

The Influence of the Montessori Method on Early Childhood Development

Setiani Anggun¹, Harianto Jimi¹, Dewanti Tri¹, Herpratiwi¹

¹ STKIP Al Islam Tunas Bangsa, Indonesia

 anggunsetiani@stkipalib.ac.id

Abstract

This research aims to determine the Montessori method's influence on early childhood literacy development. The main problem in this research is whether the Montessori method influences students' reading, writing, and arithmetic abilities in the Bdi PAUD KB Permata Hati Way Kanan group. The aim to be achieved in this research is to find out how much influence the Montessori method has on the Calistung abilities of group B students at PAUD KB Permata Hati Way Kanan. This type of research is Pre-Experimental. The experimental design that will be used is the One Group Pretest-Posttest Design. This design exists as a pretest before being treated and a posttest after being given treatment. Data collection techniques include observation, documentation, and tests. The subjects in this research were 15 students from the Bdi PAUD KB Permata Hati Way Kanan group. The research results showed that after being given the Montessori method treatment, the Calistung abilities of group B students at PAUD KB Permata Hati Way Kanan increased. This is based on results post-test with a high percentage of the assessment of developing according to expectations (BSH). The use of the Montessori method affects the Calistung ability of group B students at PAUD KB Permata Hati Way Kanan, as evidenced by the average difference of 25% for pretest results and 36% for posttest results. There is a difference between using the Montessori method and the Montessori method before using the Montessori method on the Calistung ability of group B students at PAUD KB Permata Hati Way Kanan. The Wilcoxon test proves that the calculated Z value is 3.4 and the Z table is 1.635 Z table (1.635). Based on the results of this research, the Montessori method influences the Calistung ability of group B students at PAUD KB Permata Hati Way Kanan.

Keywords: Montessori Method, Elementary School, Childhood Literacy Development

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INTRODUCTION

Reading skills are one of the abilities that a person must have. Reading is one of the initial capital for gaining knowledge and is very necessary as a basic material for writing. (Novrizta, 2019) (Adelia, 2022) (Marlisa, 2016). Reading skills cannot be acquired easily and in a short time. Therefore, it is necessary to provide stimuli such as activities that emphasize the recognition and pronunciation of sound symbols in the form of letters,

words and sentences in simple form. (Ghina Wulansuci, 2019) (Istiyani, 2013) (Harianto, 2020) (Isna, 2019).

Writing skills in early childhood are children's activities to try writing techniques using curves and lines as letters, imitating writing or copying known letters, and writing their own names. This requires fine motor skills, eye and hand coordination. (Hajani et al., 2014) (Ardin et al., 2020). According to Montessori in (Susanto Ahmad, 2011) the ability to write in early childhood includes the ability and skills to hold writing tools, open and close books, the ability to make scribbles, draw straight lines, slanted lines, curved lines, triangles, quadrilaterals, and circle.

In kindergarten competency standards within the scope of cognitive development (symbolic thinking) numeracy activities for children aged 5-6 years include: mentioning number symbols 1-10, using number symbols to count, matching numbers with number symbols, recognizing various types of vowel and consonant symbols, presenting various kinds of objects in the form of pictures or writing. (Ministry of National Education of the Republic of Indonesia, 2014) (Maryam, 2019). The development of numeracy skills in early childhood must be carried out through fun games so that children can develop their numeracy skills optimally. (Khadijah & Armanila, 2017) (Rosa Imani Khan, 2016).

Reading, writing and arithmetic are among the developmental tasks of early childhood. Children are introduced to the basic activities of reading, writing and arithmetic on a limited basis only by introducing basic concepts which include logical thinking, symbolic thinking and literacy. (Indonesian Ministry of National Education, 2014). For children aged 3-6 years, they can be introduced to reading, writing and arithmetic, but using Calistung stimulation, namely by being introduced to writing, numbers and pictures by playing.

One of the Calistung learning methods for early childhood is the Montessori method. The Montessori method is a form of learning that uses an individual approach, where children lead or organize their own learning, utilizing learning media that can be monitored and corrected if they make mistakes themselves, the teacher simply monitors the child's capacity and style. (Hainstock, 2008) (Elytasari, 2017) (Turnip & Wijayaningsih, 2022). Montessori learning divides learning into three things, namely the stage of recognizing identity, the stage of recognizing comparisons, and the stage of differences between similar objects. (Hajar, 2021).

In the Montessori method there are five activities divided into five areas. The five activities include: life skills activities, sensory stimulus activities, language activities, mathematics activities, and science and culture activities. (Laksmi et al., 2021) (Syefriani Darnis, 2018). In the Montessori learning model, assessment is carried out using observation techniques on all children when they carry out learning activities every day. Teachers not only observe cognitive aspects, but also social and emotional aspects of children when they mingle with their friends. (Masyrofah, 2017) (Syefriani Darnis, 2018) (Afifah, 2020).

In Calistung learning in early childhood is carried out through a play approach and is adapted to the child's development. In introducing children to reading, educators do not have to ask children to memorize the alphabet one by one. Likewise, to introduce numbers to children, they don't have to memorize the existing number symbols. But this can be done while playing. (Rahayu, 2018). Play is a series of activities or activities for children to have fun. Whatever the activity, as long as it contains an element of fun or happiness for young children, it can be called play. (Fadillah, 2017).

Children play by exploring the surrounding environment to obtain something and fulfill curiosity related to their knowledge. (Ramani, G. B., & Eason, 2015) (Ramani, G. B., Daubert, E. N., Scalise, 2019). One of the games played by young children is role-playing games. Role playing allows children to learn many things because children are free to express the role they play without worrying about being punished. Role playing also

teaches children to act as certain characters so that children can immediately learn about the situation they are acting in. (Rahmawati, 2015) (Siska, 2011).

Based on the results of pre-observations carried out on group B students at PAUD KB Permata Hati Way Kanan, it shows that the children's Calistung abilities are still low. This can be seen when the child is asked to write his own name, indicating letters and numbers. There are still many children who are not able to do this.

To obtain Calistung ability in children, indicators of Calistung ability are needed, namely naming vowel letters (a, i, u, e, o), mentioning consonant letters (b, c, d, f, g, etc.), mentioning groups of pictures that have the same sound/letter, reading one's own name, using writing tools correctly, making lines/drawings, writing one's own name, saying symbols for numbers 1-10, showing numbers 1-10, counting numbers with objects, and counting numbers with pictures. Therefore, to develop Calistung abilities in children, appropriate methods or methods are needed to be able to stimulate children's reading, writing and arithmetic abilities. One way is by using the Montessori method.

METHOD

This research is quantitative research with an experimental approach. Experimental research is a research method used to find the effect of certain treatments on others under controlled conditions. (Sugiyono, 2015). The research used here is Pre-Experimental, which will examine the influence of the Montessori method on the Calistung abilities of group B students at PAUD KB Permata Hati Way Kanan. The experimental design used was One Group Pretest-Posttest Design. This type has a pretest before treatment and a posttest after treatment. In this way, the results of the treatment can be known more accurately, because you can compare the conditions before and after the treatment.

Population is a generalization area consisting of objects/subjects that have certain qualities and characteristics determined by researchers to be studied and then conclusions drawn (Sugiyono, 2015). In this study, the population used was students in group B PAUD KB Permata Hati Way Kanan, consisting of 15 students. The sampling technique used was non-probability sampling. The sampling used in this research was saturated sampling. Saturated sampling is a sampling technique where all members of the population are used as samples, meaning that the sample in this study is 15 students. The data collection used in this research is observation, tests and documentation presented in the form of instruments. The instrument used is the Calistung ability observation sheet with assessments BB (Not Developing = 1), MB (Starting to Develop = 2), BSH (Developing According to Expectations = 3), BSB (Developing Very Well = 4) and documentation of the learning process. (Ardiansyah et al., 2023).

Before the instrument is used, the instrument is first validated using expert opinions. The data analysis technique in this research uses descriptive analysis and nonparametric statistical analysis. For the analysis of different tests, Wilcoxon different analysis was used using a computer system with the Statistical Program Series package (SPSS 20) using the "Z" test formula.

RESULTS AND DISCUSSION

Description of pretest and posttest data (before and after being treated with the Montessori method)

There are 11 indicators of early childhood Calistung abilities, including:

- 1) mention vowels,
- 2) mention consonant letters,
- 3) Name groups of pictures that have the same sound/letter,
- 4) read your own name,

- 5) use stationery correctly,
- 6) make lines/drawings
- 7) write your own name,
- 8) say the symbols for the numbers 1-10,
- 9) shows numbers 1-10,
- 10) counting quantities with objects,
- 11) calculate the amount with pictures.

To determine the reading, writing and arithmetic abilities of group B students at PAUD KB Permata Hati Way Kanan, the researchers conducted a pretest before providing treatment, namely the Montessori learning model. The data obtained are as follows:

Table I
Pretest Results

No	1	2	3	4	5	6	7	8	9	10	11	Number of Values	IS
AB	3	3	2	2	3	3	2	3	3	3	3	30	BS
AKB	2	1	1	1	2	2	1	2	1	2	1	16	BB
AKM	2	2	1	1	2	2	1	2	2	2	2	19	MB
AM	2	2	1	1	2	2	1	2	1	2	2	18	MB
AMU	3	3	3	2	3	3	2	3	3	3	3	31	BS
AS	2	2	1	1	2	2	1	2	2	1	2	18	MB
FROM	2	2	1	1	2	2	1	2	2	1	2	18	MB
DZA	3	3	3	3	3	3	3	3	3	3	3	33	BS
WHE N	3	3	3	2	3	3	2	3	3	3	3	31	BS
BITTE R	3	3	3	3	3	3	3	3	3	3	3	33	BS
THAT	3	2	2	2	3	3	2	2	2	2	2	25	MB
on	2	1	1	1	2	2	1	2	2	2	2	17	MB
FACIN G	2	1	1	1	2	3	1	2	2	2	2	19	MB
WHAT	3	3	3	2	3	3	2	3	3	3	3	31	BS
DAY	3	2	3	2	3	3	2	3	3	3	3	30	BS
Rate- rate												25%	

Then, after being given treatment, namely the Montessori learning model, the author carried out a reassessment called a posttest. The data obtained are as follows:

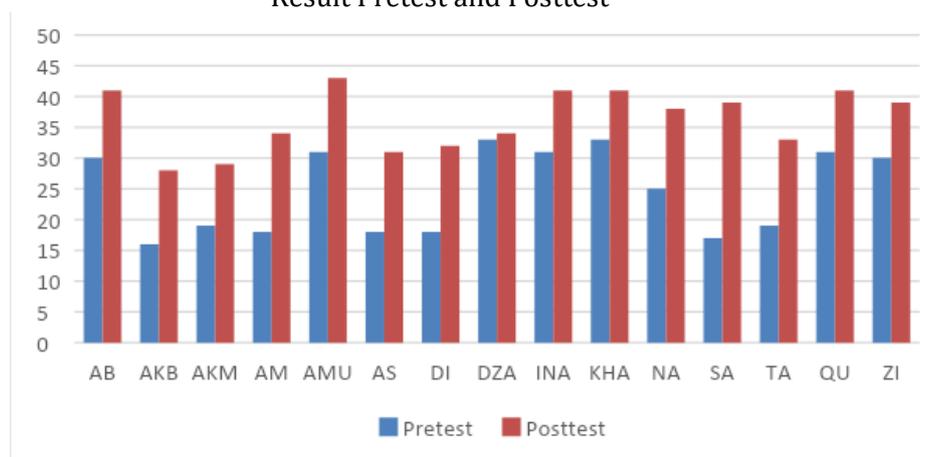
Table II
Posttest Results

No	1	2	3	4	5	6	7	8	9	10	11	Number of Values	IS
AB	4	4	3	3	4	4	3	4	4	4	4	41	BSB
AKB	3	2	2	3	3	3	2	3	2	3	2	28	BS
AKM	2	3	2	2	3	4	2	3	3	2	3	29	BS
AM	3	3	3	4	3	3	3	3	4	3	4	34	BS
AMU	4	4	4	3	4	4	4	4	4	4	4	43	BSB
AS	3	3	3	3	2	3	2	3	3	3	3	31	BS
FROM	3	3	3	3	4	2	2	3	3	3	3	32	BS

DZA	4	4	3	3	4	4	4	4	4	4	4	34	BSB
WHE N	4	3	4	3	4	4	3	4	4	4	4	41	BSB
BITTE R	3	4	3	4	4	4	4	3	4	4	4	41	BSB
THAT	3	4	3	3	4	4	3	4	3	3	4	38	BS
on	3	4	3	3	3	4	4	4	4	4	3	39	BSB
FACIN G	3	3	3	3	3	4	3	3	3	3	3	33	BS
WHA T	4	3	4	3	4	4	4	3	4	4	4	41	BSB
DAY	3	3	4	3	4	4	3	3	4	4	4	39	BSB
Rate- rate												36%	

In the research results based on observations after giving treatment, namely the Montessori learning model, Calistung abilities in children showed good results. This is proven by an increase in the average percentage in the assessments that have been carried out. The increase in Calistung ability scores in group B students at PAUD KB Permata Hati Way Kanan between before and after being given treatment, namely the Montessori method learning model, can be seen in the following graph:

Figure 1
Result Pretest and Posttest



Hypothesis testing

The research results obtained were based on data from observations before and after the treatment, so it can be seen that there is an influence of using the Montessori method on the reading, writing and arithmetic abilities of group B students at PAUD KB Permata Hati Way Kanan. Then a hypothesis test was carried out using the Wilcoxon test analysis using a computer system with the Statistical Program Series package (SPSS 20) using the "Z" test formula. For more details on the results of the data obtained can be seen in the following table:

Table 2
Wilcoxon Signed Ranks Test

		N	Mean Rank	Sum of Ranks
posttest	Negative Ranks	0 ^a	.00	.00
pretest	Positive Ranks	15 ^b	8.00	120.00
	Ties	0 ^c		
	Total	15		

a. posttest < pretest

b. posttest > pretest

c. posttest = pretest

Test Statistics^a

	posttest - pretest
WITH	-3.413 ^b
Asymp. Sig. (2-tailed)	.001

a. Wilcoxon Signed Ranks Test

b. Based on negative ranks

Based on the data obtained, it was found that positive ranks (+) = 8 and the number of negative ranks (-) = 0.

In decision making if $Z_{count} \leq Z_{table}$ means H_0 accepted and H_1 rejected, meaning that there is no influence of using the Montessori method on the Calistung abilities of group B students at PAUD KB Permata Hati Way Kanan. And if $Z_{count} \geq Z_{table}$ means H_0 rejected and H_1 accepted, meaning that there is an influence of using the Montessori method on the Calistung abilities of group B students at PAUD KB Permata Hati Way Kanan.

Based on data on the reading, writing and arithmetic abilities of group B students at PAUD KB Permata Hati Way Kanan, the Z value Z_{count} The results obtained are 3,4 and Z_{table} 1.635 then we get $Z_{count}(3,4) \geq Z_{table}(1,635)$ until H_0 rejected and H_1 accepted, meaning that there is an influence of the use of the Montessori method on the development of group B students at PAUD KB Permata Hati Way Kanan.

CONCLUSION

After explaining all the experimental results in detail, at the end of the discussion of this research, the author can state several conclusions as follows: The use of the Montessori method has an effect on the Calistung ability of group B students at PAUD KB Permata Hati Way Kanan. This is proven by the difference in average scores of 25% for the pretest and 36% for the posttest. There is a significant difference between the use of the Montessori method on Calistung's abilities and without the use of the Montessori method. By using the Wilcoxon difference test, it is proven that $Z_{count}(3,4) \geq Z_{table}(1,635)$ so H_0 rejected and H_1 accepted, meaning that there is an influence of using the Montessori method on the development of reading, writing and arithmetic in group B students at PAUD KB Permata Hati Way Kanan.

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