The Use Of Digital Home Media To Improve Children's Critical Thinking Skills

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Abstract
This research aims to determine the effect of number house learning media on the process of developing critical thinking skills with symbolic play teaching materials in children aged 4-5 years at Al-Falah Kindergarten Surabaya. This research uses a type of quantitative research with a quasi-experimental research design and the dependent variable is children's critical thinking and the independent variable is number home learning media. Research subjects were selected using purposive sampling technique. The samples taken consisted of 21 control group children and 21 experimental group children. The data collection method was carried out using an instrument sheet. Test data analysis using the t test with computer assistance SPSS IBM 21 for Windows software. This can be proven by the differences in children's development results before and after being given treatment in the form of number-based learning media. Based on the results of the pretest and posttest scores, the initial measurements were the pretest with an average of 2.613 and the posttest with an average of 2.793. The results of the T test have a significant value of 0.37. This means that the results obtained are greater than 0.05, namely H 0 is accepted and Ha is rejected. It can be said that there is no difference between pretest variables and posttest variables. So this research shows that there is an influence of home learning media on the process of developing creative thinking in early childhood.
Keywords: Critical Thinking, Early Childhood, Number Home Learning Media

1. INTRODUCTION

Education is something that is considered important in every human life [1]. The legal definition of education is a principled and planned effort to facilitate and create a teaching and learning environment so that children actively develop their potential (RUU SISDIKNAS 2022). Educational activities are carried out through a teaching and learning process between teachers, students and the learning environment. Forming personality and developing one's skills consciously and programmed to achieve life goals is the ultimate goal of the learning and teaching process [2].

I. Widiyanah et al. (eds.), *Proceedings of the 8th International Conference on Education Innovation (ICEI 2024)*,
Advances in Social Science, Education and Humanities Research 888,
https://doi.org/10.2991/978-2-38476-360-3_6

Education is currently developing rapidly, especially in Early Childhood Education (PAUD). Early Childhood Education (PAUD) is education that occupies the most fundamental position in children's education to develop human resources (Yoshikawa, *et al.* 2013). Early childhood education is pre-school education between the ages of 0-6 years by providing the right stimulation so that children grow and develop optimally and sustainably, both physically and psychologically, such as early childhood education where children at this age need stimulus for growth. and its development. According to the independent curriculum for child-centered learning activities, what is meant is that children are given freedom to express and explore through communication and interaction in discussions and work [3]. The independent curriculum is an educational success that focuses on children's talents, the process of teaching and learning activities which is generally carried out in the classroom, by implementing independent learning, learning activities are carried out outside the classroom or like outing classes. Various learning methods are used simultaneously, namely the conversation method, demonstration method, question and answer method, experimental method, and using the field trip method. The lecture method that has so far been used by teachers for learning process activities makes teachers feel that they are in a safe and comfortable zone, therefore this method must be developed, because when teachers only apply the lecture method to children it will be very monotonous from this as teachers must improve learning activities by using media. According to the Child Development Achievement Level Standards, there are several areas of cognitive development that must be achieved in childhood; This includes learning to solve problems, critical thinking, symbolic thinking. Cognitive development that cannot be ignored is the area of developing critical thinking in children through symbols because in the ability to think critically through symbols, children begin to use symbols when they use objects or actions to represent something that is not in front of them. Critical thinking skills through symbols are also part of cognitive development. Symbolic function is the initial stage of practical thinking in early childhood. At this stage, children develop the ability to imagine objects that do not exist. The ability to think critically through symbols is called symbolic function. Thus, quickly developing the child's mental world. There are three components based on cognitive development, including problem solving, logical thinking and symbolic thinking which are adapted to the child's age stages. Symbolic thinking has certain indicators and characteristics that are different at each child's age [4]. At this stage, symbolic is included in symbol learning and requires the ability to create symbols wrapped in words so as to stimulate children's critical thinking abilities. An important area of cognitive development to pay attention to is the scope of developing critical thinking skills with symbols, because when children begin to recognize and use symbols, that is when they learn about objects and actions to group things that do not exist. Critical thinking is already visible in early childhood, through the natural tendency to explore things in the environment with curiosity and try to gain understanding. The main characteristic at an early age is autonomy which allows children to explore their surroundings and develop their thinking. To support their natural tendencies to explore and analyze, children must also be equipped and

encouraged with important critical thinking skills from an early age, such as the habit of observing and asking questions.

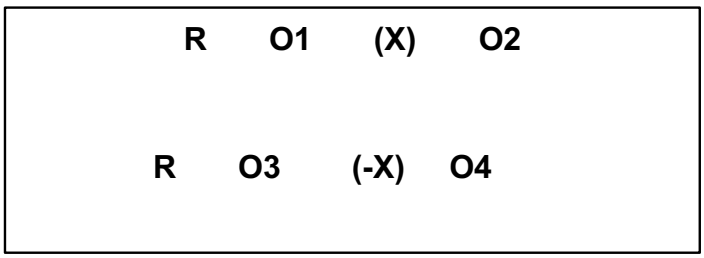
Cognitive development can use media during learning, there are various media that can be used in the learning process, namely visual media, audio media, audio visual media, auditory media and others. The media used in this research is visual media which displays the material using learning media, so this media is very important for memory in the learning process. Children are able to solve problems when completing the media. The media used is able to hone children's thinking power and children's curiosity. In this case, the choice of learning media must be adjusted to the predetermined theme, so that it can support students' understanding and interest in the learning material. The use of learning media also has the aim of creating more active involvement of children in learning. Enhanced with interesting learning. The child will actively participate in all activities proposed by the teacher. Based on preliminary observations in kindergartens in the Surabaya area, researchers found that children were still unable to think symbolically correctly. This can be seen when children are still confused about pronouncing number symbols, ordering number symbols, recognizing various types of vowels and consonants, and grouping objects according to their names. The learning process begins with activities about religion. The introduction to religious learning does not prioritize learning media but uses children's worksheets, such as memorizing and reciting the Koran. The learning process in the classroom after praying and reciting the Koran, the teacher gives the child a book containing letters that must be bolded and lines that must be bolded. The teacher does not first stimulate the process of carrying out the task by using learning media in the form of symbols, for example on the board writing the letter "A" or showing the learning media for the letter "A", but the teacher only instructs the child to bold the letter. The process of learning activities is more religious and there is a lack of symbolic thinking stimulus processes in children. Overcoming this problem requires effort from the teacher to make learning fun by introducing numbers, letters, and shapes that are as interesting as possible and utilizing several available media and teachers can also create play activities while learning to be able to improve children's symbolic thinking abilities. What differentiates this research from previous research is that there are variables in the activities and media used as well as using different approach methods, where the previous research only introduced and used delicious ball media, whereas the activities in this research include recognizing number symbols, mentioning number symbols, recognize various symbols for vowels and consonants, as well as grouping various forms of images into learning media. This research will develop critical thinking processes through symbols with the number house learning media (HOUSMARANI). In children aged 4-5 years, the presence of this media helps the learning process and development of critical thinking through symbols in early childhood.

2. METHODS

This research uses quantitative research. Quantitative research is research in the form of numbers and analysis using statistics [5]. This type of research is also a type of scientific research because it meets scientific principles, namely concrete/empirical. This research design uses a quasi-experimental design. Experimental research allows researchers to control the independent variables and other variables as little as possible, so that the certainty of research results is much more controlled [6]. The experimental design is better than the pre-experimental because the design has a control group that can be used as a comparison to the experimental group, while the pre-experimental design does not have a control group.

This research uses an experimental design (Pretest – Posttest Control Group Design), namely a form of experiment carried out by randomizing two groups (control group and experimental group). This experimental design was carried out by carrying out initial measurements or observations before and after the treatment was given to the experimental group and the control group. This design model is described as follows:

Figure 1. Experimental design pretest – posttest control group design



Information:
R : Random
O1 : Pretest experimental group
O2 : Pretest experimental group
O3 : Pretest control group
O4 : Posttest control group
X : Treatment (learning media (HOUSMARANI))

Population is defined as a group of individuals who have certain characteristics which are the focus of research [7]. The population is globally the individuals who are used as targets and research objects. The data in this study was obtained from data sources that can provide information on the population in this study, namely the kindergarten which was the target of the research. The population in this study were all children from Al-Falah Kindergarten in Surabaya for the 2022/2023 academic year with a total of 64 students in group A. The sample in the study was a portion of the population that was selected and observed or measured to represent the entire population [8]. Population refers to a group of people or objects that have the same characteristics or are related to the problem being studied.

Data collection techniques are activities that obtain the data needed and can be obtained into data that can be presented according to the problem being faced. The data collection techniques in this research are as follows:

Observation is a data collection technique by observing research objects using all the senses [9]. So, observation is data collection carried out through observing and recording the process of teaching and learning activities for the development of children's symbolic thinking through learning media at Al-Falah Kindergarten Surabaya. The following are instruments using home number media and instruments using free media. Unstructured interviews are open and flexible, allowing for deeper information to be extracted and observing patterns among participants [10]. Development of symbolic thinking in early childhood. Interview data will be used to strengthen observation results. The sample interviewed was a Data Analysis Techniques class teacher. This research was carried out using quantitative analysis obtained in the form of numbers. This research uses the Kolmogorov-Smirnov normality test to test whether a data sample has a normal distribution or not. Parametric tests are statistical methods used to analyze data by assuming that the data comes from a certain distribution, such as the normal distribution or other distributions with certain parameters [11]. Parametric tests are often used when data meets certain assumptions, such as normal distribution and homogeneity of variance. The normal distribution is frequently used by many parametric statistical methods, including the t test.

3. RESULTS AND DISCUSSION

3.1 Pre-test Results

The pretest or what is commonly known as initial observation before treatment is given is carried out by researchers for three days in classes A2 and A3. The pretest carried out by the researcher aims to determine the initial state of the sample regarding symbolic thinking abilities. The researchers assessed this in terms of the child's learning before being given treatment. The pretest activities were carried out by researchers by observing and researching using: media introducing the numbers 1-10 by means of each child taking turns playing the media, but on this occassion there were only a few children who were able to recognize the numbers 1-10. This can be seen from 21 children, only 7 children were able to say the numbers 1-10 correctly, while 14 children were still confused about saying the numbers 1-10 in order. The media introduced vowels in a way that each child followed the playing procedures in turns and each child able to name vowels randomly and learn to thicken vowels. This can be seen from 21 children, only 7 children were able to recognize and name vowels randomly and the next media was to introduce pictures that would be attached according to nouns such as the word "table". Children had to look for a picture of a table and show which was a vowel and which was a consonant. and play according to the rules, namely taking turns. This can be seen from the fact that only 6 children are capable. Children in these 3 activities still have a lot to develop regarding numbers and letters because Al-Falah Surabaya Kindergarten refers more to religion. The pretest scores obtained by researchers when conducting observations in class A2 TK Al-Falah Surabaya are as follows:

Table 1. Pretest scores on free media ability results

No	Research subject	Pre-test score
1.	Fatih	3
2.	Putri	2
3.	Late afternoon	2.8
4.	Ayesha	2.6
5.	Arsyila	3.1
6.	Emir	3
7.	Harald	3
8.	Jeslin	2
9.	Ayman	3,2
10.	Ammar	2.2
11.	Kirana	2.6
12.	Clemira	3
13.	Nasa	2
14.	Darrel	2.7
15.	Arshaka	2
16.	Nayaka	2.7
17.	Ratu	2.6
18.	Almeer	2
19.	Alrazz	2.6
20.	Sheerly	2.2
21.	Kayla	3
Amount		54,888
Average		2.6137

3.2 Post-test Results

Post-test activity was carried out on June 7 2023. The purpose of holding the posttest was to measure the final condition after the subjects were given treatment. At the start of this activity the researcher invited the children to sit in a circle on the carpet. After that, the researcher greeted and greeted the children, but before that the children carried out activities according to the plan, namely reciting the Koran. Then the researcher took attendance of the children and asked those who were not present in class. Before starting the reviewing activity, the researcher as usual provides motivation so that the children concentrate better when the researcher explains. Researchers briefly reviewed the treatment activities that had been carried out for four days with questions and answers. Researchers also invited children to tell what activities they had done and what activities the children preferred. The results of the posttest scores were obtained after giving treatment using learning media (HOUSMARANI). This test uses an observation assessment format to see the child's ability to think symbolically. Data from the results of this posttest research to see the influence of number house learning media on the process of developing symbolic thinking in children aged 4-5 years at Al-Falah Kindergarten Surabaya after being given treatment can be seen in the following table:

Table 2 Posttest scores of learning media results (HOUSMARANI)

No.	Research subject	Post test score
1.	Naqia	2

No.	Research subject	Post test score
2.	Breathe	2
3.	Debrian	2,8
4.	Giska	3,1
5.	Djaka	3
6.	Afiqa	3
7.	Ata	2
8.	Yaya	2
9.	Ahmed	2,8
10.	El Ghazi	3
11.	Kayla	3,1
12.	Jordan	2,4
13.	Water	2,4
14.	Kayra	3,1
15.	Aksa	2
16.	Kahfi	1
17.	Vian	2,6
18.	Nazis	4
19.	Azril	4
20.	Keenan	4
21.	Alesha	4
Amount		58,666
Average		2,793

Post-test score results show that the ability to think critically through symbols has increased significantly. Children show increased critical thinking skills through symbolic development very well. Even though it is not yet possible for researchers to directly introduce symbolic thinking activities using learning media (HOUSEMARANI). Based on the posttest results, it shows that the level of critical thinking skills through symbols has increased. It can be seen from the average posttest score that the average child has increased, where the average child who has not developed has experienced an increase to develop according to expectations and get the highest score of four children, namely with a score of 4. Children who get a score of 4 show the ability to think critically through symbols that develop according to expectations. with the hope that children will be able to name and recognize numbers, letters and be able to attach pictures according to the words. The lowest score, namely 2, means that the ability to think symbolically is still not developed, because during treatment the child still needs guidance or assistance when playing learning media (HOUSMARANI). Children's scores from pretest to posttest increased quite well as evidenced by the number of children who got high scores on the post-test.

3.3 Comparison of Pretest and Posttest Results Development of Critical Thinking through Symbolics

The data from the pretest scores will then be compared with the posttest score data to see the difference in values (scores) of data before being given treatment and data after being given treatment using the results of observations of critical thinking skills through symbols at the age of 4-5 years in kindergarten. Al-Falah Surabaya. The increase in children's scores on symbolic thinking abilities before and after being given treatment can be seen in the following table:

Table 3 Differences in pretest and posttest scores

Sample	Pretest scores	Posttest scores	Result of increased value
1.	3	2	1
2.	2	2	0
3.	2.8	2.8	0
4.	2.6	3.1	0.5
5.	3.1	3	0.1
6.	3	3	0
7.	3	2	1
8.	2	2	0
9.	3,2	2,8	0,4
10.	2,2	3	0,8
11.	2,6	3,1	0,5
12.	3	2,4	0,6
13.	2	2,4	0,4
14.	2,7	3.1	0,4
15.	2	2	0
16.	2,7	1	1,7
17.	2,6	2,6	0
18.	2	4	2
19.	2.6	4	1.4
20.	2,2	4	1.8
21.	3	4	1
Amount	54.88	58.66	13.6
Average	2,613	2,793	0.647

The results of the comparison table above show that 21 research subjects experienced an increase after being given treatment. The lowest score for children aged 4-5 years during the pretest was 2. After being given treatment, the highest posttest score was 4. Based on the research data, it was found that children aged 4-5 years experienced improvement. In the posttest assessment there was only a slight increase, because the researchers only received treatment for four times, whereas when children were introduced to new media or thing they had to do it repeatedly. The concept of learning for children 4-5 years old at Kindergarten Al-Falah Surabaya is still not fully introduced to symbols. posttest on twenty-one subjects regarding the ability to think critically through symbols for children aged 4-5 years at Al-Falah Kindergarten Surabaya can be depicted in graphical data. This is because it can make it easier to understand the values that have been obtained before and after the treatment is given as follows.

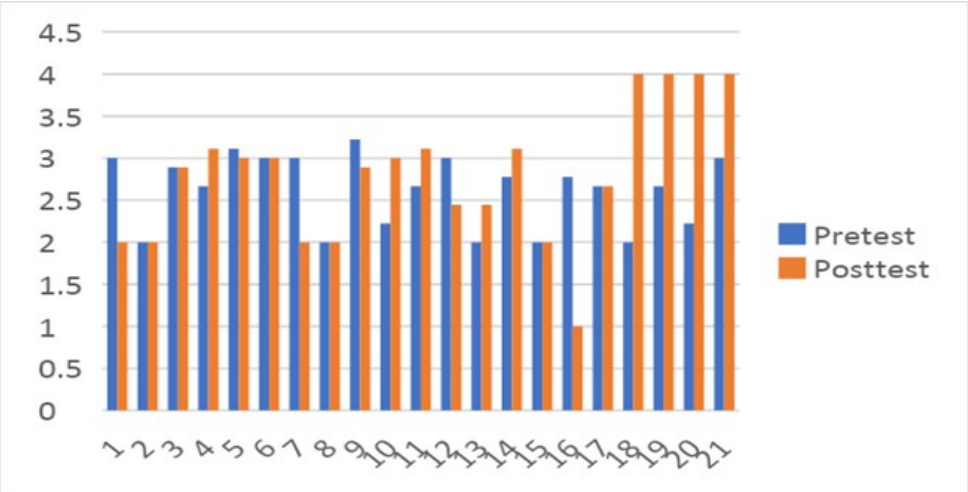


Figure 2 Results of recapitulation of pre-test and post-test scores

The graph above shows the differences obtained by research subjects before and after being given treatment in the form of home number learning media in improving the critical thinking skills of children aged 4-5 years at Al-Falah Kindergarten Surabaya. The graph shows that the child's critical thinking ability before being given treatment received a score of 1 as the lowest score, while the highest score was 4, therefore the child's ability to recognize numbers will be much better if it can be developed in an activity that is packaged in an interesting and fun way and with using media that can support children's learning to develop critical thinking skills optimally. The results obtained by researchers after being given treatment using free media were satisfactory, this happened because the results obtained by researchers in the field experienced a development with a score of 2 as the lowest value and a score of 3.2 as the highest value.

The results of the research showed that in the results of the critical thinking skills of children aged 4-5 years there were differences in pretest and posttest scores , the average pretest score for children aged 4-5 years at AL-Falah Kindergarten Surabaya was 2.613 and there was an increase in the average posttest score in children aged 4-5 years at Al-Falah Kindergarten Surabaya amounted to 2,793. The difference between the pretest and posttest results of the t test shows that there is an influence of home number learning media on the critical thinking development process of children aged 4-5 years at Al-Falah Kindergarten Surabaya with the following discussion.

3.4 The influence of number house learning media on the critical thinking process by playing with symbols in children aged 4-5 years at Al-Falah Kindergarten Surabaya

Based on the results of statistical calculations using the t test technique, a significant value of 0.37 was obtained. This means that the results obtained are greater than 0.05, namely H 0 is accepted and Ha is rejected. This means that there is no influence between the independent variables on the dependent variable. It can be said that there is no difference between pretest variables and posttest variables. Regarding the influence of learning media on the process of developing critical thinking at Al-Falah Kindergarten Surabaya, the results of analysis using the SPSS IBM 21 application. The results of the research show that the development of critical thinking can be improved using learning media (HOUSMARANI). The number home learning media in this research is an educational learning media that is very helpful for teachers. This learning media not only helps teachers but can also stimulate children's thoughts, attention and interest in learning, making it easier for children to understand learning so as to achieve better results with the help of learning media (HOUSMARANI). Sharpening the development of children's critical thinking can use play strategies by utilizing learning media (HOUSMARANI). Home learning media numbers can be used as media in games.

3.5 Progress of Influence of Number House Learning Media on the Development Process of Critical Thinking with Symbolic Play in Children Aged 4-5 Years at Al-Falah Kindergarten Surabaya

Children aged 4-5 years at AL-Falah Surabaya Kindergarten experience problems with low critical thinking skills. Various identification problems have been

explained as the cause of the low critical thinking development process for children aged 4-5 years at Al-Falah Kindergarten Surabaya. To overcome this problem, learning activities have been carried out using learning media (housmarani). Providing treatment using the learning media Rumah Nuga was carried out in four meetings. Learning activities using number house learning media are carried out with the aim of improving the process of developing children's critical thinking at Al-Falah Kindergarten Surabaya.

Based on the research that has been carried out, it can be concluded that the use of number home learning media is able to improve the critical thinking skills of children aged 4-5 years at Al-Falah Kindergarten Surabaya. The success of this research, which can be seen in research, has shown the suitability between theory and research results. This can be seen from the children's learning process when using number home learning media, which is carried out with children aged 4-5 years at Al-Falah Kindergarten Surabaya. Overall, the learning results obtained from the pretest and posttest show that the learning activities carried out have achieved the previously determined indicators of success. Overall, the learning outcomes obtained are good. Based on the results obtained in the pretest and posttest activities, it can be concluded that learning activities using number house learning media have achieved the expected success in maximizing symbolic thinking learning as enrichment material for the learning activities that have been implemented.

4. CONCLUSION

The use of number house learning media in children aged 4-5 years at Al-Falah Kindergarten Surabaya can influence the process of developing children's symbolic thinking as proven through the t test with a significant value of 0.37. This means that the results obtained are greater than 0.05, namely H_0 is accepted and H_a is rejected. It can be said that there is no difference between pretest variables and posttest variables. The data obtained above can be concluded that there is an influence of home learning media on the process of developing symbolic thinking in children aged 4-5 years at Al-Falah Kindergarten Surabaya. The process of critical thinking using symbolic play in children aged 4-5 years through the learning medium at Al-Falah Kindergarten in Surabaya has been proven to have a positive impact in developing children's symbolic thinking abilities. Learning Media Philosophy Numerical House is a learning media in the form of a house where the house has a building that contains symbols of happiness, comfort and warmth for its residents. The development of symbolic thinking in children aged 4-5 years is developing gradually, meeting by meeting, learning activities in the classroom by first introducing children to learning media (HOUSMARANI), children are invited to play with the number house learning media, gradually recognizing and mentioning numbers and letters, after that they are introduced to shapes. -form in children. The child's development in symbolic thinking is done four times, the child is introduced to the home learning media of numbers and various games with numbers, letters and pictures or shapes. Children's enthusiasm and enthusiasm for learning is a very important thing for teachers and parents to pay

attention to because it has an influence in determining the process of developing children's symbolic thinking, through home learning media. Figures show that twenty-one research subjects obtained better posttest scores compared to the pretest scores. This is in accordance with the pretest results obtained showing that the average child is still unable to develop children's symbolic thinking.

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