

Improving The Pre-Reading Ability Of 5-6 Year-Old Children Through The Use Of Digital Storybooks In Al Bayyinah Kindergarten, Cikaran Timur District

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Abstract

Pre-reading skills are fundamental abilities that need to be developed in early childhood as preparation for entering primary education. However, the pre-reading skills of children aged 5–6 years at Al Bayyinah Kindergarten, East Cikarang District, had not developed optimally. This was indicated by the fact that some children still experienced difficulties in recognizing letters and distinguishing letter sounds. This study aimed to improve the pre-reading skills of children aged 5–6 years through the use of digital storybooks. This study employed the Classroom Action Research (CAR) method, which was conducted through several cycles consisting of the stages of planning, action implementation, observation, and reflection. The research subjects were children aged 5–6 years at Al Bayyinah Kindergarten, East Cikarang District. Data were collected through observation, documentation, and assessment of children's developmental progress. The results of the study showed that the use of digital storybooks could improve children's pre-reading skills. The children became more capable of recognizing letter symbols, distinguishing letter sounds, and demonstrating progress in early reading abilities. The use of digital media also helped make the learning process more engaging and effective.

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1. INTRODUCTION

Early childhood is an individual in the age range of 0-6 years who is experiencing a rapid growth and development process. (Widat et al., 2022) This period is called the golden age because it is the stage where a child's brain develops optimally. Brain development reaches approximately 50% by age 4 and increases to 80% by age 8. (Rizqi & Aulia, 2025) Providing appropriate stimulation is essential for optimal language and cognitive development.

Language development in early childhood is closely related to literacy skills. In pre-reading activities, children are invited to learn about letters, sounds, images, and language patterns through interesting activities that are appropriate to the characteristics of early childhood. (Nida Ulfadilah & Setiasih, 2024) This stage is very important because it forms the foundation for children to develop reading skills at the next level.

However, in learning practice in the field, many children still have difficulty in mastering pre-reading skills. (Fadillah & Sugiharti, 2025) This can be seen from the fact that there are still children who have difficulty recognizing letters, are less able to connect sounds with their symbols, and have low interest in reading activities. (Mediana et al., 2020) One of the causes of low reading comprehension is the lack of interest in reading by children

using monotonous methods. (Hayati & Muthia, 2024). In addition, schools have not yet optimally utilized digital media in learning.

The use of digital learning media is an alternative to improve the quality of learning. The implementation of digital media learning certainly relies on the role of educators and parents in achieving learning objectives. (Rusanti et al., 2025) One of the digital learning media to improve pre-reading skills is digital storybooks. (Hardianti et al., 2025). Digital storybooks offer active engagement, attractive visuals, and ease of use. Children can also recognize letters, understand language sounds, and follow the story easily.

Several previous studies have shown that the use of digital media can improve literacy and pre-reading skills in early childhood. (Hardianti et al., 2025) Research shows that digital books can increase children's interest in reading. (Ningrum et al., 2024) Interactive digital media helps children be more active in language learning. In addition, research (Nurjanah & Mukarromah, 2021) has shown that the use of technology in learning can improve the effectiveness of early childhood learning. However, these studies have not specifically examined the use of digital storybooks through a Classroom Action Research approach in children aged 5-6 years at Al Bayyinah Kindergarten, East Cikarang District.

This points to a clear research gap: while previous studies have shown that digital media and digital storybooks can improve children's literacy and language skills (Hardianti et al., 2025; Ningrum et al., 2024; Nurjanah & Mukarromah, 2021), those studies generally measured outcomes through a single test or a one-time intervention and did not examine how the intervention could be iteratively refined based on ongoing reflection. The novelty of the present study lies in its use of the Kurt Lewin Classroom Action Research model to implement digital storybooks through repeated cycles of planning, action, observation, and reflection, so that the medium and teaching strategy are progressively adjusted according to children's actual responses in each cycle. This cyclical, reflective design gives the present study an advantage over prior research: instead of a single snapshot of effectiveness, it provides cycle-by-cycle evidence of how and why children's pre-reading skills develop, which offers more concrete and adaptable guidance for teachers who wish to apply digital storybooks in their own classrooms.

Based on these issues, the use of digital storybooks is expected to be a solution to improve the pre-reading skills of children aged 5-6 years. Through the use of this medium, it is hoped that children will be more interested in recognizing letters and sounds, as well as developing an interest in reading. To determine the effectiveness of this medium, a systematic classroom action plan (CAR) is required, conducted through the stages of planning, observation, and reflection. (Hermina, 2025) This classroom action research was conducted as an effort to improve and enhance the learning process so that the pre-reading abilities of children aged 5-6 years can develop optimally.

Theoretical Study

According to Maria Montessori, pre-reading skills develop through direct experience and early stimulation. (Jubaedah et al., 2024) Children learn to read gradually through activities involving the five senses, the use of concrete media, and a supportive learning environment. According to Jean Piaget, the development of pre-reading skills is related to the cognitive development of children in the pre-operational stage, ages 2-7. (Nasution & Sit, 2024). At this stage, children begin to describe the world with words and pictures. Pre-reading skills are initial skills in recognizing letter symbols and understanding the relationship between letter sounds, which are provided early on with stimulation through activities that involve the five senses, the use of concrete media, and a supportive learning environment according to the child's developmental stage.

Chomsky is known as the initiator of the Nativism Theory, which holds that language is acquired through the talents possessed by children. (Hidayat et al., 2023). Based on Noam

Chomsky's theory, children's language abilities develop naturally from birth through the innate abilities that children have, so environmental stimulation is very important to support language development and reading skills from an early age.

Agenda Setting Theory: Developed by Maxwell McCombs and Donald L. Shaw in 1972, it emphasizes the importance of the media in setting the public agenda. Editors, editorial staff, and broadcasters play a vital role in shaping political realities by selecting and presenting news. **Cultivation Theory (George Gerbner):** This theory, developed in the 1960s, explores the audience's perception of reality. This theory explains how media influences the way people see and understand the reality around them. **Stuart Hall created the theory of Active Reception or Audience Reception in 1973,** explaining how to see the meaning of a media text (print, electronic, internet) by knowing how the character of the media text is read by the audience. (Riskiy & Hapsari, 2022).

One of the digital theories was put forward by Pierre Levy (1990), which is called new media theory. He stated that new media is a theory that discusses the development of conventional media towards digital. (Subria Mamis, 2020) Digital media can be understood as technology-based media that is only used to convey information, influence the way people understand something, and develop from conventional media to more modern and interactive digital media.

2. RESEARCH METHODS

This study employed the Classroom Action Research (CAR) method using Kurt Lewin's model, employing both qualitative and quantitative approaches. The qualitative approach was used to describe the learning process, teacher and student activities, and changes that occurred during the implementation of the action. Meanwhile, the quantitative approach was used to measure the improvement in children's pre-reading skills through observational results expressed as scores and percentages for each research cycle.

Kurt Lewin designed a system that became the basic foundation for various modern PTK models. (Sri Siti, 2010) Kurt Lewin's model was chosen because it has clear, systematic, and easy-to-implement stages in Classroom Action Research. Through a repetitive process of planning, implementing actions, observing, and reflecting, teachers can track learning progress and make gradual improvements. This cycle can be illustrated as follows.

Planning → Action → Observation → Reflection → Re-planning (next cycle)

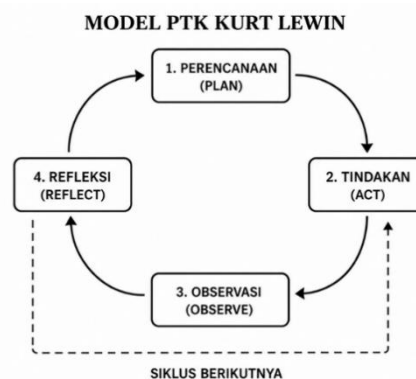


Figure 1: Kurt Lewin's Classroom Action Research Model

The criteria for success of the action are determined if at least 80% of the total number of children achieve the categories of Developing According to Expectations (BSH) and Developing Very Well (BSB). Furthermore, success is also seen from the increase in children's activeness, attention, and enthusiasm during learning activities

using digital storybooks. If the results obtained in the first cycle do not meet the predetermined success indicators, the research will continue in the next cycle by making improvements to the learning process based on the results of the previous reflection. However, if the success indicators have been achieved, the action is declared successful, and the research can be stopped.

The data sources in this classroom action research consist of primary and secondary data sources. The primary data source in this study was 5–6-year-old children at Al Bayyinah Kindergarten, East Cikarang District, who served as the research subjects. The data obtained were children's pre-reading abilities before and after the implementation of digital storybooks. Secondary data sources in this study included classroom teachers, learning documents, observation results, field notes, activity photos, and various documents related to the implementation of learning and the development of children's pre-reading abilities.

The data collection techniques in this study include conceptual definitions and operational definitions, which are explained as follows. In this study, the conceptual definition of each variable is explained as follows. The pre-reading ability variable is the initial skill in recognizing letter symbols and understanding the relationship between letter sounds, which is given early on with stimulation through activities involving the five senses, the use of concrete media, and a supportive learning environment according to the child's developmental stage. Meanwhile, the digital media variable can be understood as a technology-based medium that is only used to convey information, influence the way people understand something, and develop from conventional media to more modern and interactive digital media. The operational definition in this study is the pre-reading learning outcome score of children aged 5–6 years old obtained through observations conducted by teachers and researchers during the learning process using digital storybooks.

The instrument used to collect the pre-reading ability data was an observation sheet developed from the operational definition above, covering the four indicators of recognizing letters, naming letters, understanding story content, and matching pictures with letters, each rated on the four developmental categories (BB, MB, BSH, BSB). The content validity of this instrument was established through expert judgment by early childhood education lecturers and the classroom teacher, who reviewed the indicators for their relevance to the pre-reading ability construct and their appropriateness for children aged 5–6 years before the instrument was used; the indicators were revised based on this expert feedback prior to the pre-cycle observation. To support the reliability of the observation results, each session was jointly observed and scored by the classroom teacher and the researcher, and any differences in scoring were discussed and resolved through triangulation with field notes and documentation before the final score was recorded. Data analysis in this study combined descriptive qualitative and quantitative techniques. Quantitatively, the number of children in each developmental category for every indicator was converted into a percentage using the formula: $\text{percentage} = (\text{number of children in a category} \div \text{total number of children}) \times 100\%$, and these percentages were compared across the pre-cycle, Cycle I, Cycle II, and Cycle III to determine the extent of improvement and whether the 80% success criterion had been met. Qualitatively, data from observation notes, documentation, and activity photographs were analyzed descriptively to explain the context behind the quantitative

changes, such as children's enthusiasm, attention, and engagement during the use of digital storybooks.

3. RESULTS AND DISCUSSION

This research was conducted at Al Bayyinah Kindergarten in East Cikarang District, Bekasi Regency, West Java. The location was chosen based on the challenges faced by children aged 5-6 years in pre-reading skills that still need improvement. Some children still have difficulty recognizing letters, pronouncing letter sounds, and connecting images to simple words during learning activities.

The research subjects were 5–6-year-olds, who underwent three cycles with four stages, including planning, action, observation, and reflection, which were carried out repeatedly. Data collection techniques used observation, documentation, and field notes, which were analyzed descriptively and quantitatively by calculating the percentage of children's pre-reading ability achievement in each research cycle. The pre-reading ability indicators observed included recognizing letters, naming letters, understanding story content, and matching pictures with letters.

Pre Cycle

Before implementing the action through the use of digital storybooks, researchers first conducted pre-cycle observations to determine the initial condition of the pre-reading abilities of children aged 5-6 years at Al Bayyinah Kindergarten, East Cikarang District. Based on the results of pre-cycle observations of 10 children, pre-reading abilities still showed suboptimal results. In the aspect of the ability to recognize letters shown, there were 3 children (30%) in the Not Yet Developing (BB) category, 2 children (20%) were in the Starting to Develop (MB) category, 4 children (40%) were in the Developing According to Expectations (BSH) category, and 1 child (10%) was in the Very Well Developing (BSB) category. In the aspect of the ability to name letters, the same results were obtained, namely 3 children (30%) were in the BB category, 2 children (20%) were in the MB category, 4 children (40%) were in the BSH category, and 1 child (10%) was in the BSB category. Furthermore, the aspect of the ability to mention pictures according to the story also showed similar results, with a percentage of BB of 30%, MB of 20%, BSH of 40%, and BSB of 10%. The results of observations on the aspect of the ability to answer simple questions about the content of the story showed that 3 children (30%) were in the BB category, 2 children (20%) were in the MB category, 4 children (40%) were in the BSH category, and 1 child (10%) was in the BSB category. Meanwhile, in the aspect of the ability to match pictures with letters or simple words, the same results were obtained, namely 3 children (30%) were in the BB category, 2 children (20%) were in the MB category, 4 children (40%) were in the BSH category, and 1 child (10%) was in the BSB category. To clarify the results obtained in the pre-cycle, the observation data are presented in graphic form in the following figure.

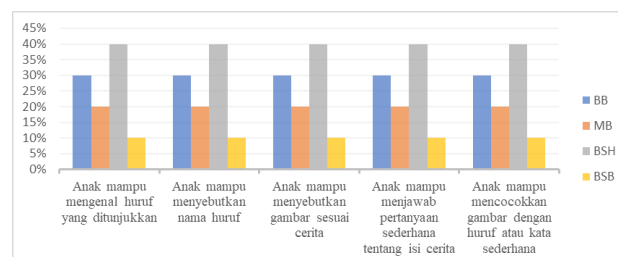


Figure 2 Pre-Cycle Graph of Pre-Reading Ability

Cycle I

Observation results in Cycle I showed that the use of digital storybooks and children's pre-reading skills had increased. In the variable of digital storybook use, most children were in the Developing According to Expectations (BSH) category with a percentage of 40%–50% and Very Well Developed (BSB) at 10%–30%. Meanwhile, in the pre-reading ability variable, most children had also reached the BSH category with a percentage of 40%–50% and BSB at 10%–20%. However, there were still several children who were in the Starting to Develop (MB) and Not Yet Developing (BB) categories in several aspects, so corrective actions were needed in Cycle II to achieve the established success indicators. To clarify the results obtained in Cycle I, the observation data are presented in graphical form in the following Figure.

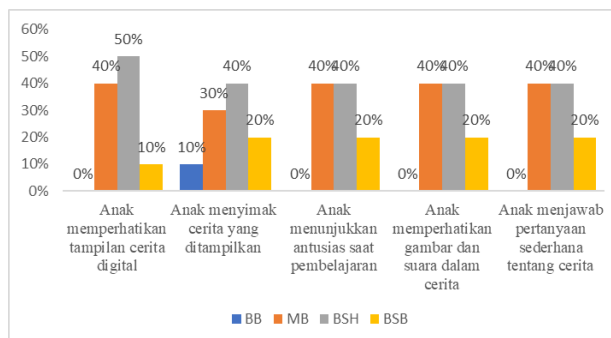


Figure 3 Graph of Recapitulation of Observation Results from Cycle I on the Use of Digital Story Books

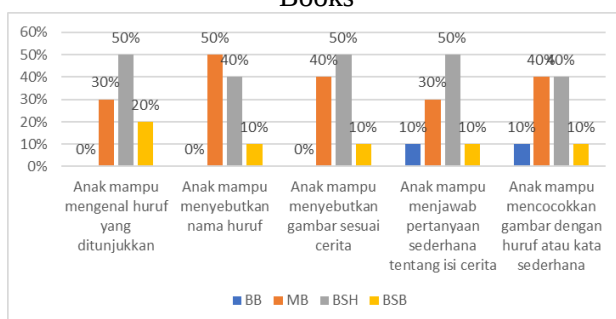


Figure 4 Graph of Recapitulation of Observation Results for Cycle I Pre-Reading Ability

Cycle II

Based on the results of the implementation of actions in Cycle II, which was carried out in four meetings, there was a significant increase in the use of digital storybooks and the pre-reading abilities of children aged 5-6 years. In the variable of digital storybook use, most children have reached the Developing According to Expectations (BSH) and Very Well Developing (BSB) categories. The highest percentage was seen in the aspect of answering simple questions about the story, namely 30% in the BSH category and 70% in the BSB category. Meanwhile, in the pre-reading ability variable, most children were in the BSH category at 60% and BSB at 20% in almost all aspects observed, such as recognizing letters, naming letters, naming pictures according to the story, answering simple questions about the story content, and matching pictures with letters or simple words. These results indicate that the research success indicators have been achieved and children's pre-reading abilities have experienced optimal improvement after the use of digital storybooks. To clarify the results obtained in Cycle II, the observation data are presented in graphic form in the following Figure.

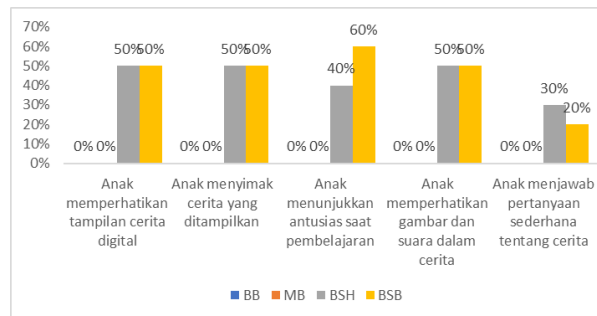
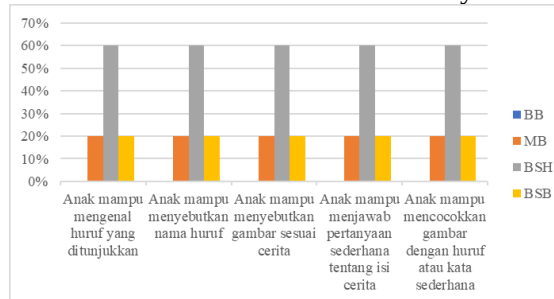


Figure 5 Graph of Recapitulation of Observation Results from Cycle II of Using Digital Storybooks

Figure 6 Graph of Recapitulation of Observation Results for Cycle II Pre-Reading Ability
Cycle III

Observation results in Cycle III showed that the use of digital storybooks and children's pre-reading skills experienced significant improvements. For the variable of digital storybook use, all children had reached the Developing According to Expectations (BSH) and Developing Very Well (BSB) categories, with the highest percentage being in the BSB category at 80%. Meanwhile, for the pre-reading ability variable, the majority of children were in the BSH category at 60% and the BSB category at 30%, while only 10% of children were still in the Starting to Develop (MB) category. These results indicate that the use of digital storybooks can optimally improve children's pre-reading skills and the research success indicators have been achieved. To clarify the results obtained in Cycle III, the observation data are presented in graphical form in the following figure.

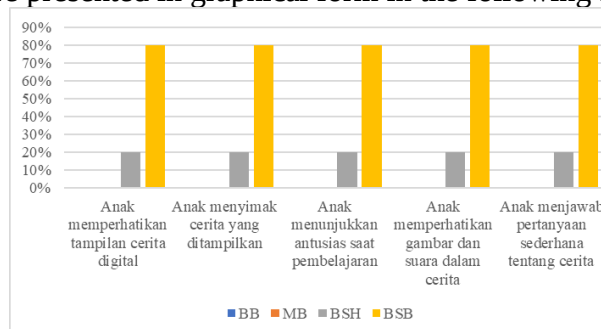


Figure 7 Graph of Recapitulation of Observation Results from Cycle III on the Use of Digital Storybooks

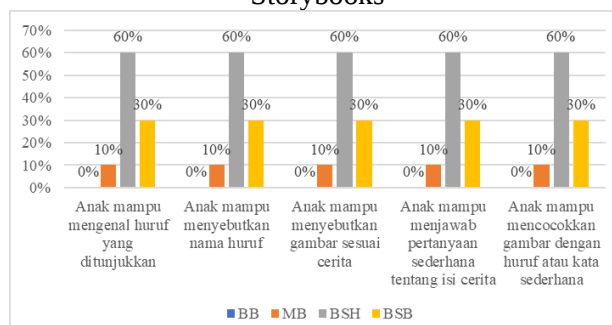


Figure 8 Graph of Recapitulation of Observation Results for Cycle III Pre-Reading Ability

Overall, the research results indicate that the use of digital storybooks can improve the pre-reading skills of children aged 5–6 years gradually and sustainably. The improvement in pre-reading skills is evident in the percentages obtained at each stage of the research: 50% in the pre-cycle, 58% in Cycle I, 80% in Cycle II, and an increase of 90% in Cycle III. Thus, the use of digital storybooks has proven effective in improving the pre-reading skills of early childhood.

This cycle-by-cycle improvement can be explained by the theoretical perspectives discussed earlier rather than being merely descriptive. In line with Montessori's view that pre-reading skills develop through direct experience and sensory stimulation, the repeated exposure to digital storybooks—combining images, text, and audio—appears to have given children concrete, multisensory practice in connecting letters with their sounds, which explains why their ability to recognize and name letters kept increasing across cycles rather than improving only once. The gradual pattern of improvement is also consistent with Piaget's account of the pre-operational stage: as children aged 5–6 years are still developing the capacity to use symbolic representation, the iterative CAR cycles allowed them progressively more opportunities to practice linking pictures, letters, and story content, so that their understanding of story content and their ability to match pictures with letters strengthened over time instead of all at once. In addition, the rising percentages in the use of digital storybooks (children's attention, enthusiasm, and participation) alongside the rising pre-reading scores support Pierre Levy's new media theory, which holds that interactive digital media can convey information in a more engaging way than conventional media; this suggests that the increase in pre-reading ability was not driven by exposure to the story content alone but also by the digital medium's ability to sustain children's motivation to participate across cycles. Taken together, these theoretical links indicate that the improvement resulted from the interaction between concrete multisensory stimulation, developmentally appropriate symbolic practice, and an engaging digital medium, reinforced cycle after cycle through the planning–action–observation–reflection process of Kurt Lewin's CAR model.

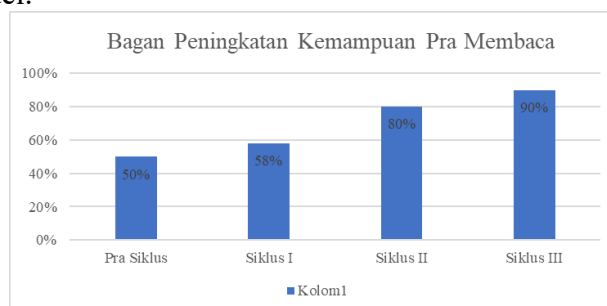


Figure 4. 8 Chart for Improving Pre-Reading Ability

4. CONCLUSION

Based on research conducted at Al Bayyinah Kindergarten in East Cikarang District, the use of digital storybooks has been shown to improve the pre-reading skills of children aged 5–6 years. This medium is able to capture children's attention and interest in participating in learning activities through the presentation of stories complemented by images, text, and audio. During the learning process, children appeared more active in listening to the stories, recognizing letters, naming pictures, and answering simple questions related to the story's content.

Improvements in children's pre-reading skills were evident in the results obtained in each research cycle. In the pre-cycle stage, children's pre-reading skills achieved a 50% improvement. After interventions in Cycle I, the percentage increased to 58%. Furthermore,

in Cycle II, children's pre-reading skills increased to 80%, and in Cycle III, they reached 90%. These results indicate that the use of digital storybooks has a positive influence on the development of children's pre-reading skills.

In addition to demonstrating effectiveness in improving pre-reading skills, the digital storybooks used in this study were also declared appropriate based on expert validation results. Validation results from media experts were 83%, early childhood education experts 80%, and practitioners 84%, with an average validation score of 82%. These results indicate that digital storybooks are categorized as highly appropriate and can be used as learning media to support the development of pre-reading skills in early childhood.

5. SUGGESTION

Based on the results of the research conducted, the use of digital storybooks has proven effective in improving pre-reading skills in children aged 5–6 years. Therefore, efforts from various parties are needed to optimize the use of innovative learning media that are tailored to children's needs. The following recommendations can be made based on the results of this research.

For Teachers

Teachers are advised to utilize digital storybooks as a learning medium to support children's pre-reading activities. Furthermore, teachers need to develop a variety of engaging activities tailored to children's characteristics to make the learning process more effective and enjoyable.

For Schools

Schools are expected to support the use of technology-based learning media by providing adequate facilities and infrastructure. This support will assist teachers in developing more innovative learning that meets students' needs.

For Further Research

Future researchers are expected to develop research on the use of other digital media or apply digital storybooks to different developmental aspects. Thus, the results obtained can further enrich learning innovations in early childhood education and provide broader benefits.

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