

THE EFFECT OF LOOSE PARTS ON COGNITIVE ABILITY PAUD CLASS A KINDERGARTEN AL AZHAR 63 PEKALONGAN

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Abstract. Children aged 4-6 years are included in the pre-operational stage where they have begun to show clear thinking processes, are able to recognize symbols, language, signs and images. Characteristics of children's behavior that shows their thinking ability is that they often ask a lot of questions, because children are driven by their high curiosity. Cognitive abilities of early childhood need to be developed continuously through learning. The teacher's role in the learning process is not only to provide information, but also to direct and provide learning facilities so that the learning process becomes more effective. The purpose of this study was to determine the effect of loose parts in improving the cognitive abilities of children aged 4-5 years in Al Azhar Islamic Kindergarten 63 Pekalongan, and to determine the differences in children's cognitive abilities before and after the application of loose parts in Class A Islamic Kindergarten Al Azhar 63 Pekalongan. This research is a quantitative research type of pre-experimental research with one group pretest-posttest design. The population in this study were 40 Class A students at Al Azhar Islamic Kindergarten 63 Pekalongan. The sample of this research is 20 students of Class A Abu Bakar or half of the population. The data analysis technique used the percentage score and t test. Cognitive abilities of grade A students at Islamic Kindergarten Al Azhar 63 Pekalongan who before and after applying loose parts seen from 14 aspects of indicators of cognitive abilities of children aged 4-5 years are known to increase, which previously in the category of starting to develop increased into the category of developing as expected. And there are also differences in cognitive abilities in children aged in class A Islamic Kindergarten Al Azhar 63 Pekalongan before and after applying loose parts, this is obtained from the results of the Independent T test obtained by Sig. (2-tailed) of 0.000 <0.05, then according to the basis of decision making in the independent sample t test, it can be concluded that H₀ is rejected and H_a is accepted. Judging from the pretest score, which obtained a score of 650 with an average value of 32.5 and the posttest score of 906 with an average value of 45.3.

Keywords: *Loose Parts, Cognitive Ability, Early Childhood*

INTRODUCTION

A child's cognitive development is categorized into several stages based on the child's age, and each stage represents the skills acquired in his or her age group. Piaget stated that the phase of children's cognitive development goes through four stages: the sensorimotor stage at the age of 0-2, the pre-operational stage at the age of 2-7 years, the concrete operational stage at the age of 8-11 years, and the operational stage at the age of 11 years and over (Suparno, 2001). Children aged 4-6 years are included in the pre-operational stage where they have started to show clear thought processes, are able to recognize symbols, language, signs and pictures. The characteristics of children's behavior that show their thinking ability are that they often ask a lot of questions, the reason being that children are motivated by their high curiosity. Based on this statement, the child has started to be driven to be curious about various objects in their environment. This early childhood cognitive ability needs to be developed continuously through learning. The role of the teacher in the learning process is not only providing information, but also directing and providing learning facilities so that the learning process becomes more effective.

Based on the results of observations at the Al-Azhar 63 Islamic Kindergarten and interviews with Mrs. Cynthia M.Pd, one of the teachers at the Kindergarten stated that the application of learning in Al Azhar 63 Islamic Kindergarten used classical learning. During the application of this learning method, children's achievements related to cognitive development in Kindergarten A began to develop. To stimulate the cognitive development of children aged 4-5 years, concrete media is needed that can generate creative ideas and solve problems, such as using loose parts media.

The research conducted by Maestri Sabrina entitled "The Effect of Loose Parts Media on the Development of Children's Creativity in Group B2 TK Bina Anak Bangsa Palu" found that the use of loose parts media was one of the strategies for developing children's creativity. In addition, the purpose of using loose parts media in early childhood is to realize scientific and creative thinking from an early age (Sabrina, 2021). Research conducted by Siskawati and Herawati entitled "Effectiveness of Loose Parts Media in Group A Early Childhood Education During the Home Study Period". According to the results of this study, loose parts media can make it easier for parents to accompany their children while studying from home and is quite effective in assisting teachers in providing material to children (Siskawati & Herawati, 2021).

Then research was conducted by Yulianti Fransiska and Roza Yenita entitled "Using Loose Parts Media in Learning During a Pandemic". The results of this study are that the use of loose parts at home during the pandemic will increase learning motivation and bring out children's creativity. In addition, children's curiosity becomes higher when playing with loose parts (Fransiska & Yenita, 2021).

There is also research conducted by Nursakdiah, et al entitled "Improving Children's Cognitive Development Through STEAM Learning Using Loose Part Materials in Children Aged 5-6 Years at TKIT Syekh Abdurrauf" yielded results, namely loose parts and STEAM can improve children's cognitive development.

Likewise the research conducted by Atika Zahra Furi and Harmawati entitled "Improving Cognitive Abilities Through the Application of Experimental Methods Using Loose Parts Media in Group B Children". Through the use of experimental techniques with loose materials, cognitive abilities were significantly improved in this study. The data obtained shows the achievement of the percentage indicator of 30% which is included in the sufficient criteria increases to 52% in cycle I and cycle II (Furi, 2019). In addition, research conducted by Azky Farida entitled "Using Loose Parts Media to Develop Early Childhood Creativity at PAUD Al-Musfiroh Gunung Sindur West Java", according to the results of his research, loose parts can develop children's creativity, children are able to solve problems by creative (Farida, 2020).

The difference between this research and previous research is that the first research was conducted by Maestri Sabrina entitled "The Effect of Loose Parts Media on the Development of Children's Creativity in Group B2 Kindergarten Bina Anak Bangsa Palu". learning media but also examines the effect of loose parts on children's cognitive abilities. The research conducted by Siskawati and Herawati entitled "Effectiveness of Loose Parts Media in Group A PAUD During Home Study Period" is different from the author's research because the journal research on the effectiveness of loose parts media is different from the author's research which looks at the impact of loose parts media on cognitive abilities child at school. Research conducted by Yulianti Fransiska and Roza Yenita entitled "Use of Loose Parts Media in Learning During a Pandemic". Then the research conducted by Atika Zahra Furi and Harmawati entitled "Improving Cognitive Abilities Through the Application of Experimental Methods Using Loose Parts Media in Group B Children", the difference in this study is that in the research the authors used a project-based method. Likewise the research conducted by Azky Farida entitled "Using Loose Parts Media to Develop Early Childhood Creativity at PAUD Al-Musfiroh Gunung Sindur, West Java", the difference in this study is that the authors focus on children's cognitive development not only on children's creativity.

METHODOLOGY

This type of research used in this research is Pre-Experimental with One Group Pretest-Posttest design using a quantitative approach. The research location is in Al Azhar 63 Pekalongan Islamic Kindergarten, the time of research is in September 2022. The population taken is Class A early childhood children or children aged 4-5 years in Al Azhar 63 Pekalongan Islamic Kindergarten, which is a total of 20 children.

The sampling technique uses a non-probability sampling technique with purposive sampling, namely the sample is determined deliberately by the researcher based on certain criteria or considerations so that it does not go through the selection process as is done in the random technique. Data collection techniques using observation methods, checklist tests and documentation. The instrument used in this study is a checklist sheet that contains a list of variables for which data will be collected. The behavior shown by the respondent will be given a tick by adjusting the column created.

The score criteria in this study are in the Undeveloped (BB) category with a score of 1, Starting to Develop (MB) with a score of 2, Developing According to Expectations (BSH) with a score of 3, and Very Well Developed (BSB) with a score of 4. Testing the validity of this research is by using the Pearson Product Moment formula. Items that are declared valid can then be used as a research instrument. The reliability test in this study uses the Alpha Cronbach formula, if the price of r_{11} is consulted with the r table with a significance level greater than 0.6, then the instrument is reliable. The hypothesis prerequisite test in this study is the normality test and homogeneity test. As for testing the hypothesis of this study using the Independent sample t-test.

RESULTS AND DISCUSSION

1.1 Overview of Research Locations

Al Azhar 63 Pekalongan Islamic Kindergarten is a kindergarten in Pekalongan City, precisely on Jalan Pelita II, Buaran Village, South Pekalongan District which was established on September 17 2019 under the auspices of the Sigma Mutiara Bunda foundation in collaboration with the Al Azhar Islamic Boarding School Foundation. At the beginning of its establishment, this school only had 2 classes, namely one TK class A and one TK class B, then in 2020 a Playgroup was established which was still under the same roof as the Al Azhar 63 Pekalongan Islamic Kindergarten and was known as the Al Azhar 63 Pekalongan Islamic Kindergarten.

1.2 Data and Discussion

1.2.1 Research Subjects

The subjects in this study were children aged 4-5 years in TK A Abu Bakar class consisting of 12 boys and 8 girls. The following is data on children aged 4-5 years in Kindergarten class A Abu Bakar Islamic Kindergarten Al Azhar 63 Pekalongan who were used as research samples.

No	Nama	Jenis Kelamin
1	ADA	L
2	AJW	P
3	AQR	P
4	AHM	L
5	CRA	P
6	GHP	P
7	HATA	L
8	KMA	P
9	MBA	P
10	MARP	L
11	MRA	L
12	MSAA	L
13	MSSI	L
14	MZEH	L
15	NZA	P
16	PAA	L
17	RMA	L
18	SAM	L
19	SRR	L
20	ZKV	P

Table 1. List of Research Subject Children

1.2.2 Description of Research Result Data

The research carried out obtained the pretest results before being given the treatment and the posttest results data after being given the treatment of applying loose parts during learning on the theme of plants, the sub-theme of ornamental plants. This research requires data in the form of children's behavior that shows their cognitive abilities according to the stages of development at the age of 4-5 years, so that it is in accordance with this study which discusses the effect of loose parts on the cognitive abilities of Class A children in Islamic Kindergarten Al Azhar 63 Pekalongan.

1.2.1.1 Pretest results

The researcher took the pretest data by filling out the observation sheet that had been designed. Before being given treatment or treatment, the results of the child's cognitive ability score before using loose parts were obtained with a total of 650 and an average of 32.5. From the results of observations, the cognitive abilities of children aged 4-5 years in Class A Abu Bakar are still in the developing stage.

1.2.1.2 Posttest results

When doing the posttest, the observation sheet used is the same as the observation sheet during the pretest. After giving treatment, the observation data on children's cognitive abilities obtained the lowest score of 33 and the highest score of 56 with a total score of 906 and an average of 45.3.

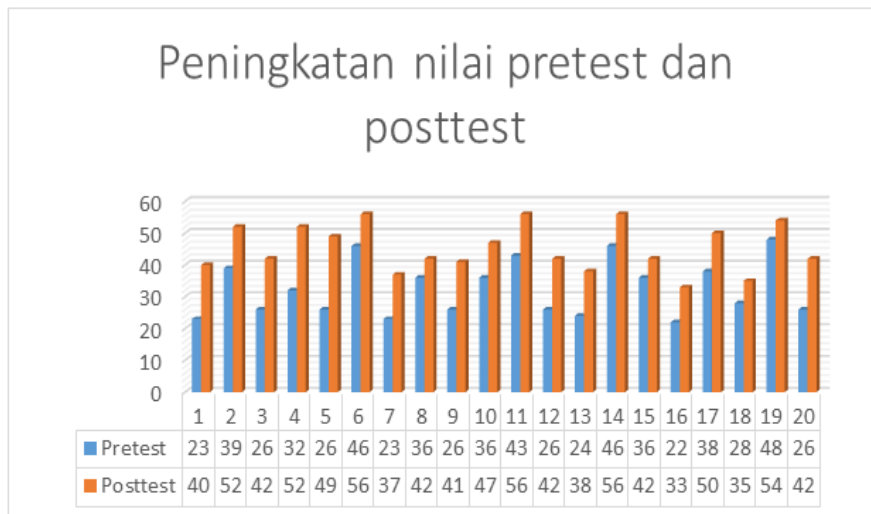
1.3 Data Analysis and Hypothesis Testing

This study used an independent t test to find out the difference in the groups that applied and did not apply loose parts. The results of the independent sample t-test are as follows:

No	Subject	<u>Skor</u> Pretest	<u>Skor</u> Posttest
1	ADA	23	40
2	AJW	39	52
3	AQR	26	42
4	AHM	32	52
5	CRA	26	49
6	GHP	46	56
7	HATA	23	37
8	KMA	36	42
9	MBA	26	41
10	MARP	36	47
11	MRA	43	56
12	MSAA	26	42
13	MSSI	24	38
14	MZEH	46	56
15	NZA	36	42
16	PAA	22	33
17	RMA	38	50
18	SAM	28	35
19	SRR	48	54
20	ZKV	26	42
<u>Jumlah</u>		650	906
Rata-rata		32,5	45,3

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Hasil	Equal variances assumed	.993	.325	-5.044	38	.000	-12.800	2.538	-17.937	-7.663
	Equal variances not assumed			-5.044	37.055	.000	-12.800	2.538	-17.942	-7.658

Based on the results table "Independent Samples Test" on "Equal Variances Assumed" it is known that the value of Sig. (2-tailed) of 0.000 < 0.05, according to the basis of decision making in the independent sample t test that H0 is rejected and Ha is accepted. So in conclusion, there is a real (significant) difference between the average cognitive ability of children in class A before and after applying loose parts so that the hypothesis reads "there is an effect of loose parts media in improving the cognitive abilities of early childhood class A in Al Azhar Islamic Kindergarten 63 Pekalongan. The diagram can be seen as below:



DISCUSSION

1.1 Application of loose parts in Al Azhar Islamic Kindergarten 63 Pekalongan

The learning process is in accordance with the design of the learning process that has been made before. Loose parts media used in this study included natural materials such as sand, shells, seeds, wood, leaves, etc. as well as artificial materials such as buttons, used plastic bottles, cardboard, straws, etc.

In the opening activity, children are invited to observe some of the ornamental plants that have been provided. Then the children are invited to discuss the types of ornamental plants, the characteristics of ornamental plants, and how to care for ornamental plants. After that, the children were invited to carry out core activities by implementing loose parts, including measuring plant height, decorating pots, stamping flower shapes, making letters and numbers with loose parts, and making garden projects with loose parts. Then in the closing activity, the children were invited to present their work using loose parts. The children were also invited to discuss the material on that day and then clean up the loose parts after they finished learning.

1.2 The effect of loose parts on the cognitive abilities of grade A early childhood children at the Islamic Kindergarten Al Azhar 63 Pekalongan

In this study, the initial step was to conduct a pretest to determine initial cognitive ability, then the researcher carried out treatment by providing learning activities by applying loose parts. The treatment was carried out 3 times. Furthermore, the results shown after the posttest were carried out, namely that there was an increase in aspects of the cognitive abilities of children aged 4-5 years compared to before being given treatment. Researchers give provocative questions to children and can be seen the level of achievement of the child's cognitive development. Researchers used indicators on aspects of cognitive abilities of children aged 4-5 according to STPPA Cognitive Development in the Minister of Education and Culture of the Republic of Indonesia No. 137 of 2014 as criteria for assessing children's cognitive abilities. After being given treatment with loose parts, children's cognitive abilities experienced a significant increase.

The results of testing the hypothesis with an independent T test obtained the value of Sig. (2-tailed) of $0.000 < 0.05$, then according to the basis of decision making in the independent sample t test it can be concluded that H_0 is rejected and H_a is accepted. Thus, it can be concluded that there is an effect of loose parts on the cognitive abilities of early childhood in class A Islamic Kindergarten Al Azhar 63 Pekalongan. This study shows that there is a significant effect on the cognitive abilities of class A children (age 4-5 years). Children's cognitive abilities after being given loose parts treatment increased compared to before using loose parts. This effect occurs because in activities that use loose parts, children get various sensory experiences, so that children know and explore their environment better.

CONCLUSION

The cognitive abilities of class A students at Islamic Kindergarten Al Azhar 63 Pekalongan before and after applying loose parts were seen from 14 aspects of indicators of the cognitive ability of children aged 4-5 years which were known to increase, which were previously in the starting to develop category, increasing to being in the developing category according to expectations. By using loose parts, the children look more interested and curious about the activities that will be carried out that day. Furthermore, there are differences in cognitive abilities in children aged in class A Islamic Kindergarten Al Azhar 63 Pekalongan before and after applying loose parts, this is obtained from the results of the Independent T test obtained by Sig. (2-tailed) of $0.000 < 0.05$, then according to the basis of decision making in the independent sample t test it can be concluded that H_0 is rejected and H_a is accepted. Thus, it can be concluded that there is an effect of loose parts on the cognitive abilities of early childhood in class A Islamic Kindergarten Al Azhar 63 Pekalongan

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