Prisma Sains: Jurnal Pengkajian Ilmu dan Pembelajaran Matematika dan IPA IKIP Mataram
https://e-journal.undikma.ac.id/index.php/prismasains/index
e-mail: prismasains.pkpsm@gmail.com

January 2023. Vol. 11, No. 1
p-ISSN: 2338-4530
e-ISSN: 2540-7899
pp. 94-101

The Effect of Cooking Class on the Cognitive Abilities of Group a Kindergarten Children in Cluster IV Gedangan Sidoarjo District

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Received: December 2022; Revised: December 2022; Published: January 2023

Abstract

This study aims to determine the effect of cooking class activities on the cognitive abilities of group A children in Cluster IV, Gedangan Sidoarjo District. This study uses a quasi-experimental design through a quantitative approach. The experimental design used was nonequivalent control group design. The subjects in this study were the children of group A RA Al Islah Karangbong with a total of 51 children as the experimental group and PAUD Tashwirul Afkar Karangbong with a total of 30 children as the control group. Data analysis techniques in this study used non-parametric statistics with the Mann Whitney Test. The results of this study indicate that "there is an effect of cooking class activities on the cognitive abilities of Group A kindergarten children in Cluster IV Gedangan Sidoarjo District" with a statistical value of Z = -4.076 with a significance level of 0.000 or less than 5%. This shows that there is an effect of cooking class activities on the cognitive abilities of Group A kindergarten children. Cooking class activities can be used as an interesting and fun learning reference for children in improving children's cognitive abilities because children get direct experience.

Keywords: cooking class, cognitive ability

How to Cite: Adhimah, S., Bachri, B., & Jannah, M. (2023). The Effect of Cooking Class on the Cognitive Abilities of Group a Kindergarten Children in Cluster IV Gedangan Sidoarjo District. *Prisma Sains : Jurnal Pengkajian Ilmu dan Pembelajaran Matematika dan IPA IKIP Mataram, 11*(1), 94-101. doi:https://doi.org/10.33394/j-ps.v11i1.6714

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INTRODUCTION

Early childhood is an individual who is experiencing a very rapid and fundamental development process for the next life. Early childhood is in the age range of 0-6 years and it is at this time that it is said to be the golden age of children because children experience a very fast and complex process of growth and development in their human lives (Susanto, 2011).

Educating early childhood must be in accordance with the stages of child development. This is because every child has different characteristics in their development. Given the importance of development in children, parents need to provide appropriate education for children in order for their next life.

In the development of early childhood, there are 6 aspects of development that must be developed by educators including aspects of religious and moral values, language, physical motor, social emotional, cognitive, and art. However, the discussion in this study is more about children's motoric and cognitive abilities.

Cognitive abilities in early childhood are very important, therefore, educators need to provide appropriate solutions for the growth and development of students. Based on Law no. 20 we can see that the education given to golden age children must be in accordance with the stages of growth and development and the provision of stimulation must be appropriate in

order to optimally grow the various potentials that children have (Montolalu, 2005). Age 0-6 years is an ideal time for children to learn certain skills because early childhood really likes to repeat the activities they are doing, so children are skilled quickly and early childhood are very fast in learning because their bodies are still easy to shape, so they can optimize its development (Cllaudia et al., 2018).

Cognitive ability is a child's learning ability in solving problems that are in front of him. According to Yusuf (2005) cognitive is the child's ability to think complexly and to do reasoning in problem solving. The development of cognitive abilities in children will make it easier for children to master knowledge in life in society. Children's cognitive abilities are intended so that children are able to explore the world around them through the five senses. With the knowledge they acquire, children will be able to solve the problems they face and children will become complete human beings according to their nature as creatures created by Allah SWT. In exploring knowledge, children will learn directly through the experiences they experience. According to the Minister of Education and Culture No. 137 of 2014, states that the standard level of achievement of cognitive development for children aged 4-5 years includes: 1) Classifying objects based on function, shape or color or size. 2) Recognize the causal symptoms associated with him. 3) Classify objects into the same group or similar groups or groups in pairs with 2 variations. 4) Get to know the pattern AB-AB and ABC-ABC) and repeat it. 5) Sort objects based on 5 series of sizes or colors (Kemendikbud, 2014).

The results of initial observations made by researchers at Group A Kindergarten Cluster IV, Gedangan Sidoarjo sub-district, are that since the Covid-19 pandemic, teaching and learning activities have been carried out online and play activities are still monotonous. This makes children less active and enthusiastic in the process of teaching and learning activities. The activities given by the teacher were only coloring and working on worksheets. During online learning, children's activities are always assisted by parents, so that children's abilities do not develop optimally. Another problem is that children still cannot distinguish between oval and circle shapes and distinguish between square and rectangular shapes. These problems have an impact on the lack of cognitive abilities of children. Some educators often think that the cognitive abilities of Kindergarten A children are not very important. Even though cognitive abilities are basic abilities that children must have so that children can adapt to the environment around them. This is because the learning carried out by the teacher is still very monotonous. So that children are less active in the process of teaching and learning activities and children have less direct experience of various types of geometric shapes.

In addition, researchers found similar cases in several schools in Papua. Children are only given activities that are less varied and children do not carry out new activities other than working on worksheets, and children lack experience in exploring because of limited tools and lack of government attention in children's education services. In addition, many children are not yet able to write. Even though at the age of 4-5 years, children are already able to write even if it's just simple scribbles and drawings, children at that age are also able to hold a pencil well. Then Harmawati (2019) conducted research by inviting early childhood education practitioners to discuss through the Math and Science Workshop to Stimulate PAUD Cognitive Through Fun Cooking Activities. The result of this workshop is to provide experience to teachers that fun cooking activities can provide experience and knowledge of math and science to students. In this case, cooking class activities can not only improve children's fine motor skills, but can also improve children's cognitive abilities.

The problem of this research is similar to the results of observations made in several schools in Papua, therefore the researcher tries to use cooking class activities as an alternative fun activity that can improve children's cognitive abilities. Cooking class is an activity that introduces children to the ingredients and tools used in cooking, besides that children can remember the steps in making food/drinks (Laely & Subiyanto, 2020). Cooking class is a vehicle to provide direct experience to children. This activity can directly build children's

creativity, introduce ingredients and cooking tools, and how to process food (Handayani, 2009).

Cooking class activities are activities that can arouse children's learning interest (Anggraheni, I., & Munip, 2019). This learning while playing activity is very suitable for children because cooking class activities are considered as effective activities that will add experience, knowledge, and solve problems built by themselves (Rasid et al.).

Cooking class activities can improve cognitive abilities in children. In this cooking class activity, the researcher asked the children to make fruit satay. When making fruit satay, children can recognize geometric shapes and children can recognize the concept of counting, besides that children will know the flavors in fruit. The child's ability to recognize these geometric shapes is related to the child's cognitive ability. Based on the background above, the researchers wanted to find out whether there was an effect of cooking class activities on the cognitive abilities of group A kindergarten children in Cluster IV, Gedangan District, Sidoarjo.

METHOD

This study used a quantitative approach with a Quasi Experimental research design with the Nonequivalent Control Group Design type. Type of research Nonequivalent Control Group Design is a study that divides into two groups with the same characteristics and characteristics, namely the experimental group and the control group. This type of research is almost the same as the Pretest-Posttest Control Group Design, only in this type the experimental group and control group are not randomly selected (Sugiyono, 2015). The Quasi Experimental research design with the Nonequivalent Control Group Design type can be described as follows:

O_1	X	O_2
O_3		O_4

Information:
O_1 = Pre-test results of the experimental group
X = Treatment
O_2 = Post-test results of the experimental group
O_3 = Pre-test result of the control group
O_4 = Post test results of the control group

The implementation of treatment with cooking class activities is carried out 3 times a week. The subjects of this study were conducted in two kindergartens, namely RA Al Islah Karangbong with 51 children as the experimental group and PAUD Tashwirul Afkar Karangbong with 30 children as the control group. The data collection technique in this study used structured observation in which the observation sheet instruments were systematically designed and arranged using an instrument grid and rubric criteria for assessing the cognitive abilities of Group A kindergarten children (Jannah, 2018). The data analysis technique used in this study used the Mann-Whitney Test.

RESULTS AND DISCUSSION

Result

This research was conducted in Group A Kindergartens in Cluster IV, Gedangan District, Sidoarjo Regency. The geographic location of the kindergarten in this study is in a rural area. The location of the research was at RA Al-Islah Karangbong as the experimental group and PAUD Tashwirul Afkar Karangbong as the control group. The characteristics possessed by the subjects of this study are as follows:

1. RA Al-Islah Karangbong and PAUD Tashwirul Afkar Karangbong are in one village and one organization in Gedangan District.
2. The research subjects are group A children with the same age background and the environment around the same children.

The subjects in this study were 81 children in group A consisting of 51 children from RA Al-Islah Karangbong students and 30 children from PAUD Tashwirul Afkar Karangbong students. This research used the experimental group as the class that received treatment using cooking class activities and the control group which was not given treatment.

Data from research on children's cognitive abilities were obtained through observations prepared by researchers. The cognitive ability instrument is measured by 2 indicators consisting of 2 items/items that will be assessed with an average score. The first indicator is getting to know geometric shapes with statement items including: 1) getting to know square shapes; 2) get to know the shape of the circle. The second indicator is calculating geometric shapes with statement items including: 1) calculating square shape images 1-5; 2) count the circle shape images 1-5. Following are the results of grouping the average value of cognitive abilities of Kindergarten A children using SPSS version 25.0 shown in Table 1.

Table 1. Results of Grouping Average Values of Cognitive Ability

Descriptive Statistics

Dependent Variable: Cognitive Ability

		Mean	Description	N
Cognitive Ability (Pre Test)	Experiment	1.39	BB	51
	Control	1.21	BB	30
	Total	1.3	BB	81
Cognitive Ability(Post Test)	Experiment	3.66	BSB	51
	Control	3.14	BSH	30
	Total	3.4	BSH	81

Based on Table 1, it is known that the results of the children's cognitive abilities (post test) in the control group have an average value of 3.14 in the "Developing According to Expectations" category. The results of the development of children's cognitive abilities (post test) in the experimental group had an average value of 3.66 which was included in the "Very Well Developed" category after receiving treatment using Cooking Class activities.

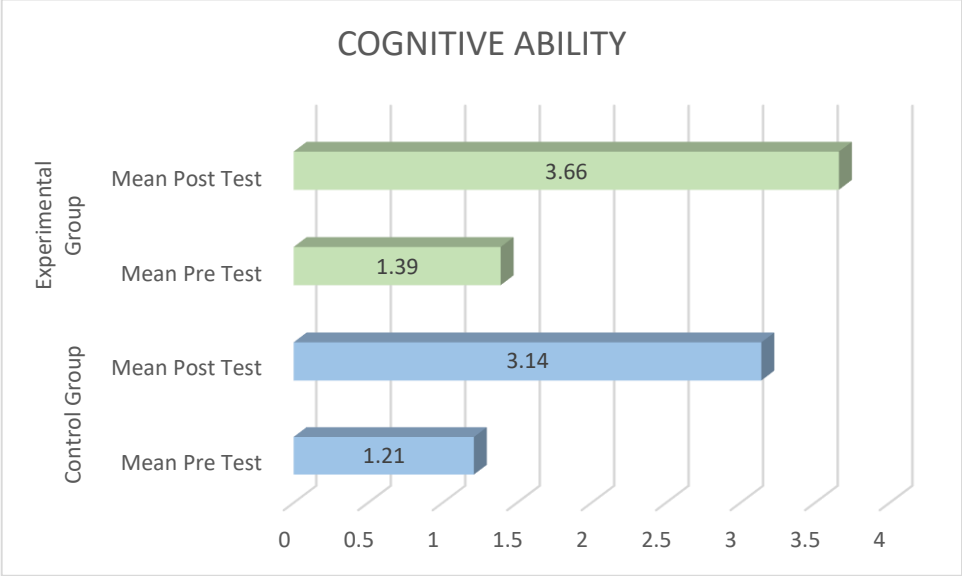

Figure 1. Comparison Chart of Average Cognitive Ability Scores Between Experiment Group and Control Group

Based on Figure 1, it can be seen that the value of cognitive ability in the experimental group has increased significantly compared to the control group. The conclusion in the picture is that Cooking Class activities are very effective for improving the cognitive abilities of group A children in Kindergarten Group IV, Gedangan District, Sidoarjo.

Before testing the hypothesis, the researcher tested the normality and homogeneity of the data. The normality test in this study used the Kolmogorov-Smirnov one sample. To determine whether the resulting data is normally distributed or not, it can be seen from the calculated p value for each variable to be studied. The test criterion is if the asymp.sig (2 tailed) value ≥ 0.05, then the data is normally distributed, otherwise if the asymp.sig (2 tailed) value is ≤ 0.05, then the data is not normally distributed. The following results of the normality test of several variables can be seen in Table 2.

Table 2. Data Normality Test Results

Variabel	Group	Kolmogorov-Smirnov[a]		
		Statistic	Df	Sig.
Cognitive Ability	Experimental Pretest	,212	51	,000
	Experimental Post test	,277	51	,000
	Control Pretest	,379	30	,000
	Control Post test	,303	30	,000

Based on Table 2, the results of the data normality test can be seen from the cognitive ability variables in the control group and the experimental group which have a significance value (p) less than 0.05, so the data generated from the study is declared not normally distributed.

The data homogeneity test was carried out to test the similarity of several sample sections. The homogeneity test of this study uses Levene Statistics. Following are the results of the homogeneity test in Table 3.

Table 3. Cognitive Ability Variable Homogeneity Test

Test of Homogeneity of Variances				
	Levene Statistic	df1	df2	Sig.
Cognitive Ability (Pre Test)	.674	1	79	.414
Cognitive Ability (Post Test)	1.295	1	79	.259

Source: Data processed by SPSS (2022)

Based on Table 3, the data homogeneity test can be seen from the Levene Statistical value on the pre-test and post-test cognitive ability variables which have a significance level value greater than 0.05, so it can be said that the data is homogeneous and the assumptions of homogeneity have been fulfilled.

Based on the results of the normality and homogeneity tests that have been carried out in the control group and the experimental group, it shows that the data is not normally distributed and is homogeneous. For this reason, the statistical test used is non-parametric statistics using the Mann-Whitney test of difference (Sugiyono, 2015).

This study uses the Mann Whitney Test data analysis technique to test data that is not normally distributed. In this study, the hypothesis reads "There is an effect of cooking class activities on the cognitive abilities of Group A kindergarten children in Cluster IV, Gedangan

Sidoarjo District". Following are the results of the statistical analysis of the Mann-Whitney Test using SPSS 25.0.

Table 4. Hypothesis Test Results

Test Statistics[a]		
	Cognitive Ability (Pre Test)	Cognitive Ability (Post Test)
Mann-Whitney U	523,500	366,000
Wilcoxon W	988,500	831,000
Z	-2,502	-4,076
Asymp. Sig. (2-tailed)	,012	,000

a. Grouping Variable: Group

The results of the calculations in Table 4 show that the Mann-Whitney Test value is -4.076 with a significant level (sig) of 0.000 which means less than 0.05 or 5%. This proves that the first hypothesis which reads "There is an effect of cooking class activities on the cognitive abilities of Group A kindergarten children in Cluster IV Gedangan Sidoarjo District" has been proven.

Discussion

This research was conducted with the aim of knowing the effect of cooking class activities on the cognitive abilities of group A kindergarten children in Cluster IV, Gedangan Sidoarjo District with 81 children as research subjects consisting of 51 children from the RA Al-Islah Karangbong experiment group and 30 children from the Tashwirul Afkar PAUD control group. Karangbong.

Based on the results of the study, it proved that there was a significant difference in the experimental group and the control group. This can be seen in the increase in the average value of children's cognitive abilities in the final observations. In the experimental group, the average value of children's cognitive abilities increased by 3.66, while in the control group, the average value of cognitive abilities was 3.14. It can be concluded that the results obtained in this observation indicate an increase in the cognitive abilities of group A RA Al-Islah Karangbong kindergarten children and Tashwirul Afkar Karangbong PAUD.

To prove whether cooking class activities affect cognitive abilities, the Mann Whitney Test was carried out. The data analyzed were post-test activities in the experimental and control groups. Based on the results of the Mann Whitney Test, a value of -4.076 was obtained with a significance level (sig) of 0.000 which proved to be less than 0.05 (5%). This proves that there is a significant difference in cognitive abilities between the experimental group and the control group. It can be stated that Ha is accepted, which means that "There is an effect of cooking class activities on the cognitive abilities of Group A kindergarten children in Cluster IV Gedangan Sidoarjo District" has been proven.

Based on the results of testing the hypothesis it is proven that there is an effect of cooking class activities on the cognitive abilities of Group A Kindergarten children in Cluster IV, Gedangan Sidoarjo District. Cognitive ability is an important ability that must be achieved by children. According to Hayati, N., & Cholimah, N. (2017) revealed that cognitive can be interpreted as learning abilities, thinking in learning new skills and concepts, skills to understand what is happening in their environment, as well as skills to use memory and solve simple problems.

This cooking class activity has been carried out in the TK A group at RA Al-Islah Karangbong and PAUD Tashwirul Afkar Karangbong and has an influence on children's cognitive abilities, especially in recognizing and classifying square and circle shapes, and counting the number of square and circle shapes. According to Sukerti (2008) cooking class activities are learning to know and be skilled in processing food with various techniques and to know how to make food that is good and safe for consumption.

The results of research conducted at Group A Kindergarten in Cluster IV Gedangan Sidoarjo District are supported by a study conducted by Harmawati (2019) that cooking class activities provide experience and knowledge of math and science to children. Cooking class activities can improve children's memory in processing food ingredients. In addition, the cooking class activities that have been carried out at RA Al-Islah Karangbong and PAUD Tashwirul Afkar Karangbong have an influence on children's cognitive abilities. Cooking class activities have been implemented for children with fun fruit satay making activities. Making fruit skewers is an activity that provides direct knowledge and experience to children and stimulates children to act actively. This is in line with the thoughts given by Drummond (2011) that the purpose of cooking class activities is to develop expression through various existing media by using the muscles of the fingers and coordination between the eyes and hands, as well as growing children's imagination and creativity. This is also in line with Piaget's theory (Setting, 2014) which states that every child will build his own knowledge because of experience and active interaction with the surrounding environment.

Based on this statement, the implementation of cooking classes for kindergarten group A children at RA Al-Islah Karangbong and PAUD Tashwirul Afkar Karangbong is very useful, especially in improving cognitive abilities in children because children can remember the events they experienced and the steps when making fruit satay. with square and circle shapes, besides that children also learn patterns and good counting concepts. It can be concluded that the cooking class activity is an activity that greatly influences children's cognitive abilities.

CONCLUSION

Based on the results of the analysis and discussion that has been carried out in this study, the researchers concluded that there was an effect of cooking class activities on the cognitive abilities of group A kindergarten children in Cluster IV, Sidoarjo District. This is evidenced by the average value of the cognitive abilities of the experimental group when the pre-test was carried out, namely 1.39 and after being given treatment, the post-test average value was 3.66. The average value of cognitive abilities in the control group during the pretest obtained a value of 1.21 and after being given treatment it obtained a posttest value of 3.14. In addition, based on the results of testing the hypothesis on fine motor skills, the Mann Whitney Test value was obtained, namely -4.076 with a significant level (sig) of 0.000 meaning less than 0.05 (5%). So it is proven that there is an effect of cooking class activities on fine motor and cognitive abilities of Group A Kindergarten children in Cluster IV, Gedangan District, Sidoarjo.

RECOMMENDATION

For future researchers, it is hoped that this research can be refined with new innovations and become a reference in research, especially on the cognitive abilities of kindergarten children. In this study only introduced square and circle shapes, so it is hoped that further research can introduce other geometric shapes in cooking class activities, especially making fruit satay so that this research develops to be more perfect. Besides that, in cooking class activities, children do not only develop cognitive aspects, it is necessary to conduct cooking class research that addresses other aspects of child development such as motor, artistic, and social-emotional aspects of children. This should be used as insight by educational practitioners in developing aspects of child development in fun cooking class activities.

ACKNOWLEDGMENT

Thank you to the Cluster IV Early Childhood Education Unit, Gedangan Sidoarjo District, especially RA Al Islah Karangbong and PAUD Tashwirul Afkar who have given permission and supported the implementation of this research. Hopefully this research can be useful and broaden the knowledge of teachers regarding fun learning activities for children.

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