



The Improving of Children's Cognitive Ability on Demonstration Method of Origami Crease

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DOI: <http://dx.doi.org/10.15294/ijeces.v10i2.44727>

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History Article

Submitted August 2021
Revised September 2021
Accepted October 2021

Keywords:

Cognitive; crease; origami;
method; demonstration

Abstract

The improving of children's cognitive ability through demonstration method of origami crease in wulele sanggula at group B state of kindergarten 2. This study aims to improving of children's cognitive ability through demonstration method of origami crease in wulele sanggula at group B state of kindergarten 2. This type of the research is Classroom Action Research. This research was conducted in two cycles. The stages in this study follows the classroom action research procedures, namely: (1) planning, (2) implementation the action, (3) observation and (4) reflection. The subjects in this study were teachers and childrens in Wulele Sanggula at Group B State of Kindergarten 2, totaling 15 children consist of 6 girls and 9 boys. Based on the analysis of data from teacher teaching activities at the first cycle in amounting 15 aspects getting percentage of achievement in the amount of 86,66% or 13 aspect that achieved, the children's learning activity at the first cycle from 15 aspect getting percentage of achievement in the amount of 80% or 12 aspect that achieved and from the children's learning in improving of children's cognitive ability through demonstration method of origami crease getting percentage of achievement in the amount of 66,67% or 10 students. The result of teacher teaching activities at the second cycle increasing by getting percentage of achievement in the amount of 93,33% or 14 aspect that achieved, and the result of children's learning to improving of children's cognitive ability through demonstration method of origami crease getting percentage of achievement in the amount of 86,66%. Thus it can be concluded that children's cognitive ability can be improving through demonstration method of origami crease in wulele sanggula at group B state of kindergarten 2.

How to cite

Asmuddin, & Salwiah. (2021). The Improving Of Children's Cognitive Ability On Demonstration Method Of Origami Crease. *Indonesian Journal of Early Childhood Education Studies*, 10(2), 103-110.

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INTRODUCTION

Education is a conscious and planned effort to create an atmosphere of learning and the learning process so that students actively develop their potential to have spiritual strength, self-control, personality, intelligence, noble character, and skills needed by themselves, society, nation and state (Yufiarti, 2008:1.3). The education program for children is one of the components in the implementation of early childhood education, the existence of this program is very important because through this program all planning, implementation, development, assessment can be controlled. Early childhood is an individual who is experiencing a very rapid process of growth and development and as a developmental leap so that it is said to be the golden age, namely the golden age. Childhood is a period of forming the foundation of personality that determines the next child's experiences. One of the abilities that must be developed in early childhood is mathematical-logical abilities, especially the ability to recognize geometric shapes so that children can know the shapes of objects around them.

The golden age is a period of physical and brain development of children, at this time an important stimulus is needed to stimulate both physical and psychological growth of children, because at that time (golden age) only occurs once in the development of human life. Wiwien Dinar (2008: 56), states that at the golden age is a critical period in which a child needs the right stimuli to reach perfect maturity. So in this time and situation it is very useful to stimulate and develop and strengthen children's intelligence with useful knowledge and skills for life.

One of the abilities that must be developed is in the field of cognitive development. In the aspect of cognitive development, the competence and learning outcomes expected in children are that children are able and have the ability to think logically, think critically, and give reasons, be able to problems solve and find causal relationships in their problems solving. Should this cognitive development area be able to develop its creative power freely, either through the scribbles they make themselves, the stories they tell, and other works of art. How to develop cognitive aspects can be done in various ways, including the teacher interacting with children individually and with small groups in all planned activities. Teacher planning that children can choose to optimize their abilities and skills about what they can do on their own.

LITERATURE REVIEW

Understanding Cognitive Ability

Susanto (2011: 48), explains that cognitive is a process of thinking, namely the ability of individuals to connect, assess, and consider an event. So the cognitive process is related to the level of intelligence which marks a person with various interests, especially aimed at learning ideas. Colvin (in Yuliani, 2008:15), defines cognitive as the ability to adapt to the environment. Vygotsky in (Moeslichatoen, 2004: 17), explains that cognitive is the ability to pay attention, observe, remember, and reasoning involves learning by using society findings such as language, mathematical systems and memory tools. Piaget in (Yuliani, 2005: 3.3), suggests that cognitive is how children adapt and interpret objects and events around them. Chaplin in (Asrori; 2014: 36), says that cognition is a general concept that includes all forms of knowing, including observing, seeing, paying attention, giving, thinking, imagining, estimating, predicting, and assessment.

Cognitive can also be defined as the ability to learn or think or intelligence, namely the ability to learn new skills and concepts, the skills to understand what is happening in the environment, and the skills to use memory and solve simple questions (Pudjiati & Masykouri, 2015:6). Maslihah (2005), states that cognitive itself can be interpreted as the ability to understand something. This means understanding shows the ability to grasp the nature, meaning, or information about something and has a clear picture of it. Mansur (2011), states that the term cognition is interpreted as a strategy for organizing the environment and a strategy to reduce the complexity of the world.

The stages of cognitive development

Jean Piaget (in Novi Mulyani, 2018: 45), explains that there are four stages of cognitive development in children. These stages are:

a. Stages of motor sensory (around 0-2 years)

At this stage, the baby uses sensory organs and motor skills to understand the world around him. The baby progresses from simple reflexes to more organized schematic steps.

b. Stage of pre-operational (2-7 years)

In this stage, children can make perceptual and motoric adjustments to objects and events that are presented in the form of symbols (mental images, words, cues) in improving organizational and logical forms.

c. Stages of operational concrete (about

7-11 years)

In this stage the child gets a certain logical structure that enables him to carry out it as a kind of "mental operation", which is an internalized action that can be issued if necessary. Children carry out this operation concretely.

d. Stage of operational (11-15 years)

In this stage, mental operations no longer only reach reality, but also various possibilities, reaching not only the present reality, but also the future.

The Factors that influence to Children Cognitive Development

Ahmad Susanto (2011: 59-60), factors that can influence cognitive development include: (a) heredity factors, namely that humans who are born have brought certain potentials that cannot be influenced by the environment. The level of intelligence has been determined from birth, (b) environmental factors, namely humans are born in a holy state such as white paper that has not been tarnished, known as the Tabula theory, (c) the maturity factor, namely each organ (physical or psychological) is said to be mature if it has reached the ability to run their respective functions, (c) formation factors, namely all circumstances outside the person that affect the development of intelligence.

Understanding of Demonstration Method

The demonstration method is a demonstration of the process the occurrence of an event or object to the appearance an exemplary behavior so that students can know and understand it in real or imitation (Djamarah, 2008:210). The demonstration method is teaching by demonstrating items, events, rules, and the sequence of carrying out an activity, either directly or through the use of relevant teaching media (Syah, 2000: 22). Djamarah, (2000:2), that the demonstration method is a method used to show a process or the workings of an object with regard to the subject matter. With the demonstration method, students have the opportunity to develop the ability to observe all objects that are involved in the process and be able to draw conclusions that are expected in learning.

Understanding of Folding Origami

Hira Karmachela, (2008:1), argues that the word of origami comes from Japan, namely from the word oru which means to fold and we mean paper. When the two words are combined there is a slight change but does not change the meaning, namely from the word we become gami so

that it is not orikami but origami, which is paper folding. Sumanto, (2003:97), folding or origami is a technique of creating arts / crafts which are generally made of paper with the aim of producing various forms of play, decorations, functional objects, props and other creations. Regarding folding activities, Hira Karmachela argues (2008:23), the art of folding paper is an art that is very suitable for children because origami trains children's hand skills. Also neat in creation. In addition, children will get used to creating new things or innovations. Folding is essentially a skill hand to create certain shapes without using glue adhesive and this accuracy requires hand coordination skills, accuracy and neatness, in folding activities if presented with children's interest which will provide joy and satisfaction for children.

Folding paper is something that is very fun for children because it can be made of anything, from simple folding activities such as triangles, rectangles, to more difficult shapes. The motion that is trained from this folding activity. is how the child folds and presses the folds because this activity will strengthen the muscles of the palms and fingers of the child (Aisyah, 2008). Paper folding is an easy to make and fun art activity. Among its roles is as an activity to fill spare time and a medium of teaching and communication with children because it is usually done together. In addition, paper folding is also very functional for children and this activity has the function of training fine motor skills during their development (Maya Hirai, 2010).

RESEARCH METHODS

Types of research

The type of research used in this research is Classroom Action Research. According to Suharsimi Arikunto (2008:3), classroom action research is an examination of learning activities in the form of actions that are deliberately raised and occur in a class together.

Research subject

The subjects in this study were all children of wulele sanggula at group B state of kindergarten 2, totaling 15 children, consist of 10 boys and 5 girls.

Data collection technique

1. Observation Sheet (Cheklist)

Observation is a technique that teachers can use to obtain various information or data about children's development and problems through observation, the teacher can find out

how changes have occurred in children within a certain period of time (Wahyudin and Agustin, 2011: 59).

2. Interview Guidelines

The interview is a data collection technique that can be used to obtain information about children's development and problems by having direct conversations, both with children and parents (Wahyudin and Agustin, 2011: 62).

3. Documentation

Documentation is a record of events that have passed. Documentation can be in the form of writing, pictures or someone's result. Documentation is used to obtain the necessary data in the form of written documentation of students during the learning process.

Data analysis technique

In this study using descriptive data analysis which is intended to provide an overview of cognitive abilities through the folding origami demonstration method.

Table 1. List of Children's Values

Interval	Statement	Symbol of Stars
3,50 - 4,00	Developing by excellent	****
2,50 - 3,49	Developing according to expectation	***
1,50 - 2,49	Just Developing	**
1,00 - 1,49	Under Developing	*

Explanation of the symbols:

- **** = Developing by Excellent.
- *** = Developing according to Expectations.
- ** = Starting to Developing.
- * = Under Developing.

Based on the formula above, classical percentages can be grouped as follows:

Table 2. Percentage Category

Percentage	Statement
95% - 100%	Developing by Excellent
85% - 94%	Developing According to Expectation
75% - 84%	Just Developing
< 75%	Under Developing

Explanation of the symbols:

- **** = Developing by Excellent.
- *** = Developing according to Expectations.

- ** = Starting to Developing.
- * = Under Developing.

THE RESULTS OF THE RESEARCH AND DISCUSSION

The Results of Teacher Teaching Activities Observation in the First Cycle

The results of teacher teaching activities observations analysis consisted of 15 aspects that observed had to be achieved by the teacher at the first meeting. The score of the results achieved by the teacher was 66.66% or 15 aspects from the 10 aspects that observed. While the aspects that were not implemented based on the observation sheet, namely 33.34% or 5 aspects. At the second meeting the score of the results of the learning process achieved by the teacher was 80% or 12 aspects of the 15 that observed. While the aspects that were unachieved based on the observation sheet were 20% or 3 aspects. At the third meeting the score of the results of the implementation learning process achieved by the teacher was 80% or 12 aspects from the 15 aspects that observed. While the aspects that were unachieved based on the observation sheet were 20% or 3 aspects. At the fourth meeting the score of the results of the implementation learning process achieved by the teacher was 86.66% or 13 aspects from the 15 aspects that observed. While the aspects that were unachieved based on the observation sheet were 13.34% or 2 aspects.

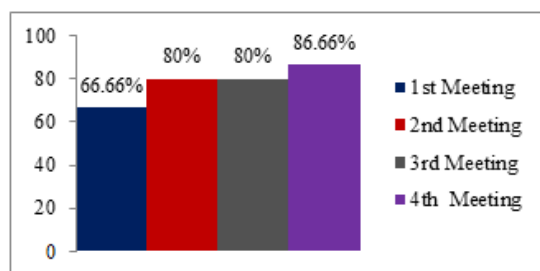


Figure 1. Histogram the Results of Teacher Teaching Activity Analysis at the First Cycle

The Results of Children Learning Activities Observation of in the First Cycle

In the learning process of first cycle, the children learning activities who are observed using the observation sheet of children's learning activities consist of 15 aspects. The results analysis of children's learning outcomes activities at the second meeting achieved by children was 60% or from 15 aspects only 9 aspects were implemented. Meanwhile, what were unachieved were 6 aspects with a percentage of 40%. The re-

sults observations analysis of students' activities at the second meeting based on the observation sheet that achieved was 66.66% or 10 aspects. While what was unachieved was 33.34% or 5 aspects. The results observations analysis of students' activities in the third meeting based on the observation sheet that achieved was 73.33% or 11 aspects. Meanwhile, that unachieved was 26.67% or 4 aspects. The results observations analysis of students' activities at the fourth meeting based on the observation sheet that achieved was 80% or 12 aspects. Meanwhile, that unachieved was 20% or 3 aspects. For more details, see the following histogram:

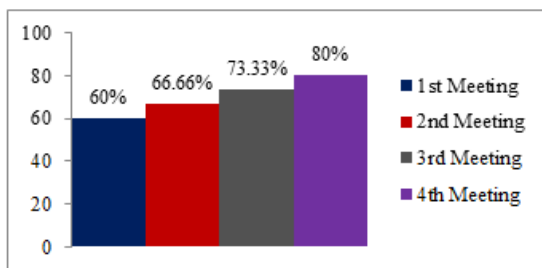


Figure 2. Histogram the Results of Children's Learning Activities Analysis in the First Cycle

Based on the histogram, it can be seen that the children's learning activities in the first cycle of the first meeting were 60%, second meeting was 66.66%, third meeting was 73.33%, and fourth meeting was 80%. Thus, children's learning activities in first cycle have unreached to the assessment indicators. The researcher of teacher in the group B at kindergarten Wulele Sanggula 2 conducted an evaluation or assessment at the end of the cycle. This is done to determine how to improve children's cognitive abilities through demonstration methods of folding origami based on themes / sub themes. In achieving success, students are grouped into four categories, namely Developing by Excellent, Developing According to Expectations, Just Developing, and under Developing. To find out the results of individual calculations in the first cycle can be seen in table 4. below.

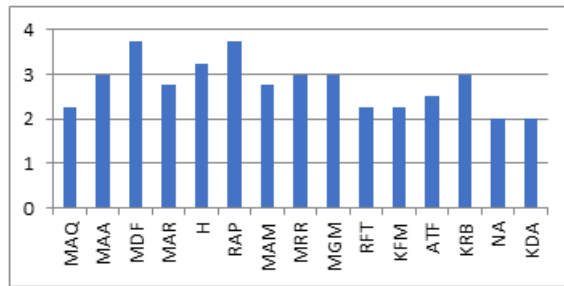


Figure 3. Histogram of Children's Values in the First Cycle

The initial assessment results in the following table:

Table 3. Percentage in the First Cycle

Interval	Category	Fre-quensi	Percent-age
3,50 – 4,00	Developing by Ex-cel-lent	2	13,33%
2,50 – 3,49	Developing Ac-cord-ing to Expec-tation	8	53,33%
1,50 – 2,49	Just Developing	5	33,33%
1,00 – 1,49	Under Developing	0	0%
Total		15	100%

Explanation of the symbols:

- **** = Developing by Excellent.
- *** = Developing according to Expectations.
- ** = Starting to Developing.
- * = Under Developing.

Based on table 3, there are 2 students getting a value of 3.50-4.00 (13.33%), 8 students getting a score of 2.50-3.49 (53.33%), 5 students getting a value of 1.50 -2.49 (33.33%) and an average of 38.5 (Developing by Excellent) or 3 stars. Based on tables 3 and 4, the following histogram can be made:

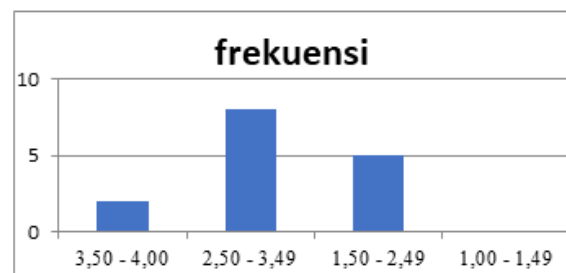


Figure 4. Histogram of Percentage in the First Cycle

Based on the acquisition of children's scores, it can be stated that the activity of folding origami in improving the children cognitive abilities in group B kindergarten Wulele Sanggula 2, the classical percentage category in the first cycle reached a percentage level of 66.66% or as many as 10 children, 2 children obtained Developing by Excellent scores with a percentage of 13,33% and 8 children obtained Developing According to Expectations with a percentage of 53.33%.

The Results of Teacher Teaching Activities Observation in the Second Cycle

The results of teacher teaching activities observations analysis consisted of 16 aspects that observed had to be achieved by the teacher in the first cycle. The score of the results achieved by the teacher was 80% or 12 aspects of the 15 aspects observed. While the aspects that were unimplemented were based on the observation sheet, namely 20% or 3 aspects of the 15 aspects that observed. At the second meeting the score results of the implementation of the learning process achieved by the teacher was 80% or 12 aspects of the 18 aspects that observed. Meanwhile, what was unachieved was 20% or 3 aspects. At the third meeting the score of the results of the implementation of the learning process achieved by the teacher was 86.66% or 12 aspects from the 15 aspects that observed. Meanwhile, what was unachieved was 13.34% or 2 aspects. At the fourth meeting the score of the results of the implementation learning process achieved by the teacher was 93.33% or 14 aspects from the 15 aspects that observed. Meanwhile, what was unachieved was 6.67 or 1 aspect, namely (a) conveying the objectives of the activity.

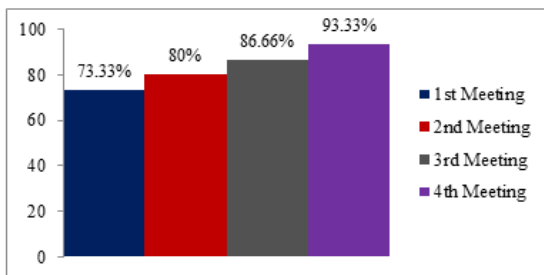


Figure 5. Histogram the Results of Student Learning Activities Analysis in the Second Cycle
Based on Table 3, the frequency distribution is made as follows:

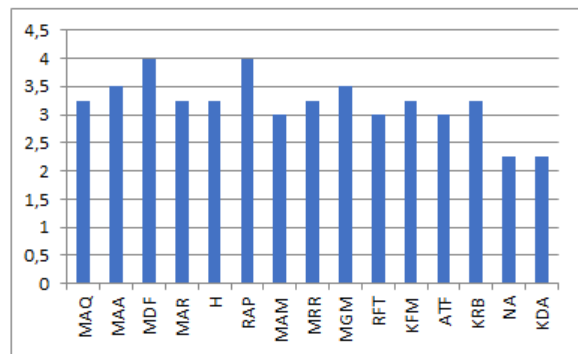


Figure 6. Histograms of Children's Values in the Second Cycle

The results initial assessment in the following table:

Table 4. Percentage of Second Cycle

Interval	Statement	Frequency	Percentage
3,50 – 4,00	Developing by Excellent	4	26,66%
2,50 – 3,49	Developing According to Expectation	9	60%
1,50 – 2,49	Just Developing	2	13,33%
1,00 – 1,49	Under Developing	0	0%
Jumlah		15	100%

Explanation of the symbols:

- **** = Developing by Excellent.
- *** = Developing according to Expectations.
- ** = Starting to Developing.
- * = Under Developing.

Based on the table 4, students getting a score of 3.50-4.00 (26.66%), 9 students getting a score of 2.50-3.49 (60%), 2 students getting a score of 1.50-2, 49 (13.33%) and an average of 3.2 (BSH) or 3 stars.

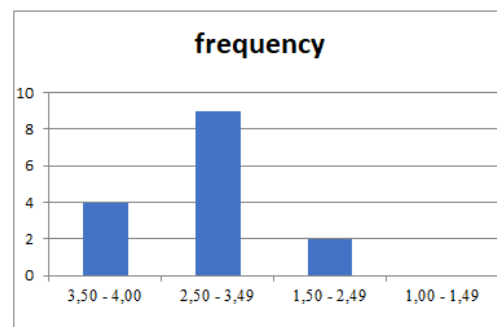


Figure 7. Histogram Percentage of Second Cycle

Although there are still 2 students who getting scores of star (**) or Just Developing, it can be said that most students are considered to be able to complete the assigned tasks according to the assessment indicators in research, especially in the implementation of the second cycle. In addition, 13 students achieved a score of 86.66%, so in general it can be said that the program of activities or a series of implementation of learning in improving children's cognitive abilities through demonstration methods of folding origami in group B kindergarten Wulele Sanggula 2 was implemented and achieving the research target, namely the indicator of success or performance indicators of 85%.

THE RESULTS OF THE RESEARCH DISCUSSION

After making improvements in the second cycle, it turned out that the results obtained had a significant increase in activities to improve children's cognitive abilities through the folding origami demonstration method. This is because of teacher performance activities have increased from 68.75% to 87.5% because of only 2 teacher activities uncarried out, namely (1) the teacher divides the children into several groups and (2) the teacher assignments to each group. The increased teacher performance activity made children's learning activities also increased from 73.33 to 86.66%, because of only 2 children's activities were not carried out, namely: (1) children formed groups (2) children enthusiastically asked questions. The increased performance activities of teachers and children have a positive influence on children's learning outcomes.

The results of learning achievement of children in in the first cycle obtained a percentage of 66.67% or 10 from 15 children, where there were 2 children who got a star rating (****) or Developing by Excellent and 8 children got a star rating (* **) or Developing According to Expectations, while 33.67% or 5 out of 15 children have unachieved it, where there are 5 children who get a star rating (**) or Just Developing. While the results of children learning achievement in the second cycle obtained a percentage of 86.67% or 13 from 15 children, where there 4 children who got star scores (****) or Developing by Excellent and 9 children who got star scores (***) or Developing According to Expectations, while those who were unachieved were 13.33% or 2 children who got a star rating (**) or were in the Just Developing category. Analysis of the success of classical classroom action research and the results obtained are

as shown in the following diagram:

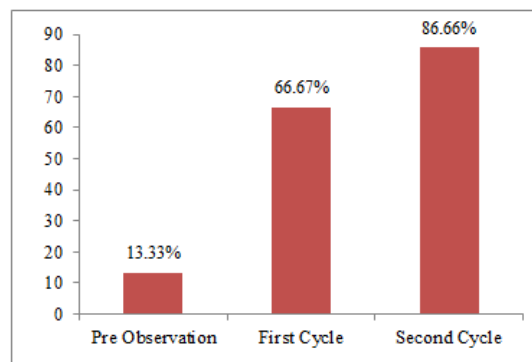


Figure 8. Histograms of the Results of Children's Cognitive Ability Improvement Analysis through the Origami Folding Demonstration Method.

The children cognitive ability through the demonstration method of folding origami from the implementation in the first cycle was 66.67%, when compared to the initial observation stage of the research which only reached 13.33%. In the second cycle of action it reached a percentage of 86.66%, the results shows that more better than before, because the set performance indicator has been achieved, namely 85%, this research can be stopped.

CONCLUSION

Based on the results of children's activities observations and the results of research that have been carried out, the following conclusions can be shows: 1). The learning process from first cycle to second cycle is getting better. 2). Learning activities by using the demonstration method of folding origami in improving children's cognitive abilities are increasingly active where the children learning outcomes in the first cycle are 66.67%, while in the second cycle it is 86.67% or Developing According to Expectations category. 3). The learning process by using effectively to improve children's cognitive abilities through the demonstration method of folding origami is very effective. Thus it can be concluded that the demonstration method of folding origami can be improved of children cognitive abilities in group B kindergarten Wulele Sanggula 2.

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