

The Effect of Flashcard Media on Reading Literacy in Children Aged 5-6 Years: A Case Study at TK Aisyiyah 7 Ngembat Padas

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Abstract

This study aims to determine the effect of flashcard media on early reading skills among children aged 5–6 years at TK Aisyiyah Bustanul Athfal Ngembat Padas. A quantitative approach with a One-Group Pretest–Posttest design was applied, involving 15 kindergarten children from Group B as research participants. Data were collected through observation, performance tests, and documentation, and analyzed using the Wilcoxon Signed-Rank Test since the data did not meet the assumption of normality. The findings revealed a significant improvement in early reading performance following the flashcard intervention. The mean score increased from 15.33 in the pretest to 19.87 in the posttest, indicating an improvement of 29.57%. The statistical result of Asymp. Sig. (2-tailed) = 0.0006 (< 0.05) confirms that flashcard media positively and significantly affects children's early reading proficiency. Therefore, flashcards can be recommended as an engaging, effective instructional medium for fostering foundational literacy in early childhood education.

Keywords: flashcards, early reading skills, early childhood literacy, early childhood education

Introduction

Education is a foundational requirement for all individuals, with its initiation being crucial during early childhood. Early Childhood Education (ECE) plays a vital role in delivering optimal stimulation across all developmental domains, particularly language development, which is recognized as the bedrock for effective communication and cognitive competence (Ministry of Education and Culture, 2014). The period from birth to six years is often termed the Golden Period, a phase of rapid developmental growth that necessitates appropriate stimulation through meaningful learning activities (Arta & Anggraeni, 2025). Language acquisition represents one of the most critical dimensions within the ECE curriculum. This domain includes receptive and expressive competencies that encompass listening, speaking, and, critically, the development of early reading skills. Early reading ability serves as an essential precursor to later academic success, extending beyond the mechanical recognition of letters and words to involve the comprehension of linguistic symbols and meaning (Sarwiti, 2025). Therefore, literacy instruction for young learners must be implemented through pedagogical approaches that are play-based and engaging, promoting active participation and sustained learning motivation.

Despite this recognized importance, a significant number of children aged 5–6 years continue to face challenges in recognizing letters and blending them into syllables. This difficulty is frequently attributed to the pervasive use of conventional instructional methods, which typically rely on repetitive writing and worksheet-based exercises that often fail to capture and maintain children's interest. Such monotonous practices can diminish motivation and restrict literacy engagement. This highlights a compelling need for innovative learning media that are developmentally appropriate, stimulating, and aligned with young children's natural inclination for learning through play and concrete experiences. The development of early childhood literacy in the digital era necessitates teacher creativity in providing diverse learning media. This aligns with the requirements of 21st-century teaching competencies, where educators must possess proficient digital literacy and the ability to utilize technology to provide appropriate stimulation tailored to children's characteristics (Wardhani et al., 2023). The implementation of visual media, such as flashcards, serves as a practical solution to bridge these educational needs.

Among the various available instructional resources, flashcards have been widely acknowledged as an effective medium for supporting early reading instruction. Flashcards function as visual learning aids by displaying letters, words, and corresponding pictures, thereby helping children to form associations between linguistic symbols and visual representations. Recent technological advances have further expanded their utility into digital formats, such as e-flashcards and Augmented Reality (AR) flashcards, which are increasingly adopted in ECE settings. Empirical evidence supports the

efficacy of these tools; for example, Rena, Suarjana, and Wirabrata (2023) demonstrated that animated e-flashcards significantly improve pre-reading abilities. Consequently, the integration of innovative and interactive media into literacy instruction is vital for strengthening children's motivation and accelerating their acquisition of early reading skills.

The implementation of interactive learning media aims to optimize children's potential through active and engaging educational activities. In the context of early childhood education, stimulation provided through game-based media not only sharpens cognitive abilities but also fosters the development of independence and fundamental life skills from an early age (Wardhani & Katoningsih, 2022). Consequently, flashcards serve as an effective tool to enhance children's focus and interest in reading without imposing an excessive mental burden. In consideration of these factors, this study aims to analyze the effect of utilizing flashcard media on the reading ability of children aged 5–6 years at TK Aisyiyah Bustanul Athfal Ngembat Padas. The research is expected to contribute empirical evidence supporting the development of media-based instructional strategies that are harmonized with the learning characteristics of early childhood learners and fulfill the literacy competencies outlined in the Standar Tingkat Pencapaian Perkembangan Anak (STPPA).

Theoretical Review

Early Reading Skills in Early Childhood

Early reading skills are integral components of emergent literacy, referring to children's initial abilities to recognize letters, associate graphemes with phonemes, decode syllables, and comprehend simple vocabulary. These foundational competencies serve as strong predictors of future literacy success and academic achievement, extending beyond the mechanical recognition of letters to involve the comprehension of linguistic symbols. Their development is largely influenced by learning environments, instructional strategies, and the availability of supportive literacy media that accommodate young learners' cognitive characteristics. Consequently, literacy instruction for young learners must be implemented through pedagogical approaches that are play-based and engaging, promoting active participation and sustained learning motivation. The integration of innovative and interactive media, such as flashcards, serves as a practical solution to bridge educational needs by helping children form associations between linguistic symbols and visual representations. Stimulation provided through such game-based media not only sharpens cognitive abilities but also fosters the development of independence and fundamental life skills from an early age. Furthermore, effective early childhood education must be capable of optimizing children's potential through active activities that facilitate the transition from abstract symbols to meaningful linguistic understanding. By combining attractive aesthetics with focused content, these tools strengthen phonemic awareness and accelerate the internalization of early reading concepts. Ultimately, a well-designed literacy environment ensures that children achieve the expected developmental milestones outlined in the national standards.

Characteristics of Children Aged 5–6 in Early Reading Instruction

Children aged 5–6 years typically demonstrate a heightened capacity for visual processing, symbolic understanding, and increased attention span. At this stage, learning occurs most effectively when children engage with concrete, visually stimulating, and play-oriented materials (Hofmann & Müller, 2022). Instructional approaches that lack variety and interactivity may diminish children's motivation and participation (Kim & Sy, 2022). Thus, early reading programs must incorporate developmentally appropriate tools that promote active exploration, enjoyment, and cognitive involvement. Effective early childhood education must be capable of optimizing children's potential through active and engaging learning activities. Stimulation provided via interactive media not only sharpens cognitive abilities but also fosters the development of independence and fundamental life skills from an early age (Wardhani & Katoningsih, 2022).

Instructional Media in Early Literacy

Instructional media encompass a range of tools and resources designed to facilitate the transmission of learning content and improve educational interaction. The integration of multimedia-based instructional aids has expanded opportunities for differentiated and interactive learning experiences, allowing for more flexible and adaptive forms of instruction. In the context of early literacy, visual media are particularly beneficial since they provide concrete representations that support the internalization of symbolic language concepts. Recent technological advances have further broadened the spectrum of available media, encompassing digital platforms and interactive multimedia that enhance children's engagement. These tools serve as a bridge for children to transition from abstract symbols to meaningful linguistic understanding through systematic visual repetition. By utilizing these diverse resources, educators can effectively capture and maintain children's interest, which is often lost in conventional instructional methods. Ultimately, the strategic use of instructional media optimizes a child's potential by fostering independence and fundamental life skills from a very early age. This approach ensures that literacy instruction remains play-based and aligned with the natural developmental characteristics of young learners.

Flashcards as Media for Early Reading Development

Flashcards are visual learning tools that display letters, images, or words to strengthen children's recognition and recall through repetitive exposure (Morrison, Lee, & Walker, 2021). Modern flashcards are frequently designed with vibrant visuals and simplified text to enhance attention and comprehension (Adegoke & Olatoye, 2023). Technological advancements have introduced digital flashcards, including animated and audio-enhanced variations, which offer greater engagement and adaptability to learners' needs. These interactive features have been shown to improve phonemic awareness, decoding skills, and overall motivation in literacy activities (Hussain, Ali, & Imran, 2022; Arthaud & Emery, 2021). Consequently, flashcards are widely recognized as a flexible and effective medium for supporting children's early reading development across diverse learning contexts.

Definition of Instructional Media

Instructional media are defined as tools, devices, or resources used to transmit messages and information within the learning process, thereby facilitating effective educational interactions. Advances in technology have broadened the spectrum of available instructional media, encompassing visual aids, digital platforms, and interactive multimedia that support more flexible and adaptive forms of instruction. These tools are crucial in early childhood education as they transform abstract concepts into concrete representations that are more easily understood by young children. Beyond delivering information, instructional media function to increase student engagement and motivation through diverse learning experiences. In the context of literacy, appropriate media can significantly accelerate the mastery of language symbols and early reading skills. The integration of technology, such as the use of e-flashcards, provides a new dimension of more responsive and enjoyable learning interactions. Thus, selecting innovative media not only simplifies the teacher's task but also optimizes the child's overall cognitive development potential. This aligns with 21st-century teaching competencies that require teacher creativity in utilizing technology for appropriate developmental stimulation.

Scientific Journal Style Translation

Flashcards are a type of visual learning medium presented in the form of cards containing images, letters, symbols, or key words that function as visual stimuli to help children recognize concepts more efficiently. The design of contemporary flashcards has become increasingly engaging through the use of bold color combinations, clear illustrations, and simplified text, all of which help enhance children's attention and comprehension during early reading activities (Adegoke & Olatoye, 2023). Recent studies indicate that the integration of these visual elements significantly enhances children's visual memory and supports their ability to identify letters, sounds, and simple words during the early stages of literacy development (Morrison, Lee, & Walker, 2021). By combining attractive aesthetics with focused content, flashcards serve as an effective bridge for children to transition from abstract symbols to meaningful linguistic understanding.

Advancements in technology have also led to the development of more innovative forms of flashcards, expanding their use beyond printed materials to include digital formats such as digital flashcards and e-flashcards. These digital media provide a more interactive learning experience through the incorporation of animations, audio features, and other responsive elements, which have been shown to significantly improve children's motivation and literacy outcomes (Hussain, Ali, & Imran, 2022; Arthaud & Emery, 2021). In the context of early childhood education, flashcards are regarded as highly effective instructional tools because they integrate play-based elements with systematic visual repetition. This comprehensive approach supports children in recognizing letters, understanding letter-sound relationships, and reading simple words in a manner that is both enjoyable and meaningful (Yeung, 2023).

Flashcards as Instructional Media for Early Reading Development

1. Flashcards are instructional tools in the form of cards Flashcards promote phonemic awareness through systematic visual repetition (Hussain et al., 2022).
2. Digital flashcards improve children's engagement and learning outcomes more effectively than conventional formats (Adegoke & Olatoye, 2023).
3. The incorporation of animation, audio, and illustrations in e-flashcards accelerates the internalization of early reading concepts (Arthaud & Emery, 2021).

Displaying letters, words, or images that serve as visual stimuli to strengthen children's memory and comprehension. Research indicates that flashcards are effective in enhancing letter recognition, understanding letter-sound correspondences, and reading simple words (Morrison et al., 2021). International studies further demonstrate that flashcards are regarded as a flexible and pedagogically relevant medium for supporting early literacy development in young children.

Alignment of Flashcards with STPPA Standards

According to the *Standar Tingkat Pencapaian Perkembangan Anak (STPPA)*, literacy indicators for children aged 5–6 years include letter recognition, phonological awareness, syllable reading, and decoding of simple words. Flashcards directly reinforce these indicators through repeated visual and verbal reinforcement, making literacy instruction more engaging and meaningful. Thus, flashcard implementation is aligned with national developmental standards and can effectively support children in achieving expected literacy milestones in early childhood education settings.

RESEARCH METHOD

The research approach employed by the researcher is a quantitative approach, utilizing an experimental research type. The specific experimental design used is a pre-experimental design. A pre-experimental design is defined as a design that does not yet constitute a true experiment. The one-group pre-test post-test design was selected, where the sample is not randomly selected to investigate the independent and dependent variables. The most appropriate research design utilized in this study is the pre-experimental design with the One-Group Pretest–Posttest model. This design involves a single group of participants whose performance is measured before the treatment (pretest) and after the treatment (posttest). Bierer (2025) explains that the one-group pretest–posttest is a valid pre-experimental design used to assess changes following an intervention, particularly in research situations where the formation of a control group is not feasible. This design solely involves one participant group, which is measured before the treatment (pretest) and after the treatment (posttest), with no comparison group. This approach is relevant for use in preliminary evaluative research or for trials of learning media in early childhood education, where randomization and the establishment of a control group are challenging to perform. Consequently, there is no control group in this design, and the research findings are obtained from comparing the scores within the same group before and after the treatment. The Pretest-Posttest serves the function of measuring the research effectiveness. Thus, no control group or comparison group is used as a measure.

The design is represented as follows:

$$O1 \ X \ O2 \quad (1)$$

Notes:

- {O1} = Initial measurement prior to treatment (pretest)
- {X} = Treatment (utilization of flashcard media)
- {O2} = Measurement subsequent to treatment (posttest)

This design was chosen because it is methodologically appropriate for preliminary exploratory studies or investigations into the efficacy of learning media within the Early Childhood Education (PAUD) setting where participant randomization and control group establishment are challenging. With the non-inclusion of a control group, this design is considered methodologically appropriate for preliminary exploratory studies or investigations into the efficacy of learning media within the Early Childhood Education (PAUD) setting (Snyder, 2019; Cahyono, 2024). Furthermore, this model aligns with the practical and ethical characteristics of the PAUD context, where participant numbers are often limited, and researchers face both ethical and practical challenges in conducting subject randomization (Fraenkel et al., 2020). Consequently, the implementation of the One-Group Pretest–Posttest Design in this research is anticipated to furnish a robust empirical account regarding the influence of flashcard media on the reading proficiency of 5–6-year-old children in Group B at TK Aisyiyah 7 Bustanul Athfal Ngembat Padas.

POPULATION AND SAMPLE

The population for the current study is the early childhood education institution, TK Aisyiyah 7 Ngembat Padas. Sampling Technique and Sample The sampling technique employed in this research is purposive sampling. This technique involves deliberately selecting members from the population based on specific research objectives. The sample for the study is specifically the students in Group B at TK Aisyiyah 7 Ngembat Padas, Kwangen Kidul, Ngembat Padas, Gemolong District, Sragen Regency, Central Java. The total sample size comprises 15 students. This single, intact group will serve as the unit of observation for the One-Group Pretest–Posttest design.

DATA COLLECTION TECHNIQUES

The data collection techniques employed in this study are as follows:

1. Observation

According to Sugiyono (2017), observation is defined as a data collection method that may encompass the examination of human behavior, work processes, natural phenomena, and respondents. In the context of this research, the investigator can implement direct observation to ascertain empirical facts in the field, particularly by monitoring the institution before and after the application of flashcards to enhance early reading proficiency among children in Group B.

2. Test

A test serves as an instrument or method applied to identify or measure specific attributes under structured conditions, based on established procedures and guidelines. In this study, the test utilized is an evaluation tool in the form of an early reading ability assessment sheet, aimed at evaluating the development of basic reading skills during the learning process assisted by flashcard media. This evaluation is conducted concurrently with learning activities. The aspects assessed in the instrument align with indicators of language development for children aged 5-6 years, in the form of steps toward literacy. This includes the creation of a grid table for the research instrument on the influence of flashcard media on children's reading literacy, and a rubric table for assessing results before and after the intervention.

3. Documentation

Documentation, as defined by Sugiyono (2017), refers to the record of past events, which can take the form of writings, pictures, or monumental works created by individuals. In the context of this research, the documentation method is applied as a data collection technique to support the research activities involving Group B at TK Aisyiyah 7 Ngembat Padas. This method is utilized to systematically record all activities from the commencement of the study until its completion.

Research Instruments

According to Wirawan (2020), research instruments constitute a set of tools employed by researchers to systematically observe, measure, and record data pertaining to the phenomena under investigation. The primary emphasis of this definition resides in objectivity, specifically that the instruments must be capable of yielding data devoid of researcher bias. The instruments utilized in this study are derived from the STPP (*Standar Tingkat Pencapaian Perkembangan*) for language and literacy development in children aged 5–6 years. These instruments are structured in the form of a developmental achievement grid and an assessment rubric, which are used to evaluate children's reading literacy skills. The assessment employs a checkmark (✓) if the specified criteria are met and a cross (X) if the criteria are not met, as presented in **Table 1**, which outlines the research instrument grid for measuring the effect of flashcard media on children's reading literacy.

Table 1. Grid for Research Instrument: The Effect of Flashcard Media on Children's Reading Literacy (Ages 5–6)

No	Statement / Indicator	Assessment Focus	Score
1	Identifying letters in the word wortel	Letter recognition	✓ / X
2	Identifying letters in the word tomat	Letter recognition	✓ / X
3	Identifying letters in the word terong	Letter recognition	✓ / X
4	Mentioning initial letter of wortel	Initial sound	✓ / X
5	Mentioning initial letter of tomat	Initial sound	✓ / X
6	Mentioning initial letter of terong	Initial sound	✓ / X
7	Grouping pictures based on same initial letter	Letter discrimination	✓ / X
8	Grouping pictures (tomat–timun)	Letter discrimination	✓ / X
9	Grouping pictures (wortel–wuluh)	Letter discrimination	✓ / X
10	Writing initial letter of wortel	Early writing	✓ / X
11	Writing initial letter of tomat	Early writing	✓ / X
12	Writing initial letter of terong	Early writing	✓ / X
13	Reading own written name	Word recognition	✓ / X
14	Pointing to own name	Word recognition	✓ / X
15	Identifying name when teacher points	Word recognition	✓ / X
16	Free writing of child's name	Early writing	✓ / X
17	Copying name from board	Early writing	✓ / X
18	Writing name on lined paper	Early writing	✓ / X
19	Explaining meaning of biji	Vocabulary	✓ / X
20	Explaining meaning of daun & akar	Vocabulary	✓ / X
21	Explaining meaning of tangkai & pucuk	Vocabulary	✓ / X

Data Analysis Technique

This study employed a quantitative data analysis approach using non-parametric statistical methods, considering that the measurement data obtained from the early reading ability assessment sheets were ordinal in nature. The research design used was a One-Group Pretest–Posttest Design, therefore the most appropriate data analysis technique was the Wilcoxon Signed-Rank Test. The Wilcoxon test was applied to evaluate differences between two paired samples from the same group, specifically by comparing the pretest scores (before the intervention) and the posttest scores (after the intervention). This test was chosen because the data did not meet the assumption of normality or were ordinal in scale (Sugiyono, 2010). Through the Wilcoxon test, it can be determined whether the application of flashcard media has a significant effect on improving the early reading literacy skills of children aged 5–6 years. The following is an example of a supporting . The Wilcoxon test was specifically applied to compare the pretest scores (baseline measurement) and posttest scores (post-intervention measurement). This test was selected because the data did not meet the assumption of normality—as verified by the Shapiro–Wilk Test—and were ordinal in scale. Statistical analysis was conducted using SPSS version 22. The effectiveness of the flashcard media was determined by the significance value, where an Asymp. Sig. (2-tailed) < 0.05 indicates a significant positive effect on the children's early reading literacy skills.

Results and Discussion

In testing the research hypothesis, a pretest was conducted prior to the implementation of the treatment. The pretest activity involved providing children with worksheets related to early reading skills. During the pretest, several children demonstrated enthusiasm and active participation, while others appeared less engaged or easily bored. Based on the pretest results of 15 children in the class, it was observed that nine children showed high interest and enjoyment during the activity. Following the pretest, the researcher implemented the treatment using flashcard media over three learning sessions. In the final session, a posttest was administered using similar worksheets to assess changes in the children's early reading abilities.

Subsequently, data analysis was carried out. The first stage of analysis involved conducting a normality test to determine the distribution of the data. Since the number of participants was fewer than 30 and the data were found to be not normally distributed, the researcher employed a non-parametric statistical approach using the Wilcoxon Signed-Rank Test with the assistance of SPSS version 22. The following section presents the pretest and posttest results of group B students at TK Aisyiyah 7 Ngembat Padas. The following table presents a comparison of the mean scores of children's language abilities before and after the treatment (Table 3):

Table 2. Early Reading Ability Scores of Children Before (Pretest) and After (Posttest) the Implementation of Flashcard Media

Description	Mean Score	Description
Before treatment (Pretest)	15.33	Children's initial early literacy ability
After treatment (Posttest)	19.87	Literacy ability after the implementation of flashcard media
Mean difference	4.53	An improvement of 29.57% was observed

The results above indicate an increase in the mean score of children's language and early literacy abilities after the use of flashcard media. This improvement demonstrates that flashcards had a positive impact on children's skills in recognizing letters, syllables, and simple words. Thus, it can be concluded that learning activities utilizing flashcard media are effective in enhancing the early reading ability of Group B children at TK Aisyiyah 7 Ngembat Padas.

Data Analysis

To examine the significance of the difference between conditions before (pretest) and after (posttest) the implementation of flashcard media—characteristic of the one-group pretest–posttest design—a non-parametric data analysis technique, namely the Wilcoxon Signed-Rank Test, was employed. This test was selected because the data were obtained from two related (paired) groups drawn from the same sample. In addition, the Wilcoxon test serves as an alternative to the paired sample t-test when the data are not normally distributed.

1. Normality Test

The normality test was conducted to determine whether the sample data were normally distributed. Prior to hypothesis testing, the normality of the data was examined using the Shapiro–Wilk Test, as the number of participants was fewer than 50 children. The purpose of this test was to verify whether the data followed a normal distribution or not (Table 4).

Table 3. Normality Test Result

Variable	Statistic	Sig.
Pretest	0.764	0.001
Posttest	0.836	0.011

Based on the results presented in the table above, the significance values for the pretest (0.001) and posttest (0.011) are both less than 0.05. This indicates that the data are not normally distributed, and therefore, the hypothesis testing cannot be conducted using parametric methods. Consequently, the analysis was continued using a non-parametric statistical approach, namely the Wilcoxon Signed-Rank Test.

2. Wilcoxon (Wilcoxon Matched-Pairs Test)

This technique was employed to test the hypothesis using the Wilcoxon Signed-Rank Test, a non-parametric method designed to determine whether there is a significant difference between the pretest and posttest results following the implementation of flashcard media in learning activities. The comparison of pretest and posttest scores, including positive ranks, negative ranks, and ties, is presented in Table 5 (Ranks Table), which summarizes the direction and magnitude of score changes after the intervention.

Table 4. Ranks Table

Type of Change	N	Sum of Ranks	Description
Positif (+)	15	120.00	Posttest > Pretest
Negatif (-)	0	0.00	Posttest < Pretest
Ties (No change)	0	-	Posttest = Pretest

Based on the table above, all 15 children showed an increase in their scores after participating in learning activities using flashcard media. None of the participants experienced a decline or maintained the same score, indicating consistent improvement across all respondents. The results of the Wilcoxon Signed-Rank statistical test, including the test statistic and significance value, are presented in Table 6 (Table of Statistical Test), which provides empirical evidence regarding the effectiveness of flashcard media on children’s reading literacy development.

Tabel 5. Table of Statistics Test.

Statistic	Value
Sum of Positive Ranks	120.00
Sum of Negative Ranks	0.00
Z	-3.92
<i>Asymp. Sig. (2-tailed)</i>	0.0006

The obtained significance value (Asymp. Sig.) of 0.0006, which is less than 0.05, indicates that there is a statistically significant difference between the pretest and posttest results. In other words, the application of flashcard media has a meaningful and positive effect on improving children’s early reading ability. This finding confirms that flashcard-based learning activities effectively enhance children’s literacy readiness, particularly in recognizing letters, syllables, and simple words.

3. Interpretation of Results

The results of the Wilcoxon Signed-Rank Test revealed that the Asymp. Sig. (2-tailed) value was 0.0006, which is lower than the significance threshold of 0.05. This finding indicates a statistically significant difference between the early literacy scores of children before and after the implementation of flashcard-based learning. Accordingly, the null hypothesis (H_0) is rejected, and the alternative hypothesis (H_1) is accepted, confirming that the use of flashcard media has a significant positive effect on the early literacy skills of children aged 5–6 years.

Discussion

This study was conducted at TK Aisyiyah 7 Ngembat Padas, involving 15 children aged 5–6 years from Group B as research participants. The main objective of this study was to examine the effect of flashcard media on improving early reading skills among young children. Prior to the intervention, a pretest was administered to assess the children's baseline reading abilities. Observations during the pretest revealed that most children had limited recognition of letters, letter sounds, and simple word decoding. Many of them still required teacher assistance to identify the initial letter of a word and to associate it with relevant images. These findings indicate that the children's early reading ability was still at a low developmental level.

The pretest consisted of three types of tasks:

1. Drawing lines between pictures with identical initial letters,
2. Identifying letter symbols from A to Z, and
3. Reading simple words corresponding to pictures.

The mean pretest score was 15.33, suggesting that most children had not yet developed sufficient mastery in recognizing letters and syllables. After completing the pretest, the researcher implemented a learning intervention using flashcard media over the course of three sessions. The flashcards used were 25×30 cm illustrated cards, designed to combine visual imagery and alphabetic symbols. These media served as visual aids to enhance children's memory and recognition of letters, sounds, and words through repeated exposure. According to Indriana (2011), flashcards are visual learning tools that convey a sequence of messages through pictures on the front side and written information on the back. This medium effectively integrates visual and verbal stimuli, allowing children to learn through engaging repetition and active visual association. Following the intervention, a posttest was administered to re-evaluate the children's reading ability. The results indicated that the mean score increased to 19.87, reflecting a gain of 4.53 points (approximately 29.57%). This improvement demonstrates a significant enhancement in children's early reading performance after exposure to flashcard-based learning. Children appeared more enthusiastic, confident, and capable of recognizing letters and reading simple words.

The statistical analysis using the Wilcoxon Signed-Rank Test supported these findings. The test yielded a significance value of $\text{Asymp. Sig. (2-tailed)} = 0.0006 < 0.05$, indicating a statistically significant difference between pretest and posttest scores. Therefore, the null hypothesis (H_0) was rejected, and the alternative hypothesis (H_1) was accepted, confirming that flashcard media significantly enhanced early reading skills among Group B children at TK Aisyiyah 7 Ngembat Padas. These results align with Piaget's theory of cognitive development, which posits that children aged 5–6 years are in the preoperational stage, where learning occurs most effectively through visual, concrete, and interactive activities. Visual aids such as flashcards provide meaningful learning experiences by helping children connect written symbols (letters) with concrete representations (pictures).

Furthermore, the findings are consistent with previous studies. Morrison, Lee, and Walker (2021) found that picture-word flashcards significantly improve early literacy skills, particularly letter recognition and word formation. Similarly, Hussain, Ali, and Imran (2022) reported that visual flashcards strengthen phonemic awareness and visual memory, enabling children to better grasp the relationship between letters and sounds. Additionally, the current study revealed that flashcard-based learning fosters greater engagement and motivation among children. They exhibited sustained focus and enjoyment during reading activities, as flashcards are visually appealing and promote active participation. This observation is in line with Yeung (2023), who emphasized that repeated visual stimulation in early reading instruction reinforces cognitive connections between symbolic representation and linguistic meaning.

Overall, the results of this study demonstrate that flashcard media serve as an effective instructional tool for improving early reading abilities among young learners. Flashcards not only facilitate the introduction of letters and words but also promote an enjoyable and interactive learning experience that supports phonological and visual processing. In conclusion, the implementation of flashcard-based learning at TK Aisyiyah 7 Ngembat Padas had a positive and significant impact on the reading development of children aged 5–6 years. The improvement was reflected not only in test scores but also in children's increased participation, enthusiasm, and confidence during learning. Therefore, flashcard media can be recommended as an innovative and effective learning strategy to support the development of early literacy skills in early childhood education settings.

Conclusion

Based on the results of data analysis, it can be concluded that the implementation of flashcard media had a significant positive effect on improving the early reading ability of Group B children at TK Aisyiyah 7 Ngembat Padas. This conclusion is supported by the comparison between the pretest and posttest results, which showed an increase in the mean score from 15.33 before treatment to 19.87 after the use of flashcards, with a gain of 4.53 points or approximately 29.57%. The analysis conducted using the Wilcoxon Signed-Rank Test produced a significance value of $\text{Asymp. Sig. (2-tailed)} = 0.0006 < 0.05$, indicating that H_0 is rejected and H_1 is accepted. This result confirms that there is a statistically significant difference between the pretest and posttest scores following the application of flashcard-based learning. This demonstrates that flashcard media effectively enhances early literacy skills, encourages enthusiasm, and promotes active participation in reading sessions. Therefore, flashcards are affirmed as an effective and enjoyable alternative learning tool for early literacy development.

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