

## Application of Exploration of Geometry Shapes with Various Media to Improve Learning Outcomes Masjid Raya Islamic Kindergarten students

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**Abstract,** The goal to be achieved in this research is to improve the learning outcomes of Islamic Kindergarten students at the Grand Mosque by exploring geometric shapes. The research will be conducted in two cycles in August 2021 and September 2021. The research tool uses Learning Outcomes tables and Observation tables. The learning achievement table is used to record quantitative data on student learning outcomes before and after the cycle. Observation sheets are used to record qualitative data in the form of observations of student participation in learning activities before and after the cycle. Data analysis used descriptive analysis techniques. Quantitative data in the Learning Outcomes table is processed using percentage analysis. Qualitative data from the observation table, categorized according to the aspects that are used as the focus of analysis. Quantitative and qualitative data are then linked as a basis for describing the successful application of various learning media which is marked by an increase in learning outcomes of geometric shapes and in line with changes in engagement (student behavior in the classroom). Quantitative data collection standard performance indicators show that students in the above categories are getting more and more geometric shape learning outcomes, indicating an increase in learning quality standards. Performance indicators from qualitative data determined that increased student engagement and positive attitudes, both qualitatively and quantitatively, were indicators of increased active learning from cycle to cycle. The results showed that student learning outcomes increased from cycle to cycle. The standard of student engagement increases each cycle along with the increase in student learning outcomes. This was marked by an increase in the percentage of student learning outcomes that obtained criteria scores 4 and 5. After the first cycle it rose very sharply, students who scored 4 and 5 reached 2.6 % ( 9 children) and 24 % ( 8 children) at the time before cycle. A score of 5 was 7 people ( 21 %), who got a score of 4 were 9 students (26 %) and who got a score of 3 were 18 students (53 %) in cycle I and increased to as many as 25 students got a score of 5 ( 74 %) ) and as many as 9 students get a score of 4 (26 %) in cycle II.

**Keywords :** Learning Media, Learning, Geometry Forms

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### I. INTRODUCTION

In an empirical context, many Kindergarten (TK) students do not master the material for learning geometric shapes. The teachers also had difficulties in

teaching geometric shapes material, due to limited learning media, teaching experience, lack of student activity, and others. As a result, the quality of learning geometric shapes is not optimal.

Introduction to Kindergarten Geometry includes the introduction of circles, triangles, and rectangles. Learning is designed according to development so that children can understand concepts easily and pleasantly, and involve various experiences that they already know (Jamaris, 2005).

Learning to recognize geometric shapes plays an important role in cognitive development because it is one of the lessons that must be taught to children. Learning geometric shapes for children is still very simple when taught in elementary school, but it's different. Sometimes parents often see success in their cognitive development, according to the National Education Department, the cognitive development of children aged 4-6 years includes: 1) general knowledge and science, 2) concepts of shape, color, size and pattern and 3) Numbers, number symbols, letter concepts (Pujiati & Widajati, 2014).

Geometry learning in kindergarten is carried out by introducing forms related to concrete objects around children, such as the shapes of books, blackboards, tables, flags, and others. Learning needs to be designed so that children do more exploratory activities about various forms that they often encounter in everyday life.

According to the Ministry of National Education (Regulation of the minister of education and culture of the Republic of Indonesia number 146 of 2014 concerning the 2013 curriculum for early childhood education, 2014), children must know and refer to various geometric shapes based on observing objects around the child, such as circles, triangles, rectangles, hexagons, semi-circles, trapezoids. According to Clements, the specific aim is to provide children with direct experience of the environment, allowing them to make connections between ordinary and unusual objects, allowing children the opportunity to construct geometric shapes. and learn the appropriate name for the shape.

Until now, the study of geometric shapes in Masjid Raya Islamic Kindergarten is still not attractive to students. Empirical observational data at the beginning of July 2022 shows that out of a total of 34 children (students), the academic achievements of geometric shapes are as follows: a) 4 children (12%) received a score of 1; 16 children (47%) got a score of 2); 14 children (41%) scored 3; but there are no students who get a value of 4 and a value of 5.

Likewise with children's behavior during learning is not optimal. Student concentration, enthusiasm, sense of

responsibility, enthusiasm for asking questions, courage to answer questions, and courage to answer questions are still lacking. Seeing this fact, the writer believes that it is necessary to take various steps to improve the quality of the geometric shapes being studied in order to get the best learning effect. One step that needs to be done is to apply various learning media in the learning process of geometric shapes.

## **II. RESEARCH METHODS**

This research is a collective action research, a form of reflective research in which certain actions are taken in order to improve and improve the quality of classroom learning in a more professional manner. According to the topic, the subjects of this classroom action research were students of the Great Mosque Islamic Kindergarten in the 2022/2023 academic year, a total of 34 children. This classroom action study will be conducted in 2 (two) cycles, August 2022 and September 2022. Each cycle consists of one meeting with a duration of 150 minutes.

Observation sheets are used to observe and record student participation in the learning process in class, including: student concentration, student enthusiasm, student sense of responsibility, student courage in answering questions, and student courage in asking questions. The writer uses

this technique to collect data about student involvement in the class, including: student attention, student motivation, student responsibility, student courage to ask questions, and student courage to answer questions. This technology is used to determine student learning outcomes following the learning process. In each cycle, the teacher gives formative tests orally to measure students' ability to master geometric shapes using various learning media. The author uses this technique to collect qualitative data, especially an overview of the research location. The data analysis technique used in this research is descriptive analysis technique. Using percentile analysis to process quantitative data obtained from the learning outcomes table. The qualitative data obtained from the observation tables are categorized according to the focus of the analysis. Quantitative and qualitative data are then linked as a basis for describing the successful application of various learning media which is marked by an increase in learning outcomes of geometric shapes and in line with changes in engagement (student behavior in the classroom).

This research is a class action research, namely class-based research. The performance indicators of the quantitative dataset criteria show that students in the aforementioned categories are increasingly

gaining learning outcomes in geometric shapes, indicating the criteria for improving the quality of learning in this classroom action research. Therefore, if the percentage in the very good category cycle is greater than the percentage in cycle I, it means that the quality of active learning has increased. Conversely, for example in cycle II the very good category is smaller or the percentage is the same as cycle I, meaning that the quality of learning is less active increasing. Performance indicators from qualitative data identify increased involvement of respondents (students) and increased positive attitudes both qualitatively and quantitatively as indicators of increased positive learning from one cycle to the next. If the opposite happens, this indicates that the classroom action research treatment is less successful.

### **III. RESEARCH RESULTS AND DISCUSSION**

Before this class action research was carried out by the writer, the writer as a teacher applied learning media for geometric shapes to Islamic Kindergarten students at the Great Mosque, using only still/dead images and graphic media. By applying still/dead image media and graphic media, the quality of learning

geometric shapes for students is not optimal. Formative tests orally to 34 students before the cycle obtained scores of student learning outcomes before the action there were still students who got a score of 1, and also no students who got a score of 4 and 5. While students who got a score of 2 were 4.7 % : ( 1 6 children), while 41 % (1 4 children) got a score of 3 (good enough). While 4 students get a score of 1 (not good) with a percentage of 1 2 %.

Likewise with student participation (child behavior in class) in the learning process is also not optimal. Preliminary observation with the observation aspect includes: student concentration, enthusiasm, responsibility, activeness in asking questions and students' courage to answer questions, obtained student participation scores (child behavior in class) quite good 24 students (71%), not good enough 7 students (21% ) ) and not good 3 students (9%).

Based on the research that has been done, data on improving student learning outcomes in cycle I obtained data in Table 1.

Table 3. Data on Student Learning Outcomes Cycle I

Score	Category	The number of students	Percentage
1	Not good	0	0%

2	Not good	0	0%
3	Pretty good	17	50%
4	Good	9	26%
5	Very good	8	24%
<b>Amount</b>		<b>34</b>	<b>100%</b>

Based on the data in Table 3, it can be seen that there is a positive impact from the action in Cycle I by applying various media to learning geometric shapes. Before the cycle, no student got a score of 4 and 5. After the first cycle it went up very sharply, students who got a score of 4 and 5 reached 26.6 % ( 9 children) and 24 % ( 8 children).

The increase in learning outcomes indicates that the increasing acquisition of student learning outcomes in the category above shows the criteria for improving the quality of learning in this classroom action research. The increase in learning outcomes is also followed by an increase in student participation (children's behavior in class). From the observation sheet regarding student participation in class, the data is obtained in Table 2 below.

Table 4. Cycle I Student Participation Data

Score	Category	The number of students	Percentage
1	Not good	0	0%
2	Not good	0	0%
3	Pretty good	18	53%

4	Good	9	26%
5	Very good	7	21%
<b>Amount</b>		<b>34</b>	<b>100%</b>

Student participation data in Table 2 shows that there is an increase in student learning activity. The increase was shown by the students who got a score of 5 as many as 7 people ( 21 %), who got a score of 4 as many as 9 students ( 26 %) and who got a score of 3 as many as 18 students (53 %).

After the action was taken in Cycle II, from the student learning outcomes sheet the data was obtained in Table 3 below.

Table 3 . Data on Student Learning Outcomes Cycle II

Score	Category	The number of students	Percentage
1	Not good	0	0%
2	Not good	0	0%
3	Pretty good	0	0%
4	Good	9	26%
5	Very good	25	74%
<b>Amount</b>		<b>34</b>	<b>100%</b>

Based on the data in Table 3 , it can be seen that there is a significant increase in learning outcomes when compared to cycle I. It is known that there is an increase in student learning outcomes, of which 25 students get a score of 5 ( 74 %) and as many as 9 students get a score of 4 ( 26 %).

The significance of the increase in learning outcomes was apparently

supported by an increase in student participation (children's behavior in class) in cycle II. From the student observation sheet in cycle II, the data is obtained in Table 4 below.

Table 4 . Cycle II Student Participation Data

Score	Category	The number of students	Percentage
1	Not good	0	0%
2	Not good	0	0%
3	Pretty good	0	0%
4	Good	6	18%
5	Very good	28	82%
<b>Amount</b>		<b>34</b>	<b>100%</b>

The results of classroom action research in order to improve the quality of learning in Islamic Kindergarten students at the Great Mosque of the 2022-2023 Academic Year through exploration of geometric shapes with various learning media, the following discussion can be carried out:

First, generally increasing student learning outcomes in the above categories from cycle to cycle shows the criteria for improving the quality of learning in this classroom action research. And the increase in student participation from cycle to cycle shows an increase in positive attitudes both in terms of quality and quantity as an indicator of positive learning improvement.

Second, improving the quality of learning geometric shapes, which in this case is characterized by an increase in student learning outcomes and student participation in class; began to appear evident from before cycle to cycle I, and more markedly the improvement in the quality of learning from cycle I to cycle II. Where in cycle II the acquisition of student learning outcomes all reached the good and very good criteria, and was followed by an increase in student participation which also all reached the criteria good and very good.

Third, the quality of learning as a student activity in an effort to acquire knowledge, skills and positive values by utilizing various sources to learn effectively. In other words, the quality of learning is an effective learning process (Susilana & Riyana, 2008) . Meanwhile, Zaman et al. (2008) emphasized that one of the functions of learning media is to improve the quality of the learning process. So by applying various learning media, in this case applying still/dead image media, graphic media, model media, and 4 reality media in learning geometric shapes; actually proved. That is, various learning media as one of the effective learning resources really function to improve the quality of learning.

This is also in accordance with the opinion of Suydan and Khusni, that

geometric objects are abstract, but they are a fact that geometry is a very important aspect of mathematics and plays a role in life. Geometry is material that you want to know fundamentally and fundamentally for the development of mathematics itself and the development of human thinking skills logically. One of the goals of teaching geometry at school is to develop the ability to think logically. The basic objective is to give students the opportunity to further analyze the world in which they live and to provide a basis from an early age in the form of concepts and terminology needed at the next level of education (Suydan and Khusni (1999:3). Thus it can be concluded that exploration of geometric shapes with various media can improve the quality of learning geometric shapes in Islamic Kindergarten students at the Great Mosque.

#### IV. CONCLUSION

From This classroom action research concluded that the application of various learning media in learning geometric shapes can improve the quality of learning in Islamic Kindergarten students at the Great Mosque. This was marked by an increase in the percentage of student learning outcomes that obtained criteria scores 4 and 5. After the first cycle it rose very sharply, students who scored 4 and 5 reached 2.6 % ( 9 children) and 24 % ( 8

children) at the time before cycle. A score of 5 was 7 people ( 21 %), who got a score of 4 were 9 students (26 %) and who got a score of 3 were 18 students (53 %) in cycle I and increased to as many as 25 students got a score of 5 ( 74 % ) and as many as 9 students get a score of 4 (26 %) in cycle II.

#### BIBLIOGRAPHY

- Jamaris, M. (2005). Development of Multiple Intelligences and Their Applications Through Integrated Learning in Kindergarten. *Journal of Education and Culture* , 053 .
- Regulation of the Minister of Education and Culture of the Republic of Indonesia number 146 of 2014 concerning the 2013 curriculum for early childhood education, Minister of Education and Culture of the Republic of Indonesia: Jakarta (2014).
- Pujiati, N., & Widajati, W. (2014). The Effect of Three Color Wire Game on the Ability to Recognize Geometry in Group A Children at Kindergarten Islam Plus Al-Muchlisin. *Teratai PAUD* , 3 (3).
- Susilana, R., & Riyana, C. (2008). *Learning media: nature, development, utilization, and assessment* . CV. Prime Discourse.
- Zaman, B., Hernawan, AH, & Eliyawati, C. (2008). Kindergarten learning media and resources. *Jakarta: The Open University*