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IMPROVING EARLY CHILDHOOD COUNTING ABILITY THROUGH MODIFICATION OF ILLUSTRATED COUNTING BOOKS

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Abstract

Based on law no. 2 of 2003 concerning the national education system where early childhood education needs stimulation to assist physical and spiritual growth and development in entering further education. One of them is by stimulating children's cognitive development by counting early. In this case, one of the efforts that can be made by teachers is to modify the textbooks given to early childhood by providing lots of interesting pictures and colors so that children will be more interested in learning and will understand more about counting. This type of research is Classroom Action Research (CAR) and is carried out on TK-B students with a total of 26 students. Data collection techniques are observation, interviews, documentation, data analysis, data presentation, data interpretation, and reflection in the form of qualitative descriptive research with indicators used, namely sorting numbers 1-15, counting pictures, and rewriting numbers according to the modification of the illustrated textbook that has been designed. The research was conducted in two cycles where each cycle consisted of three meetings. In cycle 1, it has not reached the optimal indicator limit, which is below 75% for all materials. However, in cycle 2, the success indicators have been set so that the researchers stopped this research in cycle 2. Where the success rate for sorting numbers 1-15 has reached 77%, counting images has

reached 84.6% and rewriting numbers has reached 92.3. %. and rewrite the numbers according to the modification of the illustrated textbook that has been designed. The research was conducted in two cycles where each cycle consisted of three meetings. In cycle 1, it has not reached the optimal indicator limit, which is below 75% for all materials. However, in cycle 2, the success indicators have been set so that the researchers stopped this research in cycle 2. Where the success rate for sorting numbers 1-15 has reached 77%, counting images has reached 84.6% and rewriting numbers has reached 92.3. %. and rewrite the numbers according to the modification of the illustrated textbook that has been designed. The research was conducted in two cycles where each cycle consisted of three meetings. In cycle 1, it has not reached the optimal indicator limit, which is below 75% for all materials. However, in cycle 2, the success indicators have been set so that the researchers stopped this research in cycle 2. Where the success rate for sorting numbers 1-15 has reached 77%, counting images has reached 84.6% and rewriting numbers has reached 92.3. %. In cycle 1, it has not reached the optimal indicator limit, which is below 75% for all materials. However, in cycle 2, the success indicators have been set so that the researchers stopped this research in cycle 2. Where the success rate for sorting numbers 1-15 has reached 77%, counting images has reached 84.6% and rewriting numbers has reached 92.3. %. In cycle 1, it has not reached the optimal indicator limit, which is below 75% for all materials. However, in cycle 2, the success indicators have been set so that the researchers stopped this research in cycle 2. Where the success rate for sorting numbers 1-15 has reached 77%, counting images has reached 84.6% and rewriting numbers has reached 92.3. %.

Keywords: *Early Childhood, Early Arithmetic, Classroom Action Research (CAR)*

A. Introduction

Along with the times in this digitalization era, the teaching system in the world of education is also getting more advanced. Early childhood is required to be able to count, write, and read before entering the world of formal education. This makes the level of teaching in early childhood education more exclusive in providing teaching, where early childhood children have started to be taught how to read, write and count. In line with Law No. 20 of 2003 concerning the National Education System, chapter 1 article 1 which states that early childhood is a coaching effort

shown to children from birth to six years of age by providing educational stimuli to help physical and mental growth and development. spiritually in entering further education.

According to research conducted by Nurhafizah & Kosnin (2016) children aged 0-6 years are a golden age where the development of children's intelligence will increase significantly so that it becomes a suitable time for children to learn. So that to develop and stimulate every child's development, a forum in the level of education is needed which is called early childhood education. This is in line with research conducted by Purwaningsih, et al (2018) which states that early childhood education is a golden period in an effort to develop thinking skills so that the appropriate age for obtaining education includes moral, cognitive, religious, psychomotor, social and cultural education.

One of the areas of development carried out in early childhood is the aspect of cognitive development. According to research conducted by Ayunda (2019), cognitive development has an important role in child development where children will be stimulated in developing their knowledge based on what they see, feel, touch, hear through their five senses. This is to respond to children's knowledge about colors, concepts of shapes, patterns, and sizes so that children can think and respond quickly and precisely to overcome a situation and solve problems. According to the Ministry of National Education (in Musi, 2016) cognitive development aims to facilitate the understanding of children in the learning provided by the teacher so that they can solve problems with various alternatives so that they can think logically which is developed in early childhood.

One of the potentials in stimulating children's cognitive development is to count early. According to Smith (2009) early childhood has various kinds of potential so that it needs to be developed and improved optimally so that the potential stored in every early childhood can succeed in the future, especially the ability to count. According to the Regulation of the Minister of National Education Number 58 of 2009 [130]

concerning the Standards for the Achievement of Children's Cognitive Development at the age of 5-6 years, it covers 3 areas including learning and problem solving, symbolic thinking, and logical thinking. So that children aged 5-6 years should be able to count activities.

Given this, it is necessary to understand and develop concepts carried out by teachers in guiding, nurturing, and providing learning activities for these children so that children can understand well about the lessons given. In a study conducted by Oktriyani (2017), the concept of counting that needs to be developed is by mentioning numbers, pointing to number symbols, recognizing the concept of numbers with objects around us, sorting numbers, imitating existing numbers, matching numbers with number symbols that can be done. with various alternatives so as to improve children's numeracy skills.

In this case, one of the efforts that can be made by teachers is to modify the textbooks given to early childhood by providing lots of interesting pictures and colors so that children will be more interested in learning and will understand more about counting. As research conducted by Oktriyanti (2017), the concept of this illustrated textbook is to sort numbers 1-15, count the number of pictures and rewrite the existing numbers.

B. Method

Location and Time of Research

This research was conducted in January 2022 in the second semester of the 2021/2022 academic year where offline learning has been reinstated by the government.

Research Subjects and Objects.

This research was conducted on TK-B students with 26 students consisting of 17 female students and 9 male students.

Research design

The type of research conducted in this research is Classroom Action Research (CAR). This classroom action research aims as a means for teachers to overcome problems that exist in the classroom so that teachers can effectively improve the quality of teaching in the classroom. Data collection techniques carried out by researchers are observation, interviews, questionnaires, documentation, data analysis and data presentation, data interpretation, and reflection. The data collected was analyzed using qualitative descriptive analysis techniques by calculating the score/percentage to measure the level of students' numeracy skills so that it can be seen to what extent the students' ability to recognize the concept of numbers is known through modification of illustrated counting books.

C. Finding and Discussion

The research was conducted with initial observations, namely going directly to school to see learning activities on counting material. Based on the results of observations, it can be seen that the percentage of students' arithmetic success has not reached 75% in accordance with predetermined criteria. Students look still confused and some students feel bored with the learning given. This shows that students have not been able to recognize the concept of number symbols or follow numbers to rewrite the existing numbers.

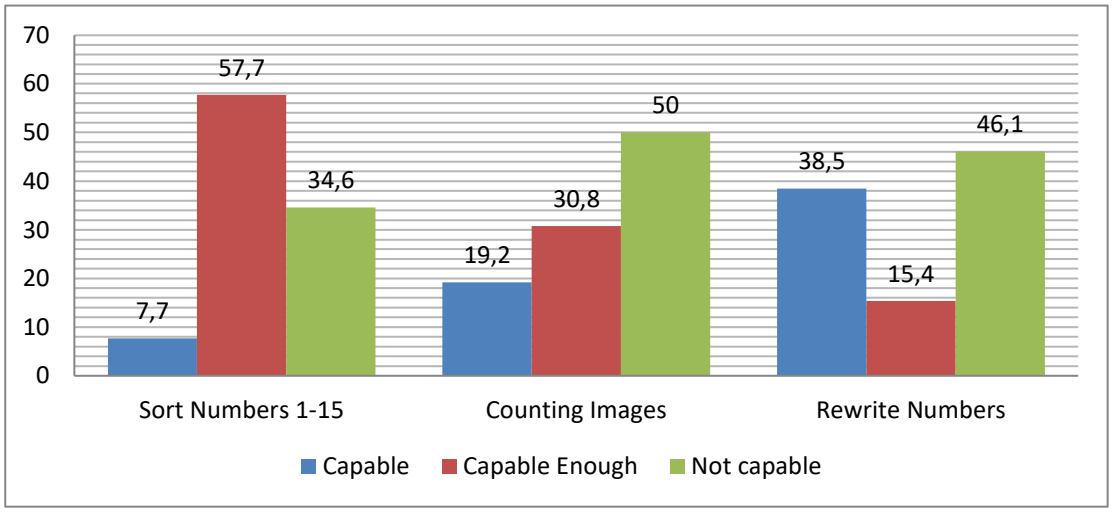

Figure 1. Percentage of the results of initial observations of students' numeracy skills

The percentage results above show that there are still many students who are unable to sort numbers, count pictures, and rewrite numbers. Then conduct interviews with teachers and students about the problems they feel. Based on the results of interviews, the factor causing the problem was because the learning media seemed monotonous where students were more often asked to write on worksheets that only displayed numbers, when counting numbers the image forms were minimal in variety and color, besides that the teacher only explained only in the form of numbers on the blackboard, the method used is also still counting with the fingers so that there is less variation in providing learning which results in children becoming bored with learning.

Based on the results of the observations and interviews above, the authors are interested in inviting teachers to improve students' numeracy skills by modifying textbooks into illustrated textbooks where many pictures and colors appear in textbooks so that students feel more interested and enthusiastic in learning and not feel bored and bored because of the many variations of pictures and colors in the book, besides

that when delivering learning materials the teacher also interspersed with simple competitions with rewards such as getting stars and so on.

The concept of modification of illustrated textbooks can be shown as follows:

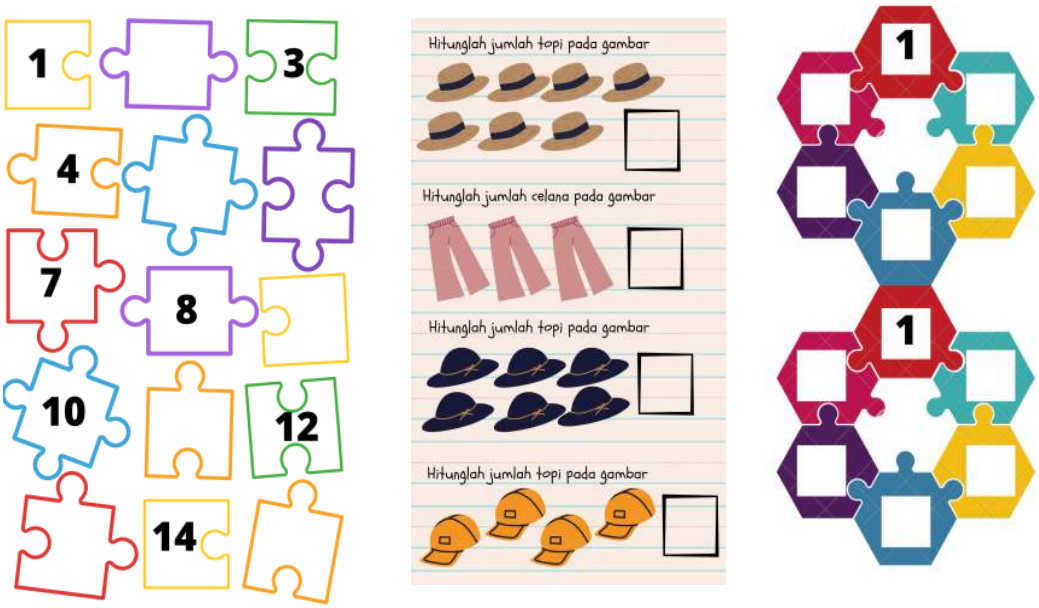

Figure 2. One of the modified illustrated textbooks

This Classroom Action Research (CAR) was carried out in two cycles, where each cycle consisted of three meetings, with the indicators used were sorting numbers 1-15, counting pictures, and rewriting numbers according to the modification of the illustrated textbook that had been designed.

Cycle 1

The initial step in the first cycle was carried out three times, where in each meeting observations were made for each learning material, namely at the first meeting, namely sorting numbers 1-15, the second meeting counting pictures, and the third meeting rewriting numbers. With indicator 1 stating able, 2 stating quite capable and 3 stating unable.

Table 1. Indicators of students' numeracy skills in cycle 1

Cycle 1	**Value indicator in numbers**								
	Meeting 1			Meeting 2			Meeting 3		
	1	2	3	1	2	3	1	2	3
	11	9	6	14	6	6	12	8	6
Cycle 1	**Value indicator in percentage**								
	Meeting 1			Meeting 2			Meeting 3		
	1	2	3	1	2	3	1	2	3
	42.3 %	34.6 %	23.1 %	53.8 %	23.1 %	23.1 %	46.1 %	30.8 %	23.1 %

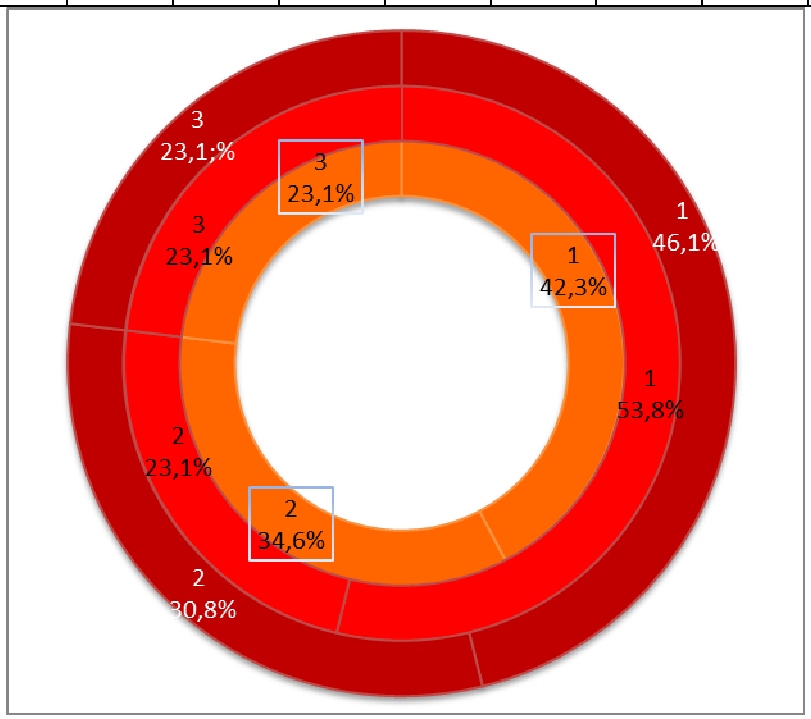

Figure 3. Diagram of the percentage increase in students' numeracy skills in cycle 1

Based on the percentage above, it is shown that there is a change

in the ability of students rather than the initial observation as follows:

1. At the first meeting where students who were able to sort numbers from 1 to 15 increased to 11 people or an increase of about 35.6%, although there were 9 students (34.6%) in the fairly capable category where several reasons caused students included in the quite capable category, among others, because it took a long time to write a sequence of numbers, had to be repeated several x explanations or was only able to sort up to number 10, and as many as 6 people (23.1%) students who were only able to sort up to number 7 this included the category of incapable.
2. At the second meeting, namely counting pictures of students who were able to count increased to 14 people or an increase of 34.6%, although there were still 6 students (23.1%) in the fairly capable category where students were only able to complete a few pictures that could be counted on several pages and 6 students (23.1%) who were still there who were unable to count the pictures due to an error in adding up the number of pictures.
3. The third meeting was conducted to find out the improvement of students in remembering the numbers that had been learned at the previous meeting, namely by rewriting the numbers that had been learned. Because the initial sorting is from numbers 1-15, then rewriting is done from numbers 1-15. Based on the results of the study carried out, it was obtained that students who were able to rewrite numbers increased to 12 people or an increase of 7.6%, although there were still 8 people (30.8%) who forgot some numbers and about 6 people (23.1%) who have difficulty in rewriting the numbers that have been learned.

Even though there was an increase in cycle 1 compared to the initial observation where picture textbooks had not been given, it still did not reach the specified indicator, which was less than 75% of students who were able to sort numbers, count pictures and rewrite numbers, so a follow-up was carried out in the cycle. second with three meetings and [136]

the same provisions in cycle 1 to be able to improve the ability of students in counting.

Cycle 2

Based on the results of the implementation of the actions in cycle 1, it can be seen that the magnitude of the influence of the modification of the illustrated counting book is that the number of students who are able to sort numbers, count pictures and rewrite numbers increases but has not been an indication of success in seeing an increase in students' numeracy skills. In the implementation of the first cycle of action, there are still some problems because there are deficiencies in the activities carried out so that improvements are needed which are expected to produce an optimal increase in students' numeracy skills. For this reason, researchers and teachers plan several improvement steps that will be carried out in cycle 2.

Judging from the way the teaching is carried out by the teacher, it is appropriate where the teacher explains one by one to the students' table to see the progress of the students but needs to be improved again by paying attention to the shortcomings of children who do not understand counting. One way to provide enthusiasm and motivation. In addition, it can insert simple competitions that can trigger children to be more active and enthusiastic. Then give a longer space of time so that students can remember numbers better understand again.

Table 2. Indicators of students' numeracy skills in cycle 2

Cycle 2	Value indicator in numbers								
	Meeting 1			Meeting 2			Meeting 3		
	1	2	3	1	2	3	1	2	3
	20	3	3	22	3	1	24	2	0
ycle	Value indicator in percentage								

	Meeting 1			Meeting 2			Meeting 3		
	1	2	3	1	2	3	1	2	3
	77%	11.5%	11.5%	84.6%	11.5%	3.8%	92.3%	7.7%	0%

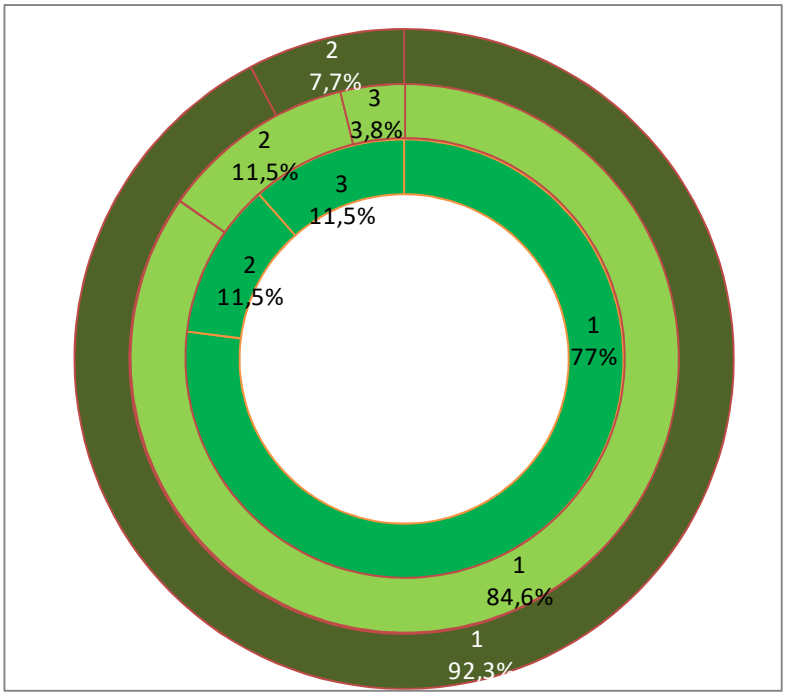

Figure 4. Diagram of the percentage increase in students' numeracy skills in cycle 2

Based on the percentage above, it is shown that there is a change in the ability of students from the first cycle of action as follows:

1. The ability to sort numbers from 1-15 in students has increased to 77% which is said to be successful because it exceeds the predetermined indicators even though 11.5% of students are still unable to sort numbers, which is only up to number 13, this can still be hopeful. ability and memory of students.

2. The ability to count pictures increased rapidly to 84.6% of students were said to have succeeded in counting pictures this was because the pictures that looked varied so that they increased the enthusiasm of students in counting.
3. This is in line with the increasing ability to remember students, where there are no more students who cannot rewrite numbers from 1-15 with a success percentage of 92.3%.

Based on the results of the activities carried out in cycle 2, the indicators of success have been achieved so the researchers stopped this research in cycle 2.

D. Conclusion

Based on the results of the data obtained from the action activities in cycles 1 and 2, it can be seen that there is an increase in students' numeracy skills where in cycle 2 has reached more than 75% of the optimal value indicators that have been set. Although some students have not been able to optimally master the calculations given through the modification of the illustrated counting book, this has shown the success of the changes in activities carried out so that it needs to be applied for teachers to teach numeracy to early childhood. Where the success rate for sorting numbers 1-15 has reached 77%, counting images has reached 84.6% and rewriting numbers has reached 92.3%.

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