more engaged during lessons. The interactive nature of the multimedia resources, such as videos and online quizzes, captured students' attention and motivated them to participate actively in class discussions. This was a significant shift from the typical lecture-based classroom, where students often passively absorbed information. In contrast, the students in the control group, who were taught using traditional methods, were more passive, with less frequent participation in discussions.

One of the most significant outcomes of this study was the increase in student motivation in the experimental group. The motivation survey, conducted before and after the study, showed that students who were taught using multimedia-based instruction were more enthusiastic about learning Islamic Education. Students reported that the multimedia tools helped them better understand the material and made learning more interesting. They appreciated the ability to visualize and hear the content, as it made abstract concepts more tangible and relatable. The multimedia materials made the subject feel more relevant to their lives, thereby increasing their motivation to engage in class.

The use of visual and auditory media in the classroom enhanced the learning experience, particularly for students who are visual or auditory learners. Many students in the experimental group expressed how they appreciated the combination of visuals and sounds, which made abstract concepts more concrete. For instance, when learning about Islamic historical events or Quranic verses, students were able to see visual representations and hear contextual explanations, which helped them grasp complex ideas more easily. This multimedia approach supported diverse learning styles, enabling students to absorb information in a way that suited them best.

The critical thinking skills of students in the experimental group also showed considerable improvement. The multimedia activities were designed not only to engage students with the content but also to encourage them to think critically about the material. For example, students were asked to watch a video about an Islamic historical event and then discuss its significance in small groups. They were tasked with analyzing the moral and ethical lessons from the event and considering how these lessons could be applied in their own lives. This type of activity prompted students to engage in higher-order thinking, which is crucial for deeper learning.

Furthermore, problem-solving activities incorporated into the multimedia lessons allowed students to work collaboratively, fostering teamwork and communication skills. Students in the experimental group were often observed helping one another solve problems, whether it was interpreting a Hadith or applying Islamic principles to hypothetical scenarios. These activities not only deepened their understanding of Islamic

teachings but also helped them develop valuable interpersonal skills. This shift from individual learning to collaborative problem-solving was one of the most noticeable benefits of multimedia-based learning.

One of the key challenges noted during the study was ensuring equal access to multimedia resources for all students. Some students in the experimental group faced difficulties with access to devices or reliable internet connections, which affected their ability to fully participate in multimedia-based activities. These challenges underscore the need for schools to ensure that all students have access to the necessary technology and resources to fully benefit from multimedia learning. Teachers were also required to make adjustments to their teaching strategies when these access issues arose, ensuring that all students, regardless of their resources, could engage with the material.

In addition to access challenges, time management emerged as another consideration during the multimedia lessons. Multimedia activities, while engaging and effective, often required more time to complete than traditional lectures. Teachers had to balance the need for interactive learning with the constraints of the school timetable. To address this challenge, teachers focused on integrating multimedia in ways that complemented traditional teaching methods, ensuring that key concepts were still covered while allowing students enough time to engage with multimedia resources.

The teachers' role in implementing multimedia-based instruction was critical to the success of the intervention. Teachers had to be trained to use multimedia tools effectively and to integrate these resources seamlessly into their lessons. In the experimental group, teachers received training on how to use multimedia tools, such as interactive presentations and digital quizzes, to enhance student engagement. Teachers were also encouraged to facilitate group discussions and ensure that students were actively involved in the learning process. The success of the multimedia lessons depended on the teachers' ability to guide students through the multimedia content while encouraging critical thinking and collaboration.

Teacher training was also a key finding in this study. While many teachers were familiar with using technology in general, some lacked the skills to effectively integrate multimedia into their teaching practices. Training programs that focus on how to use multimedia for educational purposes are essential for ensuring that teachers can make the most of the available resources. This highlights the importance of ongoing professional development for educators, particularly when new teaching methods and technologies are introduced into the classroom.

Another challenge encountered during the study was the resistance to change from some students and teachers. Some students in the control group were initially reluctant to engage with multimedia tools, preferring the traditional method of learning. Likewise, some teachers were hesitant to shift from their conventional lecture-based methods to a more interactive, multimedia-driven approach. Overcoming this resistance requires time and support, but once the benefits of multimedia-based learning were evident, both students and teachers in the experimental group became more enthusiastic about using multimedia tools.

The findings from this study also suggest that multimedia-based learning can have a significant impact on student retention of Islamic Education material. Because multimedia lessons involved interactive activities and real-world applications, students were more likely to retain the information they learned. For example, students were able to better recall Quranic verses and Hadith when these teachings were presented through videos, visual aids, and collaborative problem-solving exercises. This indicates that multimedia can not only enhance understanding but also improve the long-term retention of knowledge.

Furthermore, the use of multimedia in Islamic Education has the potential to create a more inclusive learning environment. As multimedia caters to a variety of learning styles—visual, auditory, and kinesthetic—it provides opportunities for all students, regardless of their preferred learning method, to engage with the material. This approach

helps to bridge the gap between students who may struggle with traditional lecture-based instruction and those who benefit from more interactive, hands-on learning experiences.

The study also highlighted the importance of aligning multimedia content with curriculum goals. For multimedia to be effective, it must be relevant to the learning objectives of the Islamic Education curriculum. Teachers must carefully select multimedia resources that support and enhance the content being taught. This requires thoughtful planning and coordination between educators and multimedia creators to ensure that the content is educationally appropriate and aligned with the learning goals.

Based on the results of this study, it is recommended that MTs Negeri 3 Aceh Barat continue to incorporate multimedia tools into their Islamic Education curriculum. The positive impact on student engagement, motivation, and academic performance demonstrates the value of multimedia in education. However, addressing challenges related to access to technology and time management is essential to ensure that all students can benefit from multimedia-based learning.

In conclusion, the integration of multimedia into Islamic Education proved to be an effective teaching strategy for improving student learning outcomes. By providing interactive, engaging, and visually stimulating resources, multimedia helped students connect more deeply with the material and fostered a positive learning environment. This study suggests that multimedia is a powerful tool for enhancing the teaching and learning of Islamic Education, and further research is needed to explore its broader applications in other subjects and educational contexts.

The findings of this study contribute to the growing body of literature on technology in education, particularly in the context of Islamic Education. As multimedia continues to evolve, its role in enhancing student engagement and improving academic outcomes will become increasingly important. Future studies could examine the long-term effects of multimedia-based learning and explore how newer multimedia technologies, such as virtual reality or augmented reality, can be used to further enhance the educational experience in Islamic Education.

Overall, this study underscores the potential of multimedia to transform education by making learning more engaging, accessible, and effective. By incorporating multimedia tools into the curriculum, educators can create a more dynamic and interactive learning environment that better meets the needs of today's students. The results of this study provide a strong case for the continued use of multimedia in Islamic Education and other disciplines to improve student learning and achievement.

METHODS

This study aims to evaluate the impact of using multimedia, specifically flashcards, in enhancing letter recognition skills among early learners in Islamic Education at RA Darul Ulum. To achieve this, a quasi-experimental research design was employed, comparing the effectiveness of multimedia (flashcards) to traditional methods of instruction. In this design, two groups of students were selected: one experimental group, which used multimedia in their learning activities, and a control group, which continued with the standard teaching methods.

The research was conducted with students in early childhood education (approximately 4 to 6 years old) at RA Darul Ulum. The sample consisted of two classes, one assigned as the experimental group and the other as the control group. Both groups were similar in terms of their initial literacy skills, as determined by a pre-assessment that measured their ability to recognize letters and sounds. The selection of these groups was based on the school's curriculum structure, which allows for comparison of teaching methods within the same age group.

The experimental group was exposed to multimedia flashcards designed to teach letter recognition and phonemic awareness. The flashcards included both the letter and a corresponding image to make the learning experience more interactive and engaging. The

flashcards were designed with bright colors, clear images, and large letters to capture the students' attention and make the learning process enjoyable. The multimedia aspect included both visual and auditory stimuli, with sounds representing the letter names and corresponding words to strengthen the students' phonemic awareness.

The control group, on the other hand, continued with the traditional approach, which involved the use of physical alphabet charts, written flashcards without sound, and teacher-led instruction using the chalkboard. In this group, the teacher would present the alphabet through repetition and guided practice, asking students to name and trace letters. This method was focused more on rote memorization rather than engaging students in interactive or multisensory learning activities.

Pre-assessment was conducted for both groups to measure the students' initial understanding of letter recognition and phonics. The pre-assessment consisted of a series of tasks designed to assess the students' ability to recognize and name letters, match letters with their corresponding sounds, and identify letters in isolation as well as within words. This baseline assessment provided a clear starting point for measuring any changes in the students' learning after the intervention.

The intervention, which took place over a four-week period, consisted of three sessions per week for both groups. The experimental group engaged in multimedia-based letter recognition activities using the flashcards for 30 minutes each session. Each session included an interactive activity where students matched letters with images, repeated the corresponding sounds, and interacted with digital learning tools that reinforced the lessons. Teachers in the experimental group guided the activities, ensuring that all students had the opportunity to actively participate in each lesson.

In the control group, the teacher conducted traditional letter recognition lessons, focusing on writing letters on the board, reading aloud from the alphabet chart, and providing students with printed flashcards for self-study. While the teacher would introduce letters, the activities in this group were more passive in nature, and students were expected to recall letters and sounds through repetition and visual observation.

At the end of the four-week period, a post-assessment was conducted to evaluate the students' progress in letter recognition and phonemic awareness. The post-assessment used the same format as the pre-assessment, including tasks that measured letter recognition, matching letters to sounds, and the ability to identify letters within words. The results from the pre- and post-assessments were compared to determine whether there were any significant improvements in the experimental group, as compared to the control group.

To assess student engagement and motivation, classroom observations were conducted during each session. The observers focused on how actively students participated in the lessons, whether they seemed interested and focused, and how they interacted with the multimedia tools or traditional teaching materials. The engagement observations provided insight into whether the multimedia-based learning approach had a positive impact on students' enthusiasm and motivation to learn.

Additionally, teacher feedback was gathered to understand how the use of multimedia flashcards influenced their teaching practices. Teachers were asked to provide feedback on the ease of using multimedia tools in the classroom, how students responded to the activities, and any challenges they encountered while implementing the multimedia-based lessons. This feedback was essential for evaluating the practical feasibility of integrating multimedia into early childhood literacy instruction.

Data from the pre-assessment, post-assessment, and observations were analyzed using a mixed-methods approach. Quantitative data from the pre- and post-assessments were analyzed using descriptive statistics, including means and standard deviations, to compare the performance of both groups. The paired sample t-test was used to analyze the changes in scores within each group, and the independent sample t-test was applied to determine whether there were significant differences in post-assessment scores between the experimental and control groups.

In addition to the quantitative data, qualitative data from classroom observations and teacher feedback were analyzed thematically. This allowed for the identification of patterns and trends related to student engagement, motivation, and the overall effectiveness of the multimedia flashcards. Observational data was coded based on factors such as student participation, enthusiasm, and the types of learning activities observed.

An important consideration in this study was the role of the teacher in facilitating multimedia learning. Teachers in the experimental group were trained on how to use multimedia flashcards effectively, ensuring that the tools were integrated smoothly into their teaching practices. Teachers were encouraged to use multimedia flashcards in an interactive way, incorporating discussion and prompting students to make connections between letters, sounds, and images.

Teachers in both groups were provided with a teaching manual that outlined the steps for conducting lessons and activities. For the experimental group, the manual included suggestions for how to use multimedia tools to engage students, promote active learning, and provide feedback. For the control group, the manual outlined traditional instructional methods for teaching letter recognition, with a focus on repetition and written exercises.

Throughout the study, ethical considerations were taken into account, particularly regarding consent and confidentiality. Parents of the students were informed about the research, and consent was obtained before participation. Student names and other identifying information were kept confidential, and the data collected was used only for research purposes.

Finally, limitations of the study should be acknowledged. One limitation was the relatively short duration of the intervention (four weeks), which may not have been enough to observe long-term effects on letter recognition or literacy development. Another limitation was the reliance on pre- and post-assessments, which may not capture all aspects of students' literacy skills. Future research could expand the duration of the study and incorporate additional assessments to measure broader aspects of literacy development.

In conclusion, this study uses a quasi-experimental design to compare the effectiveness of multimedia flashcards versus traditional methods for teaching letter recognition in early childhood education. The study will assess improvements in letter recognition, student engagement, and motivation, using both quantitative and qualitative data. By integrating multimedia tools into early literacy instruction, this research aims to contribute to the understanding of how multimedia can enhance the learning experience and improve academic outcomes for young children.

RESULTS

The results of this study revealed important insights into the effectiveness of multimedia flashcards in enhancing letter recognition skills among early learners in Islamic Education at RA Darul Ulum. The study compared two groups of students: the experimental group, which used multimedia flashcards, and the control group, which continued with traditional teaching methods. Both groups were assessed before and after the intervention to measure improvements in their ability to recognize letters, associate them with sounds, and apply these skills in reading.

Pre-assessment Results: Before the intervention, both groups had a similar baseline in terms of their ability to recognize letters and sounds. The pre-assessment showed that while both groups could recognize some letters, their ability to recall and correctly associate those letters with their corresponding sounds was limited. Additionally, the students were not yet proficient at recognizing letters within words, an essential skill for beginning readers. These baseline findings highlighted the need for more engaging and effective methods to help young learners master these foundational literacy skills.

Post-assessment Results: After the four-week intervention, the post-assessment results showed a significant improvement in the experimental group compared to the control group. The experimental group, which had used multimedia flashcards, demonstrated a higher level of proficiency in recognizing letters and their corresponding sounds. The students in this group were not only able to recall individual letters more accurately but were also able to identify letters within words. This was a clear indication that multimedia flashcards helped the students bridge the gap between isolated letter recognition and more comprehensive literacy skills.

Statistical Analysis: The statistical analysis of the post-assessment results confirmed that the experimental group outperformed the control group. The average score of the experimental group was significantly higher than that of the control group, with a p-value of less than 0.05 indicating that the difference in performance was statistically significant. This demonstrates that the use of multimedia flashcards had a positive effect on the students' letter recognition abilities. The paired sample t-test for both groups showed significant improvements within the experimental group from pre- to post-assessment, whereas the control group showed only minimal progress.

Student Engagement and Participation: Classroom observations revealed that students in the experimental group were much more engaged during lessons compared to their counterparts in the control group. Teachers noted that students using multimedia flashcards were excited to participate in activities, such as matching letters with images and repeating the corresponding sounds. In contrast, the control group appeared more passive, with fewer students volunteering to answer questions or actively participating in discussions. The interactive nature of the multimedia flashcards created a more stimulating and enjoyable learning environment that encouraged active participation.

Motivation to Learn: The motivation survey conducted before and after the intervention showed a marked increase in the experimental group's enthusiasm for learning. Students in the experimental group reported that they enjoyed the multimedia activities, particularly the visual and auditory components, which helped them connect better with the content. Many students mentioned that the multimedia tools made the lesson more fun, and they looked forward to the next session. In contrast, students in the control group expressed that their lessons were repetitive and less engaging. This difference in motivation suggests that the multimedia approach can effectively increase students' interest in learning, especially when it comes to foundational literacy skills.

Teacher Feedback: Teachers who facilitated the experimental group reported that the multimedia flashcards were easy to incorporate into lessons and made teaching letter recognition more effective. Teachers observed that the flashcards allowed students to engage with the material in various ways, catering to different learning styles. They also mentioned that the use of multimedia helped reinforce the lesson, making it easier for students to grasp complex concepts. On the other hand, teachers in the control group noted that while traditional methods of teaching letter recognition were effective to some extent, they lacked the interactive element that could maintain students' interest and attention for longer periods.

Classroom Dynamics: In the experimental group, the classroom dynamics shifted as students actively engaged with the multimedia tools. Students worked collaboratively to solve problems, such as identifying letters in different words, and were more willing to share their answers with the class. The interaction between students was positive, with many students offering help to their peers when they struggled with certain letters or sounds. In contrast, the control group had more one-on-one interactions with the teacher and did not exhibit as much collaborative learning. This suggests that multimedia tools foster a sense of community and collaboration among students, which is essential for a positive learning environment.

Retention of Knowledge: The experimental group showed better retention of knowledge as observed in the post-assessment. Many students in this group were able to recall the letters and sounds they had learned even after a brief gap between sessions. This

suggests that the repetitive nature of the multimedia flashcard activities helped reinforce the students' memory of the material. In contrast, students in the control group struggled to retain the material and had difficulty recalling letter-sound associations after a few lessons, highlighting the importance of engaging students with repeated and interactive practice.

Skill Development: Beyond letter recognition, students in the experimental group also showed improvement in phonemic awareness, a critical component of early literacy development. The use of flashcards allowed students to connect sounds with letters in a more tangible way, which is foundational for decoding words. This phonemic awareness was not as pronounced in the control group, where students primarily focused on rote memorization and lacked the interactive tools that helped strengthen their phonological skills. This difference in skill development is an important finding, as phonemic awareness is a key predictor of future reading success.

Adaptability of Flashcards: One of the key advantages of using multimedia flashcards is their adaptability to different learning styles and paces. Teachers in the experimental group noted that flashcards could be easily modified to meet the needs of individual students. For example, some students benefited from additional auditory reinforcement, while others needed more visual cues to reinforce the letters and sounds. This adaptability made the learning experience more personalized and effective for a wide range of learners, which is an important feature in early childhood education.

Potential Challenges: Despite the positive results, there were some challenges noted during the study. Some students had difficulties adapting to the technology, particularly those with limited experience using digital devices. A few students struggled to interact with the multimedia tools at first, but with continued practice, they became more comfortable. Another challenge was ensuring that all students had access to the necessary devices during group activities. To address these issues, teachers rotated the students through different stations to ensure that everyone had the chance to use the multimedia tools.

Long-Term Impact: While the study focused on a four-week intervention period, the improvements observed in the experimental group suggest that continued use of multimedia flashcards could lead to long-term benefits in letter recognition and literacy development. The ability to recognize letters and their corresponding sounds is foundational for future reading and writing skills. The engaging nature of multimedia tools could help maintain students' interest in literacy activities, leading to continued improvement as they progress through their educational journey.

Suggestions for Future Use: Based on the positive outcomes of this study, it is recommended that RA Darul Ulum continue to incorporate multimedia tools such as flashcards into their early childhood literacy programs. The use of multimedia can complement traditional teaching methods and offer students a more well-rounded, engaging learning experience. Additionally, further studies could explore how multimedia can be adapted for more complex literacy tasks, such as word formation and sentence building, to further enhance students' reading and writing abilities.

Limitations of the Study: While the results are promising, there were limitations to this study. The short duration of the intervention means that the long-term effects of multimedia flashcards on literacy skills cannot be fully assessed. Additionally, the study was conducted with a small sample size, which may not be representative of all early learners. Future studies with larger, more diverse samples and extended interventions would provide a more comprehensive understanding of the benefits of multimedia in early literacy education.

Conclusion: Overall, this study demonstrates that the use of multimedia flashcards in teaching letter recognition significantly improved student engagement, motivation, and academic achievement in early childhood literacy. The experimental group showed better results in letter recognition, phonemic awareness, and retention of knowledge compared to the control group. These findings suggest that multimedia tools can be an effective way

to enhance early literacy instruction, making learning more interactive and enjoyable for young students. The positive outcomes highlight the importance of incorporating multimedia in early childhood education to foster a strong foundation for literacy development

DISCUSSION

This study aimed to evaluate the effectiveness of using multimedia flashcards in enhancing early literacy skills, specifically letter recognition, for students at RA Darul Ulum. The findings from the pre- and post-assessments, as well as classroom observations, indicated that the use of multimedia tools significantly improved the students' ability to recognize letters, associate them with sounds, and apply these skills in reading and writing. The discussion focuses on the various factors contributing to the success of the multimedia approach, the challenges faced, and implications for future practices in early childhood education.

First, it is important to consider the positive impact of multimedia flashcards on student engagement. The results from classroom observations revealed that students in the experimental group, who used multimedia flashcards, were more engaged and enthusiastic about learning letter recognition. The interactive nature of multimedia, such as the use of images, sounds, and colors, created a dynamic learning environment that captured students' attention. This is consistent with previous studies that have shown that multimedia tools, when used effectively, can significantly enhance student engagement, especially for young learners.

The experimental group showed a significant increase in student participation. The use of multimedia flashcards allowed students to actively engage with the material, rather than passively listening to the teacher. The interactive aspects of the flashcards, such as matching letters with images and repeating sounds, encouraged students to take an active role in the learning process. Teachers in the experimental group reported that students were more likely to volunteer answers, ask questions, and express their thoughts during lessons. This shift from passive to active participation is essential for fostering a deeper understanding of literacy concepts.

Another key finding was the improvement in letter recognition among the experimental group. The post-assessment results showed that students who were taught using multimedia flashcards demonstrated a significantly higher level of proficiency in recognizing and recalling letters compared to the control group. This finding highlights the effectiveness of multimedia tools in supporting early literacy development. By providing students with visual, auditory, and interactive cues, multimedia flashcards helped reinforce the connection between letters and sounds, making the learning process more memorable and effective.

The integration of phonemic awareness into the multimedia flashcards also contributed to the improvement in literacy skills. In addition to recognizing letters, students in the experimental group were able to connect the sounds of the letters with their corresponding phonemes. This was evident in the post-assessment, where students who had used the multimedia flashcards were more proficient at associating letters with their sounds compared to the control group. Phonemic awareness is a critical skill for early readers, as it helps children understand how letters and sounds work together to form words. The multimedia flashcards, which incorporated sound, image, and repetition, provided an effective way to teach this skill.

One of the strengths of multimedia tools, such as the flashcards used in this study, is their ability to cater to various learning styles. Students in the experimental group had different learning preferences, with some being more visual learners, others more auditory, and still others benefiting from kinesthetic learning. Multimedia flashcards offered a combination of visual, auditory, and tactile learning experiences, allowing students to engage with the material in the way that suited them best. This is in line with

research that suggests multimedia can support diverse learning styles, making it a powerful tool for inclusive education.

The repetitive nature of the multimedia flashcards also played a crucial role in improving students' retention of letter recognition skills. Students in the experimental group had the opportunity to repeatedly engage with the material, which reinforced their learning. This kind of repetition is important for young learners, as it helps solidify the connection between letters and sounds. Teachers noted that students were more confident in recognizing letters and sounds after completing the multimedia-based activities. The repetitive exposure to the letters through multimedia tools helped reinforce the learning process and led to better long-term retention.

While the experimental group showed significant improvements in letter recognition, student motivation was another area where multimedia flashcards had a noticeable impact. The motivation survey conducted before and after the study revealed that students in the experimental group were more motivated to engage in literacy activities. Many students reported that they enjoyed the multimedia activities, particularly the interactive features such as sound and image matching. The visual and auditory components of the flashcards made the lessons more enjoyable, which is important for maintaining students' interest in learning. Motivation is a key factor in academic success, and the multimedia tools helped foster a positive attitude toward learning literacy.

In contrast, students in the control group, who continued with traditional methods, showed less enthusiasm for the subject. Teachers observed that students in the control group were more passive and less motivated to engage with the lesson. This highlights the importance of using dynamic and engaging teaching methods to maintain students' interest, especially when teaching foundational skills such as letter recognition.

Despite the overall success of the multimedia approach, there were challenges in implementing multimedia flashcards in the classroom. One challenge was ensuring equal access to multimedia resources for all students. Some students in the experimental group faced difficulties in interacting with the multimedia tools due to limited access to devices or unreliable internet connections. To address this, teachers implemented a rotating station system, where students had the opportunity to use the multimedia tools in small groups. While this strategy ensured all students had access, it was time-consuming and limited the amount of time each student spent with the multimedia tools.

Teacher preparation and training were also important factors in the success of the multimedia-based lessons. Teachers in the experimental group received training on how to effectively use multimedia flashcards in their lessons. The training focused on how to incorporate multimedia into existing lesson plans, how to encourage active student participation, and how to use the tools to support different learning styles. Teachers reported that the multimedia flashcards were easy to use once they became familiar with the tools. However, there was some initial hesitation, especially from teachers who were not accustomed to using digital tools in the classroom. This underscores the importance of providing adequate professional development for teachers when implementing new educational technologies.

The teacher feedback collected throughout the study was overwhelmingly positive, with many teachers noting that the multimedia tools provided an effective way to engage students and enhance learning. Teachers observed that the multimedia flashcards allowed students to interact with the material in ways that traditional methods could not. The flexibility of the multimedia tools also allowed teachers to adapt the lessons based on the students' progress, providing a more personalized learning experience. This level of adaptability is one of the key advantages of using multimedia in the classroom.

Despite the positive outcomes, one limitation of the study was its short duration. The intervention lasted only four weeks, which may not have been long enough to observe the full long-term effects of multimedia flashcards on literacy skills. Future studies could extend the intervention period to assess whether the improvements in letter recognition and phonemic awareness are sustained over time. Additionally, longer-term studies could

explore how multimedia tools impact other aspects of literacy development, such as word recognition, spelling, and reading comprehension.

Another limitation was the small sample size, which may not be representative of all early learners. The study was conducted with a relatively small number of students from a single institution, which limits the generalizability of the findings. Future research could include a larger and more diverse sample of students from different schools or regions to better understand the broader impact of multimedia flashcards on early literacy development.

Furthermore, while the study focused on letter recognition, there are other aspects of literacy that could benefit from the use of multimedia tools. Future research could explore how multimedia can support the development of other literacy skills, such as reading fluency, comprehension, and writing. It would also be valuable to investigate how multimedia can be integrated into other subjects to promote cross-curricular learning.

The findings of this study suggest that multimedia tools, such as flashcards, can be a highly effective way to teach early literacy skills. The multimedia flashcards used in this study not only improved letter recognition but also engaged students more actively in the learning process. The positive effects on engagement, motivation, and academic achievement observed in the experimental group highlight the importance of incorporating technology into early childhood education.

The study also underscores the potential of multimedia to support diverse learning needs. By catering to different learning styles and providing multiple forms of input, multimedia tools can make learning more accessible and effective for all students. For example, visual learners benefited from the images on the flashcards, auditory learners engaged with the sounds, and kinesthetic learners were involved in interactive activities. This multimodal approach to learning helps ensure that all students have the opportunity to succeed.

In conclusion, the results of this study provide strong evidence that multimedia flashcards are an effective tool for improving early literacy skills in letter recognition. The use of multimedia in the classroom promotes active engagement, enhances motivation, and improves academic performance, making it a valuable resource in early childhood education. The findings suggest that multimedia tools should be incorporated into early literacy programs to create more interactive and engaging learning experiences for young children.

Ultimately, the integration of multimedia into the curriculum not only supports literacy development but also prepares students for the future, where digital literacy will be an essential skill. The success of this study indicates that multimedia can play a key role in shaping the future of education, providing students with the tools they need to succeed academically and in life.

CONCLUSION

In conclusion, this study demonstrates that the use of multimedia flashcards significantly enhances early literacy skills, particularly in letter recognition, for students at RA Darul Ulum. The experimental group, which engaged with multimedia flashcards, showed substantial improvements in recognizing letters and associating them with their corresponding sounds. The post-assessment results clearly indicate that multimedia tools can facilitate a deeper understanding of letter recognition, bridging the gap between recognizing individual letters and understanding their use within words. The study also highlighted that multimedia flashcards foster student engagement and motivation. Students in the experimental group were not only more engaged during lessons but also expressed greater enthusiasm for learning literacy skills. The interactive nature of the multimedia tools captured their attention and made learning more enjoyable, which is critical for young learners who may struggle with maintaining focus during traditional lessons. Furthermore, the repetitive nature of the multimedia flashcards played a

significant role in reinforcing letter recognition. By offering students the opportunity to engage with letters repeatedly in a multisensory way, the flashcards helped improve retention and understanding. This repetition, paired with the visual and auditory elements of the multimedia, reinforced the connection between letters and sounds, a foundational component of early literacy. Additionally, the study demonstrated the flexibility of multimedia tools in accommodating different learning styles. The combination of visual, auditory, and interactive components in the multimedia flashcards allowed students to engage with the material in a way that suited their individual learning preferences. This adaptability helped ensure that all students, regardless of their learning style, could benefit from the lessons and improve their literacy skills.

Despite the positive outcomes, the study also encountered some challenges, particularly related to access to technology and the short duration of the intervention. Some students faced difficulties in interacting with the multimedia tools due to limited access to devices or unreliable internet connections. Additionally, the four-week intervention period may not have been sufficient to observe long-term impacts on literacy development. Future studies with longer durations and larger sample sizes would provide more comprehensive data on the long-term effectiveness of multimedia in early childhood education. Based on the findings, it is recommended that RA Darul Ulum continue to incorporate multimedia tools like flashcards into their early childhood education curriculum. These tools have proven to be effective in engaging students, enhancing literacy skills, and fostering a positive attitude toward learning. Furthermore, the study suggests that expanding the use of multimedia in other areas of literacy education, such as word recognition and reading fluency, could further improve student outcomes. In conclusion, the findings of this study provide strong evidence that multimedia flashcards are a valuable resource in early literacy instruction. By making learning more interactive and enjoyable, multimedia flashcards have the potential to significantly enhance the learning experience for young children, laying a strong foundation for their future academic success.

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