The Influence of Multimedia Learning Media on the Development of Early Childhood Literacy

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Abstrak

Pendidikan anak usia dini merupakan hal yang sangat penting, masa usia dini merupakan masa peka yang dinamakan golden age. Masa golden age ini mampu di stimulus dengan pemberian literasi pada anak usia dini, penelitian ini bertujuan untuk menstimulasi perkembangan anak melalui pemberian literasi pembelajaran multimedia. Penelitian kuantitatif dengan memakai pre ekperimental design melalui metode one groub pretest postest melalui proses observasi, pretest juga postest. Data hasil pretest juga postest dan observasi dianalisis secara deskriptif, penelitian dilakukan pada 15 anak pada kelompok A pada TK Dharma Wanita Persatuan 1 Kucur, didapatkan taraf signifikasi lebih kecil dari pada 0,05. Disimpulkan ada ketidaksamaan yang signifikan diantara nilai pretest juga post test. Perilaku anak usia dini nampak berbeda sebelum dan sesudah anak belajar menggunakan multimedia untuk literasi. 6 anak mampu memahami literasi dan 9 anak belum mampu memahami literasi sebelum dilakukan treatment. Setelah dilakukan treatment terdapat perubahan signifikan pada capaian perkembangan anak yakni dari 9 anak terdapat 6 anak mampu memahami Literasi dan 3 anak belum mampu, maka dapat disimpulkan adanya pengaruh pembelajaran multimedia terhadap perkembangan Literasi anak usia dini.

Kata Kunci: Media pembelajaran berbasis multimedia; perkembangan Literasi; Taman Kanak kanak.

Abstract

Early childhood education is essential since this is a delicate time, sometimes called the golden age. It is crucial to promote development through literacy throughout this time. This project aims to provide multimedia-based literacy learning to improve child development. The research uses a pre-experimental design and a quantitative technique, utilizing the one-group pretest-posttest method with evaluations for both the pretest and posttest in addition to observation. These evaluations yielded data, which were then subjected to descriptive analysis. The study, which involved 15 students from group A at Dharma Wanita Persatuan 1 Kucur Kindergarten, revealed a significant difference between pretest and posttest scores at a significance level below 0.05. Children's conduct changed noticeably before and after participating in multimedia literacy instruction. Six kids showed reading comprehension at first, whereas nine did not. Three of the nine kids struggled with literacy after the intervention, while the other six made progress. This implies that the development of early childhood reading is positively impacted by multimedia learning.

Keywords: Media-based Learning, Multimedia, Literacy development, Kindergarten

INTRODUCTION

Education is the development of information, abilities, and behaviors from one generation to the next through instruction, guidance, or training. Although education is often carried out with the guidance of others, it does not rule out the possibility of being carried out independently (Galuh, 2021). Coaching programs for children aged one to six are known as early childhood education. Education in early childhood involves providing an intellectual boost to help children develop physically and spiritually so that they are ready to enter the next stage of school. (Pratiwi & Munastiwi, 2021) Early childhood education is a development program for children aged one to six. The goal is to prepare children for further education by providing educational stimulation to help their physical and mental development (Hikmah, Nurul., 2022).

Early childhood educators and parents are involved in various activities and efforts to provide early childhood with the care, nurturing, and education they need by creating an environment that supports their development (Risnawati, 2020). Early childhood education essentially consists of all the activities and efforts that parents and educators make to nurture, nurture, and educate early childhood by fostering an atmosphere in which they can explore situations that allow them to learn, understand, and experience children in terms of understanding, observing, and experimenting Learning in early childhood is not just about teaching how children understand things   (Risnawati, 2020).

Early childhood learning requires innovation to maximize the development that exists in early childhood. Innovative Learning has a multifunction in stimulating students (Amelia, 2022). Early childhood literacy learning must be able to innovate and develop according to the development of the Industrial Revolution, especially in providing literacy for early childhood to better introduce children to the topics studied. (Shopriceuz Zahroh et al.,2024).

Based on initial observations at Dharma Wanita Persatuan 1 Kucur Kindergarten, Dau District, Malang Regency. It was obtained that in group A, children used letter cards to introduce the concept of letters and numbers and other topics. The media for introducing learning topics uses whiteboard media and also markers, so students have not been able to build conversations, communicate the topics discussed orally and in writing, and have not appeared in the achievements.

The results of the urgency observation in this study were carried out on group A at Kindergarten Dharma Wanita Persatuan 1 Kucur because group A has less active behavior in pre-reading activities, children are not interested in the literacy provided, children tend to be active in

playing with friends. They are classified as developmental achievements who cannot actively participate in pre-reading and writing activities. Group A is also unfamiliar with letter symbols and is classified as a developmental achievement that cannot show letter symbols.

Early childhood learning requires literacy in every learning activity. Literacy is the ability to understand, read, write, and understand various ideas in a person. Literacy is a bridge for children's fundamental skills (Ayu, 2022). Literacy is acquiring knowledge, attitudes, and abilities that lead to the critical capture and management of values in information and subsequent communication through oral, written, or multimedia skills. Early childhood social, emotional, and cognitive development will be influenced by the reading skills taught. Literacy is a robust foundation for children's understanding (Ni et al., 2022).

Early literacy development will help children develop the skills needed for the next level. Literacy can increase children's understanding and help them better conclude the information received. Literacy can also help in terms of the social and conjectural aspects of children thinking critically and exploratively and help increase children's knowledge by observing, seeing, and learning the literacy that children know (Ni et al., 2022).

Providing this literacy is the task of early childhood educators, so they must have a skilled attitude to arrange games and learning that are still fun but still educational for early childhood. Formulating a way to unite between playing and learning appropriate for early childhood, playing that is not enough to play, and knowing that it is not burdensome like a child playing is important. As literacy is essential in early childhood and developing early childhood abilities to promote and experiment with using literacy in Learning, Learning using literacy is expected to make learning more meaningful.

Based on the importance of literacy in Learning, observations were made at the Dharma Wanita Persatuan 1 Kucur Kindergarten institution in Malang Regency. Based on initial observations at Kindergarten Dharma Wanita Persatuan 1 Kucur, the results were obtained that there are 4 rooms in this school consisting of 1 office, 1 group B study room, and 1 group A study room, there are 5 teachers composed of 1 principal, 2 group B teachers and 2 teachers in group A, group B students totaling 24 children and for group A students totaling 15 children. In this kindergarten, there are still not many who have adopted the new curriculum, namely the independent curriculum; in this kindergarten, there are still many who use the 2013 curriculum, which collaborated with the current independent curriculum; the assessment carried out in this kindergarten uses an assessment that is by government regulations on the independent curriculum.

The assessment used at this institution uses an independent curriculum assessment by referring to the achievement of child development in literacy activities; this institution uses the

accomplishment of the development of the basics of Literacy and STEAM. The assessment in this activity uses various elements, including elements children can recognize and understand a lot of information and thoughts orally, in writing or using many media and building conversations; children show interest in participating in pre-reading and pre-writing activities; children recognize and use pre-mathematical concepts, children can think actively and creatively, children show curiosity through observation, exploration is also experimentation, children show initial skills using technology, and finally children can erode with various works of art and works (Ministry of Education and Culture, 2022).

The initial observation obtained from the achievement of essential literacy development as well as STEAM in this institution is that children have been able to interpret various works of art and works; this can be seen When children can draw oranges using a creative paste, markers, and colored pencils, in the achievement of developing to know the concept of mathematics children can count the number of letters in the word orange well, In the achievement of development, able to think actively and creatively, children can tell stories and ask questions with teachers about citrus fruits that children observe on letter cards and picture cards.

The author carries out observation activities by observing during learning activities by giving children amber cards and then conducting question-and-answer activities with students to explain the topic being discussed. However, it has not appeared in children's development of recognizing and understanding much information and communicating feelings and thoughts with oral and written words. It has not appeared in the achievement of children's development to show interest and passion for pre-reading and pre-writing activities.

Based on initial observations at Dharma Wanita Persatuan 1 Kucur Kindergarten, Dau District, Malang Regency. It was obtained that in group A, children used letter cards to introduce the concept of letters and numbers and other topics, such as media for introducing learning topics using whiteboard media and markers. Students have not been able to build conversations, communicate the topics discussed orally and in writing, and have not appeared in the achievements of children's development, able to show interest and passion for pre-reading and pre-writing activities.

The results of the urgency observation in this study were carried out on group A at Kindergarten Dharma Wanita Persatuan 1 Kucur because group A has less active behaviors in pre-reading activities, children are not interested in the literacy provided, children tend to be active in playing with friends. They are classified as developmental achievements who cannot actively participate in pre-reading and writing activities. Group A is also unfamiliar with letter symbols and is classified as a developmental achievement that cannot show letter symbols. Group B at this institution already

has developmental achievements in recognizing letter symbols and is more able to have active developmental achievements in building conversations, asking questions, and answering according to learning topics.

Based on previous research, using multimedia-based media as literacy can increase learning variation in children, improve learning motivation, and stimulate children to think actively and analyze. With interactive multimedia-based Learning, children will find learning more engaging and not monotonous (Literacy et al., 2023). (Miranda et al., 2022)

The following previous research was a study that used audio-visual learning media as literacy to increase cognitive Learning in children. Audio-visual-based Learning is more meaningful for children to understand something new (Daryati, 2024). Meaning in Learning can help understand the concept of knowledge (Adhe et al., 2023). His research also uses digital-based storybook media, learning using audio-visual learning media that facilitates the presentation of learning materials, increases children's motivation in Learning, and overcomes space and time limitations during the learning process.

Based on previous research, learning using multimedia-based learning media can positively impact early childhood development. This research was carried out, and the aim is to make Learning at Kindergarten Dharma Wanita Unity 1 Kucur more optimal in the process. This research will be carried out so that the learning media at Kindergarten Dharma Wanita Persatuan 1 Kucur is more varied. In this kindergarten, Learning will be provided with multimedia-based learning media, which aims to enable children to recognize and understand such information, communicate feelings and thoughts orally, in writing, or using many media, and be able to build conversations and foster children's interest and passion for being able to participate in pre-reading and pre-writing activities actively. Multimedia-based Learning was provided to determine the effect of this learning media on literacy in Dharma Wanita Unity 1 Kucur Kindergarten.

Learning by using multimedia media as learning material will further improve children's ability to remember, know, and understand because of fun Learning. Based on the description of the background that has been explained, the research on Kindergarten Dharma Wanita Persatuan 1 Kucur is entitled "The Effect of Multimedia-Based Learning on the Development of Early Literacy in Group A at Kindergarten Dharma Wanita Persatuan 1 Kucur, Dau District, Malang Regency".

METHODOLOGY

This study used 15 children in group A as research subjects. The study occurred at Dharma Wanita Persatuan 1 Kindergarten Kucur Village, Dau District, Malang Regency. This research was carried out for 5 days, from January 21, 2023, to January 28, 2023. The research uses quantitative

research methods. Determining variable X is also variable Y. Variable X is the variable that influences multimedia-based learning media, and variable Y is the variable that influences early childhood literacy development. The research is carried out in several stages, the first of which is observation, pretest, treatment, and posttest. The quantitative research method is systematic, planned, and structured. The design of this study uses quantitative research using the pre-experimental design method of the type one group pretest-postest (initial test-final test of a single group).

The posttest activity is carried out by observing children's learning activities to find out the child's initial ability by playing with letter cards. Then, I continued providing treatment the next day by conducting interactive learning activities using multimedia-based literacy; the last day of research was given the same activity as in the protest activity, namely playing letter cards.

Type of Research

In this study, quantitative research uses a pre-experimental design method of one group pretest-postest. Describe the type of research used.

Time and Place of Research

The research was conducted from January 23, 2023 -January 28, 2023, at the Dharma Wanita Persatuan 1 Kucur Kindergarten Institute, Akau Village, Dau District, Malang Regency.

Research Objectives

This study will focus on the 15 children in group A, which will be used as an experimental group.

For quantitative research, the research objectives are in the form of populations and samples, while the research subjects used for qualitative research are clearly described in this section. It is also essential to write down the technique of obtaining the subject (qualitative research) and the sampling technique (quantitative research).

Data Collection Techniques and Instrument Development

1. Observation

carried out on the researcher to explore data on the influence of multimedia-based learning methods on early childhood literacy in group A children at Dharma Wanita Persatuan 1 Kucur Kindergarten. To obtain the data needed for this study, the researcher carried out observation activities to collect data and understand the extent of early childhood literacy development in the

learning system at Dharma Wanita Persatuan 1 Kucur Kindergarten. Observation activities are carried out by asking and answering questions in early childhood, which will be used as the object of research because, in PAUD, pretest and posttest are not allowed, so what is done by the researcher is to do play activities letters into words and observe children's learning activities, and see about literacy understanding in early childhood. This activity was carried out as a source of data

2. Pretest, Treatmen and Posttest

This activity is carried out to determine the influence or measure of children's success in understanding the concept of literacy. The activities given to the experimental group, the data from the results of these activities, and observations will be used as a reference to conclude at the end of the research. In this study, several documents are used as research data sources.

3. Documentation

documentation of photos during the implementation of the activity. Data collection techniques are in the form of procedures used to obtain research data. Procedures need to be described according to the type of research. Research instruments are described based on the development of instruments used in research.

RESULTS AND DISCUSSION

RESULT

1. Pretest

The results of the research on pretest activities in group A students at Dharma Wanita Persatuan 1 Kucur Kindergarten that have been carried out obtained results as a result of occurring on objects with the following data: From the results of the pretest that have been carried out on 15 children in group A, using four (4) indicators, the results of r table: 0.514.

Table 1. Pretest Results Before Treatment at Dharma Wanita Persatuan 1 Kucur Kindergarten

No	Child Name	INDICATOR				Total
		1	2	3	4	
1.	AR	4	3	3	3	13
2.	ASY	3	3	3	3	12
3.	PT	4	3	3	3	13
4.	DRG	4	4	4	4	16
5.	KVN	4	4	4	4	16
6.	KHF	3	3	4	3	13
7.	NO	4	4	4	4	16
8.	NRA	4	4	4	4	16
9.	GN	4	4	4	4	16
10.	RO	4	4	3	3	14
11.	ANUS	4	4	3	3	14
12.	ZN	4	4	4	4	16

13.	IS	4	3	3	3	13
14.	RE	3	3	3	4	13
15.	TA	3	3	3	3	12
	Total					213
Ket :	Appear	: Value 4			n: 15	
	No Appearance	: Value 3			r table: 0.514	

The results of the pretest that was carried out on the 15 children in group A, using four indicators of child development achievement, were obtained in Table r: 0.514

Table 2. Results of the Multimedia-Based Learning Media Analysis test

Variable	Average Learning Mean		Average distribution	p
	Pretest	Postest	Mean±SD	
Multi Media-Based Learning Media	25.9	31.5	0.83±0.21	0.001

The hypothesis test results showed a significant difference between the pretest and posttest scores with a significance level of less than 0.05. The alternative hypothesis (H_a) was accepted, and the null hypothesis (H0) was rejected based on the T-test calculation, which showed a significant difference between the pretest and posttest results. This indicates that the development of early childhood literacy in group A of Dharma Wanita Unity 1 Kucur Kindergarten is influenced by multimedia-based teaching materials.

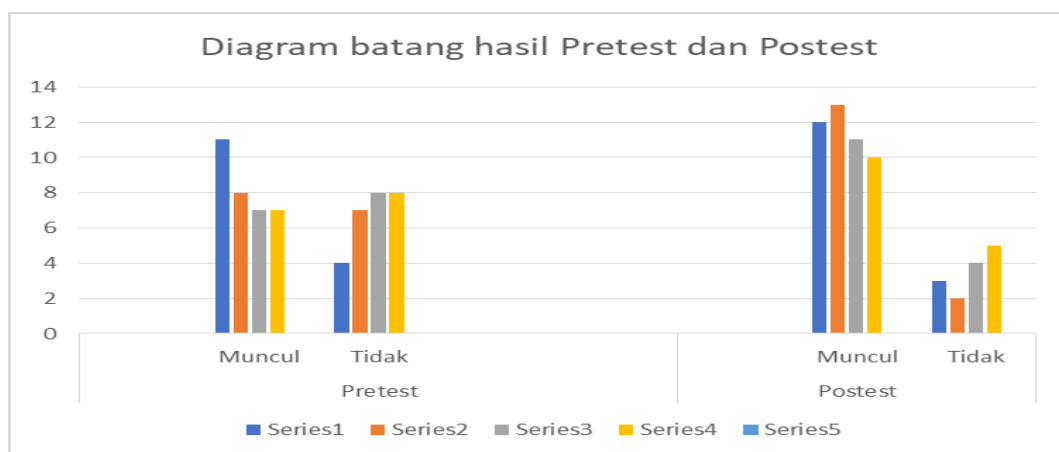**Figure 1. Children's Ability Score Doing Pretest and Postest Activities**

Figure 1. Significant differences exist between the four achievements of child development before and after the treatment. This can be seen in the bar diagram of the pretest and posttest results.

Based on the results of observations made in group A at Dharma Wanita Persatuan 1 Kucur Kindergarten, Dau District, children's literacy ability before treatment still needs to improve. Of the 15 children, only about 40% can understand literacy. The results were obtained from observations on literacy activities using learning media of letter cards and picture cards. The observation results showed that six (6) children had developmental achievements that emerged or could do question-and-answer activities, recognize symbols, and be active in pre-reading activities. Meanwhile, the remaining 9 children have developmental achievements that do not appear or have not been able to build conversations about literacy that have been given, have not been able to ask and answer questions according to the context in the learning discussion, and have not been able to participate in pre-reading activities actively.

This had a significant effect after being treated with multimedia-based learning media in group A learning activities as literacy. According to research data from 9 children who were unable to do so at the initial observation or pretest, there was an increase in developmental achievements, namely, 3 children who could not achieve developmental achievements. This is due to the relationship between multimedia-based learning media and early childhood literacy development. Literacy is urgently needed to expand knowledge and make learning more meaningful.   (Rasmani et al., 2023).

Literacy activities can be made as enjoyable as possible; in this era of digitalization, literacy can be provided in digital or multimedia form to make early childhood learning more enjoyable. Learning that involves activeness and interest can help children quickly understand knowledge (Nasirun, 2021). This research is supported by previous research (Munawwarah, 2022), which says that literacy learning from an early age is very important so that children can compete with the progress of the times in the Society 5.0 era.

Learning using multimedia can help children expand and understand the given topics further. Learning media can deliver messages in children's learning topics. The experimental group given treatment can bring up learning objectives well. Children can build conversations and communicate orally and in writing. Children can develop conversations and listen and respond according to the context of the conversation. Children can show interest in pre-reading activities and understand symbols in literacy. (Rasmani et al., 2023)

Using multimedia-based learning materials has increased students' understanding of teachers' lessons. This aligns with Montessori's child-centered learning paradigm (Suharyat et al., 2022), which emphasises making learning fun for children using interactive multimedia technology. Montessori also emphasizes the concept of a sensitive period in childhood development when

children show a high interest in certain things or traits (Suharyat et al., 2022). In this context, children are more interested in multimedia-based literacy learning in terms of their educational activities.

DISCUSSION

Based on the observations made in group A at Dharma Wanita Persatuan 1 Kucur Kindergarten, Dau District, children's literacy ability before treatment still needs to improve. Of the 15 children, only about 40% can understand literacy. These results were obtained from observations on literacy activities using learning media of letter cards and picture cards.

The observation results showed that six (6) children had developmental achievements that emerged or could do question-and-answer activities, recognize symbols, and be active in pre-reading activities. Meanwhile, the remaining nine children have developmental achievements that do not appear or have not been able to build conversations about literacy that have been given, ask and answer questions according to the context in the learning discussion, and participate in pre-reading activities actively.

The provision of treatment was carried out with multimedia-based learning media in group A learning activities as literacy; this had a very significant effect, according to research data from 9 children who were not able to at the initial observation or pretest, there was an increase in developmental achievements, namely to 3 children who were not able to have developmental achievements. This is due to the relationship between multimedia-based learning media and early childhood literacy development.

According to Dewayani (2017), literacy is needed to expand knowledge, especially in early childhood. Literacy is the basis for understanding a concept and an essential achievement in understanding other aspects of children's learning (Suryadi, 2022). Literacy activities can be made as enjoyable as possible. In this era of digitalization, literacy can be provided in digital or multimedia form to make early childhood learning more enjoyable.

Learning using multimedia can bring up indicators or be able to bring up children's developmental achievements. Learning media can deliver messages about learning topics and make Learning more enjoyable. Children in the experimental group who have been given treatment can bring up learning goals well; children can build conversations and communicate orally and in writing, and children can develop conversations and listen and respond according to the context of the conversation. Children can show interest in pre-reading activities and understand symbols in literacy (Aeni Riwayani et al., 2023).

According to the study's findings, using multimedia-based learning resources dramatically improves children's understanding of the lessons teachers teach. These results are based on the Montessori experiential learning theory (Suharyat et al., 2022), which emphasizes providing fun learning opportunities to children in this regard through interesting multimedia technology. Montessori stated that in child development, there is a sensitive period marked by the child's interest in a particular object or characteristic; in this case, the child will be more interested in multimedia-based literacy learning given to child learning.

CONCLUSION

Based on the results of data analysis and discussion, a conclusion can be drawn as follows: The results of the pretest and post-test data research on the influence of multimedia-based learning media on the development of early literacy in group A there is a significant difference between the pretest score and the posttest score. From the results of the calculation of the T-test, there is a substantial difference in the results of the pretest and the posttest, so it can be concluded that H_a is accepted and Ho is rejected. H_a: There is an influence of multimedia-based learning media on the development of early childhood literacy in group A of Dharma Wanita Unity 1 Kucur Kindergarten.

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