

# Improving Children's Mathematical Ability through Random Geometry Games at TK Kartika Jaya Pariaman Tengah

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Children's mathematical ability in understanding geometry at TK Kartika Jaya Pariaman Tengah are still low. The purpose of this study is to improve children's mathematical ability towards their understanding about geometric forms. The type of research that is used in this study is classroom action research with research subjects in group B1 of TK Kartika Jaya, amounting to 17 technical children used in data collection in the form of observations, interviews and the results of the evaluation format then processed by percentage techniques. This classroom action research was conducted in two cycles referring to the theory of Kemmis and Mc Taggart. The results of the research in each cycle have shown an increase in children's mathematical abilities from the I cycle in general is still low and continued in the II cycle. In the II cycle the cognitive development of children increased and showed positive results, the highest trend was achieved in the willingness and courage of children in performing random geometry games at TK Kartika Jaya Pariaman Tengah, so that the results of the average mathematics ability of children exceeded the minimum completeness criteria set. It turns out that the ability of the children has increased through random play of geometry from cycle I to cycle II. Thus, it can be concluded that random geometry games can improve children's mathematical abilities at TK Kartika Jaya Pariaman Tengah.

**Keywords—** Random Game; Geometry; Mathematics

## I. INTRODUCTION

The child's presence for human life is a gift. Children are not small adults. Therefore, children must be treated according to the stage of development. Children are the next generation of families and also the nation's successors. Educating the life of the nation and towards intellectual, social, and emotional intelligence in accordance with the capabilities possessed by individuals is the goal of the implementation of education. The goal can be realized by the effort that every citizen has the same right to obtain intelligence through education and teaching. Education should start from an early age, because early age is an initial and fundamental period throughout the span of growth and development of human life. At an early age, all potential children develop very quickly, because as is known that at this time is the golden age (golden age) for

children. Early childhood is a unique individual who has a high curiosity and cannot focus his attention for a long time[1]. Early childhood has characteristics that are distinct and different from other children who are above the age of 8, namely, children learn through social participation, the unique person, rich of fantasy, short concentration, experiencing rapid development, having egocentric characteristics, have a great curiosity and begin to be interested in something new from their environment [2] [3]

Early childhood education is an important period that needs to be handled as early as possible, because the age of 3-6 years is a sensitive period for children, which is a period in which a certain function needs to be stimulated, directed so that development is not hampered. Providing stimulus is a very helpful thing for children to develop. Children who are well stimulated and perfect then not only one development will develop but can also develop various aspects of development that are well developed.

Learning in kindergarten, children are not only prepared to meet the level of elementary school education (SD), but more importantly is that the children get basic skills stimulation of language development, cognitive, physical motor and art, and the development of habituation consisting of values religious, social, emotional and independence.

The purpose of education in kindergarten is to facilitate the growth and development of children optimally and thoroughly in accordance with the norms and values of life. Schools as educational institutions certainly have to prepare techniques and methods to develop children's cognitive, because students are a valuable asset of the nation for the future. Cognitive is the intelligence of the mind that is used to recognize, know and understand. Through the thinking tools possessed by each individual, a person's cognitive development develops from an early age to adulthood.

Kindergarten age is at the preoperational stage, namely the stage where children have not mastered mental operations logically. The child's thinking process is centered on mastery-mastery of symbols that are able to express past experiences.

Through these abilities children are able to imagine or fantasize about various things. Mathematical abilities of children in kindergarten need to be developed as contained in the competency-based 2004 TK curriculum related to geometric forms is cognitive.

Mathematics is an ability possessed by the children related to numbers, where children can compare, sort, group and count Walle (2008: 13) [4] Mathematics in Early Childhood in learning activities in kindergarten is useful learning children based on the correct mathematical concepts, interesting and fun; avoid fear of mathematics from the start; help children learn mathematics naturally through playing activities [4].

Development of mathematical logic for children is given learning about numbers, cause and effect, classification, and counting. Providing learning mathematics logic is an effort in developing cognitive Early Childhood [5].

With regard to the observations made by the researcher, the mathematical abilities of children at TK Kartika Jaya Pariaman Tengah have not been maximized, this can be seen in the underdeveloped Mathematical abilities of children when learning to distinguish geometric forms, due to a lack of the teacher strategies to improve learning geometry. lack of media for the development of mathematics, especially geometry, the child's understanding of the concept of geometric forms has not yet developed. This resulted in the Mathematical Capabilities of children in learning geometry not increasing.

Building geometric concepts in the children begins by identifying forms and investigating buildings and separating ordinary images such as rectangles, circles, triangles [6]. Regular geometry learning will help children to understand geometric shapes. Simple geometric shapes such as triangles, circles, rectangles, rectangles are often seen by children in their daily lives, such as triangles resembling birthday hats, circles like balls, rectangles like squares and rectangles like a blackboard.

Based on the phenomenon above, the researcher wants to conduct a research entitled "Improving children's mathematical abilities through random geometry games at Kartika Jaya Kindergarten in the Central Pariaman."

## II. METHOD

The type of study is classroom action research (PTK), namely research conducted in the classroom carried out by the teacher to solve learning problems faced by teachers, improve the quality of learning and try new things in the field of learning. Broadly speaking there are four stages that are passed in the research, namely: 1) Planning, 2) Implementation, 3) Observation and 4) Reflection.

The population in this study were TK Kartika Jaya Pariaman Tengah students in Group B1, with a total of 17 students. Number of boys 9 while girls 8 people. The research instruments used were observation, documentation and interviews

## III. RESEARCH RESULT

### A. Deskripsi Kondisi Awal

In the initial conditions before the study was conducted, namely on January 19, 2012, which was studied were children aged 5-6 years, the mathematical abilities of TK Kartika Jaya students were still low. It is seen that some students in the class have difficulty when developing mathematical activities (introduction to the concepts of numbers and logic). In general, students can only mention numbers even though they do not know the actual concept of numbers, for fields but they are still confused like triangles, rectangles, circles. We can see more clearly in the table below:

TABLE I. CHILDREN'S MATHEMATICAL ABILITY IN THE LEARNING PROCESS IN EARLY CONDITIONS (BEFORE ACTION)

No	Aspects	Score					
		ST		T		R	
		F	%	F	%	F	%
1	Clasify objects according to forms	-	-	2	12	15	88
2	Make forms of objects that are around	-	-	1	6	16	94
3	Create a flat plane forms	1	6	2	12	14	82
4	Match symbols of numbers with number of cards	-	-	1	6	16	94
Average			1		9		90

Based on the table above, it can be seen that the child's mathematical development in the initial condition before the action on clasify objects according to the forms, that is, no child gets a very high score, 2 children get a high score with a percentage of 12% and 15 children get a low score with a percentage of 88%. For activities to make forms of objects that are around, that is, no child gets a very high score, 1 child gets a high score with a percentage of 6% and 16 children get a low score with a percentage of 94%. In the activity of creating a flat plane forms, that is, 1 child obtained a very high score of 6%, 2 people obtained a high score with a percentage of 12% and 14 children obtained a low score with a percentage of 82%. For the activity of match blocks randomly, there were no children who scored very high, 1 child got a high score with a percentage of 6% and 16 children got a low score with a percentage of 94%.

### B. Description of Cycle I

The first cycle was held in 3 meetings. Description of the implementation of learning in meetings I to III as follows.

TABLE II. RESULTS OF CHILDREN'S MATHEMATICAL ABILITIES IN LEARNING PROCESS ON CYCLE I AT I MEETING (AFTER ACTION)

No	Aspects	Score					
		ST		T		R	
		F	%	F	%	F	%
1	Clasify the forms of Geometry	1	6	2	12	14	82
2	Make geometry forms	1	6	1	6	15	88
3	Creates forms from geometry pieces	2	12	2	12	13	76
4	Arrange geometry randomly	1	6	1	6	15	88
Average			8		9		83

Based on the table above, it can be seen that children's mathematical development in the Cycle I learning process after actions in clasify geometry forms, namely, 1 child obtains a very high score of 6%, 2 children get high scores with a percentage of 12% and 14 children get a low score of 82%. For activities to make geometric forms, that is, 1 child gets a very high score of 6%, 1 child gets a high score with a percentage of 6% and 15 children get a low score with a percentage of 88%. In the activity of creating form of geometry pieces, namely, 2 children obtained very high scores with a percentage of 12%, 2 children obtained high scores with a percentage of 12% and 13 children obtained low scores with a percentage of 76%. For random geometry activities, 1 child gets a very high score of 6%, 1 child gets a high score with a percentage of 6% and 15 children get a low score with a percentage of 88%

TABLE III. RESULTS OF CHILDREN'S MATHEMATICAL ABILITIES IN LEARNING PROCESS ON CYCLE I MEETING II (AFTER ACTION)

No	Aspects	Score					
		ST		T		R	
		F	%	F	%	F	%
1	Clasify the forms of Geometry	2	12	4	24	11	64
2	Make geometry forms	2	12	2	12	13	76
3	Creates forms from geometry pieces	3	18	4	24	10	58
4	Arrange geometry randomly	2	12	3	18	12	70
Average			13		20		67

Based on the table above, it can be seen that children's mathematical development in the Cycle I learning process after actions in clasify geometric forms, namely, 2 children get very high scores with a percentage of 12%, 4 children get high scores with a percentage of 24% and 11 children get a low score of 64%. For activities to make geometric forms, namely,

2 children get very high scores with a percentage of 12%, 2 children get high scores with a percentage of 12% and 13 children get low scores with a percentage of 76%. In the activity of creating shapes from geometric pieces, namely, 3 children obtained very high scores with a percentage of 18%, 4 children received high scores with a percentage of 24% and 10 children obtained low scores with a percentage of 58%. For random geometry activities, 2 children received very high scores with a percentage of 12%, 3 children received high scores with a percentage of 18% and 12 children received low scores with a percentage of 70%.

Based on the table above, for the first meeting of Cycle II it was seen that the average number for the indicators grouped geometric forms, namely, 2 children obtained very high scores with a percentage of 12%, 4 children obtained high scores with a percentage of 24% and 11 children get a low score of 64%. For activities to make geometric forms, namely, 2 children get very high scores with a percentage of 12%, 2 children get high scores with a percentage of 12% and 13 children get low scores with a percentage of 76%. In the activity of creating forms from geometric pieces, namely, 3 children obtained very high scores with a percentage of 18%, 4 children received high scores with a percentage of 24% and 10 children obtained low scores with a percentage of 58%. For random geometry activities, 2 children received very high scores with a percentage of 12%, 3 children received high scores with a percentage of 18% and 12 children received low scores with a percentage of 70%..

TABLE IV. RESULTS OF CHILDREN'S MATHEMATICAL ABILITIES IN LEARNING PROCESS ON CYCLE I MEETING III (AFTER ACTION)

No	Aspects	Score					
		ST		T		R	
		F	%	F	%	F	%
1	Clasify the forms of Geometry	3	18	4	24	10	58
2	Make geometry Forms	4	24	4	24	9	52
3	Creates forms from geometry pieces	4	24	5	29	8	47
4	Arrange geometry randomly	3	18	4	24	10	58
Average			21		25		54

Based on the table above, it can be seen that the child's mathematical development in the learning process in Cycle I III Meeting after the action on the activities classifies geometric forms, namely, 3 children get very high scores with a percentage of 18%, 4 children get high scores with a percentage of 24% and 10 children received a low score of 58%. For activities to make geometric forms, that is, 4 children get very high scores with a percentage of 24%, 4 children get high scores with a percentage of 24% and 9 children get low scores with a percentage of 52%. In the activity of creating shapes from geometry pieces, 4 children obtained very high scores with a percentage of 24%, 5

children obtained high scores with a percentage of 29% and 8 children received low scores with a percentage of 47%. For random geometry activities, 3 children received very high scores with a percentage of 18%, 4 children received high scores with a percentage of 24% and 10 children received low scores with a percentage of 58%.

Based on the table above, for the I meeting of Cycle III it was seen that the average number for the indicators grouped geometric forms, namely, 3 children obtained very high scores with a percentage of 18%, 4 children received high scores with a percentage of 24% and 10 children get a low score of 58%. For activities to make geometric forms, that is, 4 children get very high scores with a percentage of 24%, 4 children get high scores with a percentage of 24% and 9 children get low scores with a percentage of 52%. In the activity of creating shapes from geometry pieces, 4 children obtained very high scores with a percentage of 24%, 5 children obtained high scores with a percentage of 29% and 8 children received low scores with a percentage of 47%. For random geometry activities, 3 children received very high scores with a percentage of 18%, 4 children received high scores with a percentage of 24% and 10 children received low scores with a percentage of 58%.

#### Interview Result

TABLE V. RESULTS OF CHILDREN'S INTERVIEWS IN THE LEARNING PROCESS ON CYCLE I (AFTER ACTION)

No	Questions	Answers
1	Can the children classify the form of Geometry	16 children can (f) 94%
		1 child cannot (f) 6%
2	Can the children make geometry forms	15 children can (f) 88%
		2 children cannot (f) 18%
3	Can the children create forms from geometry pieces	15 children can (f) 88%
		2 children cannot (f) 18%
4	Do the children have difficulty in arrange geometry randomly	2 children answer yes (f) 12%
		15 children answer no (f) 88%

Based on the table above, it can be seen the development of children mathematics in the learning process Cycle II Meeting I after the action on the activity classifies geometric forms namely, 5 children get very high scores with a percentage of 29%, 7 children get high scores with a percentage of 41% and 5 children received a low score of 29%. For activities to make geometric forms, 7 children get very high scores with a percentage of 41%, 6 children get high scores with a percentage of 35% and 4 children get low scores with a percentage of 24%. In the activity of creating form of

geometry pieces, 7 children obtained very high scores with a percentage of 41%, 6 children obtained high scores with a percentage of 35% and 4 children obtained low scores with a percentage of 24%. For random geometry activities 7 children obtained very high scores with a percentage of 41%, 6 children obtained high scores with a percentage of 35% and 4 children received low scores with a percentage of 24%.

Based on the table above, for the II Cycle I meeting, the average number for the indicators classifies geometric forms, namely, 5 children get very high scores with a percentage of 29%, 7 children get high scores with a percentage of 42% and 5 children get a low score of 29%. For activities to make geometric forms, 7 children received very high scores with a percentage of 41%, 6 children obtained high scores with a percentage of 35% and 4 children received low scores with a percentage of 25%. In the activity of creating shapes from geometry pieces, 7 children obtained very high scores with a percentage of 41%, 7 children obtained high scores with a percentage of 41% and 3 children obtained low scores with a percentage of 18%. For random geometry activities 7 children obtained very high scores with a percentage of 41%, 6 children obtained high scores with a percentage of 35% and 4 children received low scores with a percentage of 24%.

#### C. Description of Cycle II

Cycle II was held in 3 meetings. Description of the implementation of learning in meetings I to III as follows:

TABLE VI. RESULTS OF CHILDREN'S MATHEMATICAL ABILITY IN LEARNING PROCESS ON CYCLE II MEETING I (AFTER ACTION)

No	Aspects	Score					
		ST		T		R	
		F	%	F	%	F	%
1	Classify the forms of Geometry	5	29	7	42	5	29
2	Make geometry Forms	7	41	6	35	4	24
3	Creates forms from geometry pieces	7	41	7	41	3	18
4	Arrange geometry randomly	7	41	6	35	4	24
Average			38		38		24

Based on the table above, it can be seen the development of children mathematics in the learning process Cycle II Meeting I after the action on the activity classifies geometric forms namely, 5 children get very high scores with a percentage of 29%, 7 children get high scores with a percentage of 41% and 5 children received a low score of 29%. For activities to make geometric forms, 7 children get very high scores with a percentage of 41%, 6 children get high scores with a percentage of 35% and 4 children get low scores with a percentage of 24%. In the activity of creating form of geometry pieces, 7 children obtained very high scores with a



percentage of 41%, 6 children obtained high scores with a percentage of 35% and 4 children obtained low scores with a percentage of 24%. For random geometry activities 7 children obtained very high scores with a percentage of 41%, 6 children obtained high scores with a percentage of 35% and 4 children received low scores with a percentage of 24%.

Based on the table above, for the II Cycle I meeting, the average number for the indicators classifies geometric forms, namely, 5 children get very high scores with a percentage of 29%, 7 children get high scores with a percentage of 42% and 5 children get a low score of 29%. For activities to make geometric forms, 7 children received very high scores with a percentage of 41%, 6 children obtained high scores with a percentage of 35% and 4 children received low scores with a percentage of 25%. In the activity of creating shapes from geometry pieces, 7 children obtained very high scores with a percentage of 41%, 7 children obtained high scores with a percentage of 41% and 3 children obtained low scores with a percentage of 18%. For random geometry activities 7 children obtained very high scores with a percentage of 41%, 6 children obtained high scores with a percentage of 35% and 4 children received low scores with a percentage of 24%..

TABLE VII. RESULTS OF CHILDREN'S MATHEMATICAL ABILITY IN LEARNING PROCESS ON CYCLE II MEETING II (AFTER ACTION)

No	Aspects	Score					
		ST		T		R	
		F	%	F	%	F	%
1	Classify the forms of Geometry	7	41	7	41	3	18
2	Make geometry Forms	9	53	5	29	3	18
3	Creates forms from geometry pieces	9	52	4	24	4	24
4	Arrange geometry randomly	10	58	4	24	3	18
Average			51		29		20

Based on the table above, it can be seen the development of child mathematics in the learning process Cycle II Meeting II after the action on the activity classifies geometric forms, namely, 7 children get very high scores with a percentage of 41%, 7 children get high scores with a percentage of 41% and 3 children received a low score of 18%. For activities to make geometric forms, that is, 9 children get very high scores with a percentage of 53%, 5 children get high scores with a percentage of 29% and 3 children get low scores with a percentage of 18%. In the activity of creating form from geometry pieces, 9 children obtained very high scores with a percentage of 52%, 4 children obtained high scores with a percentage of 24% and 4 children obtained low scores with a percentage of 24%. For random geometry activities 10 children received very high scores with a percentage of 58%, 4

children received high scores with a percentage of 24% and 3 children received low scores with a percentage of 18%.

Based on the table above, for the Cycle II meeting II, it was seen that the average number for indicators classify geometric forms, namely, 7 children obtained very high scores with a percentage of 41%, 7 children obtained high scores with a percentage of 41% and 3 children get a low score of 18%. For activities to make geometric forms, that is, 9 children get very high scores with a percentage of 53%, 5 children get high scores with a percentage of 29% and 3 children get low scores with a percentage of 18%. In the activity of creating shapes from geometry pieces, 9 children obtained very high scores with a percentage of 52%, 4 children obtained high scores with a percentage of 24% and 4 children obtained low scores with a percentage of 24%. For random geometry activities 10 children received very high scores with a percentage of 58%, 4 children received high scores with a percentage of 24% and 3 children received low scores with a percentage of 18%.

TABLE VIII. RESULTS OF CHILDREN'S INTERVIEWS IN LEARNING PROCESS ON CYCLE II (AFTER ACTION)

No	Questions	Answers
1	Can the children classify the form of Geometry	16 children can (f) 94%
		1 child cannot (f) 6%
2	Can the children make geometry forms	15 children can (f) 88%
		2 children cannot (f) 18%
3	Can the children create forms from geometry pieces	15 children can (f) 88%
		2 children cannot (f) 18%
4	Do the children have difficulty in arrange geometry randomly	2 children answer yes (f) 12%
		15 children answer no (f) 88%

On the first question whether the child can classify geometric forms it is stated that 94% of children can, 6% of children do not. For the second question 88% of children can make geometric forms and 12% of children do not. For the third activity 88% of children can create geometric forms and 18% do not. While for the fourth question 12% of children have difficulty arranging geometry randomly and 88% of children who have no difficulty.

The results of the above interviews as reinforcement of the results of observations made in this study to determine the achievement of developments that arise from children's learning outcomes. It appears from the results of interviews that children's mathematical ability to increase and even exceed the minimum completeness criteria, which is above 75%..

#### D. Data Analysis

##### 1. Analysis of Cycle I

Based on the cycle I of children's mathematical abilities, it can be concluded that they have not yet achieved the Minimum Completeness Criteria (KKM). This can be seen from the average percentage of children from the predetermined indicators, namely, at the first meeting the value is 8%, the average value is 10% and the value is 82%. At the meeting II a high score of 12%, a moderate score of 18%, and a low score of 70%. While at meeting III high scores 18%, moderate values 24% and low scores 58%. In this case, it means that random geometry is not optimal in improving children's mathematical abilities. It is expected that in a random geometry game can improve the child's mathematical abilities at least 75%

##### 2. Analysis of Cycle II

Based on the results of the research obtained in Cycle II the number of children who obtained a high average increased and reached the Minimum Completion Criteria (KKM) that had been set. This can be seen from the average percentage of Cycle II meeting II. This means that a random geometry game can improve the mathematical abilities of children in TK Kartika Jaya Pariaman Tengah exceeding the 75% Minimum Completeness Criteria (KKM).

##### 3. Analysis of Observation Resulti

Random geometry games to improve children's mathematical abilities the average value obtained from overall achievement has reached the Minimum Completion Criteria (KKM). Improving children's mathematical abilities through random geometry games at TK Kartika Jaya Pariaman Tengah has increased starting from the initial conditions, Cycle I and Cycle II. For more details, see the following tables and graphs:

TABLE IX. PERCENTAGE OF DEVELOPMENT OF CHILDREN'S MATHEMATICAL ABILITY THROUGH RANDOM GEOMETRY GAMES IN LEARNING PROCESS (VERY HIGH CATEGORIES)

No	Aspects	Before Action	Cycle I	Cycle II	Note
1	Clasify the forms of Geometry	-	18	82	Increase
2	Make geometry Forms	-	24	76	Increase
3	Creates forms from geometry pieces	6	24	88	Increase
4	Arrange geometry randomly	-	18	88	Increase
Average		1	21	82	Increase

Based on the table above, it can be seen that the average percentage of development of children's mathematical abilities in the learning process with very high values has increased where before the average action is 1%, in cycle I 21% and in cycle II 82%.

TABLE X. PERCENTAGE OF DEVELOPMENT OF CHILDREN'S MATHEMATICAL ABILITY THROUGH RANDOM GEOMETRY GAMES IN LEARNING PROCESS (HIGH CATEGORIES)

No	Aspects	Before Action	Cycle I	Cycle II	Note
1	Clasify the forms of Geometry	12	24	12	Decrease
2	Make geometry Forms	6	24	18	Decrease
3	Creates forms from geometry pieces	12	29	12	Decrease
4	Arrange geometry randomly	6	24	6	Decrease
Average		9	25	13	Decrease

Based on the table above, it can be seen that the average percentage of development of children's mathematical abilities in the learning process with high categories has decreased where before the average action is 9%, in Cycle I the average is 25% and in Cycle II the average is 13%

TABLE XI. PERCENTAGE OF DEVELOPMENT OF CHILDREN'S MATHEMATICAL ABILITY THROUGH RANDOM GEOMETRY GAMES IN LEARNING PROCESS (LOW CATEGORIES)

No	Aspects	Before Action	Cycle I	Cycle II	Note
1	Clasify the forms of Geometry	88	58	6	Decrease
2	Make geometry Forms	94	52	6	Decrease
3	Creates forms from geometry pieces	82	47	-	Decrease
4	Arrange geometry randomly	94	58	6	Decrease
Average		88	54	4	Decrease

Based on the table above it can be seen that the average percentage of development of children's mathematical abilities in the learning process with a low value has decreased where before the average action was 88%, in Cycle I the average was 54% and in Cycle II the average was 4%.

#### IV. DISCUSSION

Mathematics is a thinking process where the ability of individuals to connect, assess and consider an event or event. Menuru. [7]) ) Mathematics is expressed by the growth of the ability to design, remember, and find solutions to problems faced. [8] Mathematical abilities are defined as extensive

knowledge, reasoning power, creativity, language skills and memory.

Based on the results of research on improving children's mathematical abilities through random geometry games at TK Kartika Jaya Pariaman Tengah, a discussion is needed to explain and deepen the study in this study.

In the initial conditions obtained a picture of the geometry random game is still low where some children in class B4 TK Kartika Jaya Pariaman Tengah experience difficulties when randomly arranged geometry activities are held. After seeing the initial conditions the researchers took action to improve children's mathematics through random geometry games.

Based on the level of research in cycle I and cycle II can be described the average success of children as follows:

- a. The ability of children to take part in the activity has increased, from the initial condition of an average of 2%, at the third meeting the second cycle the average rose to 81%. while the low positive decreases from an average of 88% to 6%.
  - b. Observe from the activities of the teacher, learning in the Cycle II has run well and successfully.
  - c. The ability of children through random geometry games increases can be seen in the following description:
1. *Children can classify geometric forms from the initial condition the ability value is very high from 0% at the meeting III of the cycle II to 82%.*
  2. *Children can make geometric forms from the initial conditions very high values 0% at the meeting III of the cycle II increased to 76%.*
  3. *Children can create forms from geometric pieces from the initial condition a very high ability value of 6% at the meeting III of the cycle II increases to 88%.*
  4. *Children can arrange geometry randomly from the initial condition, the ability value is very high 0% at the meeting III of the cycle II increases to 88%.*

From the description above, it can be seen that the random geometry game to improve children's mathematical abilities, the average value obtained from overall achievement has reached the Minimum Completion Criteria (KKM). Improving children's mathematical abilities through random geometry games at TK Kartika Jaya Pariaman Tengah has increased starting from the initial conditions, Cycle I and Cycle II. It means that a random geometry game can improve the mathematical abilities of children at TK Kartika Jaya Pariaman Tengah exceeding the 75% Minimum Completeness Criteria (KKM).

## V. CONCLUSION

Based on the results of the research that has been done, it can be concluded that the children's mathematical abilities in the learning process can be increased by using random geometry games in the children of the B1 TK Kartika Jaya Pariaman Tengah; in geometric random play the ability that is achieved is that the child can classify geometry, the child is able to make geometric forms, the child is able to create forms from geometric pieces and the child is able to arrange geometry randomly; Random geometry games can improve children's mathematical abilities; Geometry random game tool suitable for kindergarten age, because it is in accordance with the principle of playing in kindergarten; Through geometry random games can provide a quite satisfying influence to improve children's learning outcomes, with an increase in each cycle; The need to stimulate children's mathematical abilities at an early age; and game tools are very important for children's development.

Based on the description of the conclusions above there are some suggestions that the researcher would like to describe as follows:

1. In order for learning to attract the attention and interest of children, teachers should be more creative in creating a fun learning environment for children.
2. For the implementation of kindergarten, it should be able to provide teaching aids capable of supporting children's development.
3. In learning process, the teacher must be able to create learning strategies so that children are not bored, so that learning objectives are achieved.
4. For other researchers it is expected to develop children's mathematical abilities through other methods and media.

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