

## **Number Symbol Concepts Ability Improvement through the Media Mathematic Tower in Group A at Amaryllis Islamic Kindergarten**

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### **Abstract**

There were problems in the children's ability to recognize the symbols of numbers 1-10. That why this study aims is to improve the ability to recognize the symbols of numbers 1-10 through the mathematic tower media. This research was conducted in group A at Amaryllis Islamic Kindergarten. This research is classroom action research. The subjects of this study were children in group A, which consisted of 10 children. The object of research is children's ability to recognize number symbols 1-10. Data collection by observation. Data analysis techniques were carried out in quantitative and qualitative descriptions. Action research was conducted in 2 cycles, each cycle lasting for three meetings. The results showed that the children's ability to recognize number symbols 1-10 increased after the second cycle. The observation result before the action shows that 10% of the children who have the ability to recognize the symbols of numbers 1-10 has the ability to recognize the symbols of numbers 1-10. The first cycle increased to 25% and the second cycle reached a successful indicator at 85%. The conclusion is mathematic tower games can improve children's ability to recognize number symbols 1-10.

Keywords: mathematical tower media, number knowledge, recognizing numeric symbols.

## **1 INTRODUCTION**

Development is a change that lasts a lifetime with the addition of more complex body structures and functions in gross and fine motor skills, speech and language as well as socialization and independence. Cognitive development is a process of thinking, namely the ability to connect, assess and consider an incident or events. Cognitive potential is determined at the time of conception (fertilization) but whether or not it manifests depends on the environment and the opportunities provided.

Playing is not just to fill time, but is a child's need like food, loving care, and so on. Children need a variety of games for their physical, mental and emotional development. Playing is an important element for the development of children both physically, emotionally, mentally, intellectually, creatively and socially. Early childhood is the golden age which has the potential to train and develop various potential multi-intelligences in children (Aisyah et al., 2013; Kurniati, Alfaeni, & Andriani, 2020). Founded is the low level of cognitive development of children, especially in the ability to recognize number symbols. Based on the results of pre-observations and interviews with class teachers and school principals, information was obtained that there were still some children who lacked the ability to recognize number symbols. Problems with the introduction of numbers, calculating numbers, not to mention adding and subtracting.

Based on the description of the learning problems above, the researcher wants to develop children's initial numeracy skills using a medium, namely the Mathematical Tower media. Mathematic Tower is a media game that focuses on mastering arithmetic

(Fadillah, 2001; Fathani, 2012). Mathematical Tower is one of the media that can be used for children, which is an educational game in the form of blocks (Clements & Sarama, 2005). Beams are plain pieces of wood painted in various colors. Each side of the block has a different number symbol, the way children play it is by disassembling and arranging the blocks in the order of the number symbols so that this media is called the mathematical tower media (Gandana, Pranata, & Danti, 2017).

Paying attention to these problems, the researcher is interested in choosing a research title, namely Improving the Ability of Number Symbol Concepts Through Media Mathematical Tower. This study aims to improve the cognitive abilities of early childhood in recognizing number symbols through the mathematic tower media in group A at Amaryllis Islamic Kindergarten.

## **2 RESEARCH METHODS**

The research method uses Classroom Action Research. The research will use 2 cycles, and each cycle will use 4 steps consisting of; planning (planning), action (acting), observation (observing), and reflection (reflecting). Each cycle will be evaluated whether it reaches the learning target of 80% or not, if it has not been reached then the class will be given remedial, by grouping the classes that are lagging behind will be given learning with the same material and media. Then proceed to the next cycle, if the 80% target has been reached, then no further remedial is held, but immediately evaluates if there are still 1 or two students left behind, an interview or direct interview with the child will be held.

This research will be conducted in group A Amaryllis Islamic Kindergarten which is located at Jl. H. Abdul Rahman No. 5 sub-districts of Cibubur, Ciracas sub-district, East Jakarta.

## **3 RESULTS AND DISCUSSION**

In introducing simple numbers to children, a method or stimulation that is appropriate and fun is needed. One of them is by playing with children both at home and at school, by asking questions about numbers that are simple and easy for children to understand, such as asking children to count how many objects are in the yard or in the classroom in sequence or introducing shapes. numbers from playing activities using tools and materials that are easy to find at home. This will make the child's cognitive development develop if the learning provided is meaningful and fun. So number recognition is very important and must be prepared as well as possible.

In Permendikbud No. 137 of 2014 concerning STPPA (Standard Level of Achievement of Child Development) it is stated that indicators that must be achieved for children aged 4-5 years are counting the number of objects 1-10, knowing the concept of numbers, and knowing the symbols of numbers.

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The steps that can be taken to introduce the first number concept are that the child must first know the language of symbols. Introducing symbols means introducing children to the language orally of number names and the meanings of these number

names, for example the teacher invites children to name numbers starting from one, two, three and so on.

The consideration of this research being conducted in group A of Amaryllis Islamic Kindergarten is that group A children's ability to recognize symbols is not in accordance with the level of developmental achievement contained in Permendiknas Number 58 of 2009. According to Permendiknas Number 58 of 2009 children aged 4-5 years have been able to recognize number symbols 1-10. However, the ability of child A aged 4-5 years in recognizing the number symbols 1-10 is still in the form of memorization.

Even though in a short time, they will enter group B which will continue to recognize number symbols up to the number 20. With this research, it is hoped that it can be a way to solve the problem of children's lack of ability to recognize number symbols, especially in Amaryllis Islamic Kindergarten.

Table 1. Improved Ability to Recognize Number Symbols

Children Name	Pre-Action		1 <sup>st</sup> Cycle		2 <sup>nd</sup> Cycle		Percentage Increase
	Amount	%	Amount	%	Amount	%	
Syifa	7	43,75%	10	62,5%	14	87,5%	18,75%
Uwais	6	37,5%	9	56,25%	14	87,5%	6,25%
Fathan	5	31,25%	6	37,5%	10	62,5%	6,25%
Zahra	8	50%	10	62,5%	14	87,5%	25%
Yumna	8	50%	12	75%	16	100%	25%
Raka	4	25%	7	43,75%	10	62,5%	6,25%
Aya	6	37,5%	9	56,25%	12	75%	18,75%
Almira	8	50%	11	68,75%	14	87%	31,75%
Zahwa	4	25%	5	31,25%	5	31,25%	25%
Ibra	4	25%	9	56,25%	12	75%	6,25%
Total	60	37,5%	88	55%	121	755%	169%
Average	6	37,5%	8,8	55%	12,1	75,5%	16,9%

#### 4 CONCLUSION

Based on the results of the research conducted for two cycles and each cycle was carried out for three meetings, it can be concluded that the increase in the ability to recognize the symbols of numbers 1-10 in children in group A of Amaryllis Islamic Kindergarten occurs due to learning carried out through playing math towers. This is indicated by an increase in the ability to recognize number symbols in each cycle.

The learning steps carried out in introducing number symbols are that children are first introduced to the concept of numbers, after the child knows the concept of numbers then the child is introduced to number symbols. The first step in introducing number symbols is to introduce the language of symbols first, then children are trained to be able to think symbolically which is called reflective abstraction, and finally children are trained to be able to connect between the meaning of numbers and number symbols. All stages of introducing the number symbol are carried out through playing activities using a mathematical tower.

In the mathematic tower play activity, the learning atmosphere is carried out through play so that it is able to present fun learning activities for children. Children are able to absorb what is learned more optimally when it is done in a pleasant atmosphere. Fun learning also makes children not feel bored quickly so that children are able to participate in activities from start to finish. The use of the math tower in learning makes it easier for children to recognize number symbols. In addition, the math tower is an interesting medium for children so that children are more enthusiastic about learning activities.

Based on the results of the data in this study, the results of the child's ability to recognize the symbols of numbers 1-10 in each cycle have increased. Children who are

able to recognize the symbols of numbers 1-10 well in the second cycle reach 80% of the 10 children. These results indicate that increasing the students' ability to recognize number symbols in group A at Amaryllis Islamic Kindergarten for the 2022 Academic Year can be done through playing mathematic tower.

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