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Application Illustrated Number Cards Media to Improve Child's Ability to Understand Numbers

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***Abstract*—Learning media really help students in their learning experience. The selection of the appropriate media to the needs and characteristics of the child will facilitate the achievement of the objectives of a child learning at an early age. The purpose of the research is to improve the child's ability to know numbers using the illustrated number card media. Design research using one group pretest-posttest design. The subjects in this study, i.e. children Group B Kindergarten Putri Fadillah Subdistrict Abeli Kendari City, Indonesia. The results of this study are (1) learning by using illustrated number card media could increase children's learning activities, (2) the ability to know a number of children in a statistically significant increase with the value sig = 0.000 < 0.05.**

Keywords—illustrated number cards, child, media, number

I. INTRODUCTION

Law Number 20 of 2003 about the Indonesia national education system mentioned that education is a planned and conscious effort to bring about an atmosphere of learning and the learning process so that learners actively developing potential itself to religious, spiritual powers of self-control, personality, intelligence, morals, as well as the necessary skills themselves, society, nation, and state [1].

Early childhood education is an effort of the construction are addressed to children from birth up to the age of six through given of stimulus to help the development of education, the growth of both physical and spiritually, so that have the readiness of entering higher education. Osakwe in his research indicates that students who had attended preschool education perform better in aspects of cognitive skills, psychomotor and social skills than students who do not follow the pre-school education. Osakwe suggests that early childhood education should be encouraged by the Government by providing pre-school education facilities (classrooms, teaching materials, and equipment) required for the success of the program and should there be enlightenment campaign that is right about the importance of early childhood education [2]. In this case, parents should also be involved in the experience of early education for their children by providing the necessary learning materials.

Learning in early childhood is a vehicle to develop the most appropriate potential with the abilities, talents, and interests of each child. In addition, the present study aims to introduce the basic concepts of meaning for the child to interact with the environment. Meaningful learning can only occur if noticed early childhood development stages and their characteristics [3].

One of the important developmental aspects in the development of the children themselves are aspects of cognitive development. According to Slamet, cognitive development illustrates the process of child development in thinking and meaningful so it can be thinking at an early age, children begin to show a clear thought process, identifies some of the symbols and signs including language and images. The child also shows the ability to do symbolic games [4]. Cognitive development is the cognitive changes that occur on the cognitive aspect of the child, where this change is a continuous process starting from the concrete process to the higher concept, i.e., abstract concepts and logical [5].

Seeing the characteristics of children at kindergarten age 4-5 years, the introduction of the symbol number early on in school is very important. At pre-school institutions, there is no such field of study learning in elementary school, but early childhood educators must understand how to teach the material to the introduction of the symbol number. Teachers should use the right of way and introducing appropriate symbol numbers in children. Harjanto argued that the ability to know the numbers very well if given to children as early as possible. The benefits of the ability to know the numbers, i.e. for children early on can think logically and systematically through the observation of concrete objects, pictures or figures there are around the neighborhood [6].

Based on observation and discussions with teachers Kindergarten Putri Fadillah Subdistrict Abeli Kendari City, Indonesia found problems related to the activity of the child during the study, i.e. most children show lack attention to learning because learning is applied to teachers not interested and not fun. Children are showing an attitude of passivity against learning. If a child knows the ability in terms of the number of retrieved information that the child is not able to answer the question in a simple, also hasn't been able to mention numbers 1-10, children recognize numerals limited to memorizing the coat of arms, the kid still erred in mention symbol numbers, and in the process of enumerating child discovered mismatch between the pronunciation with the number of items counted.

The reason to develop the child's cognitive ability is to know the coat of arms of the number, i.e. the use of interesting media need to be used so that learning is not quickly boring and fun, so the liveliness of children created by itself. It is as expressed Jacob that success depends not only learning from cognitive factors alone but also from the liveliness of the factors or activities of students in group discussion [7].

Children think concretely by easily learn when using the media of instruction. Learning media makes it easy for children to understand something that is abstract; the media helps the child to explore freely against the construction of knowledge. As revealed by Eshach and Fried that children involved in scientific exploration in early childhood have a better understanding of the concepts of science at a later date [8]. In the case of the learning that takes place at a kindergarten Putri Fadillah Subdistrict Abeli Kendari City Indonesia, media learning used to introduce the symbol numbers can be mock objects or images of the material to be conveyed to the child. One of the right and exciting media to make it easy to know the child in the arms of the number is the illustrated number of cards media.

The illustrated number cards are the card that contains the coat of arms of numbers accompanied by pictures that amount in accordance with the coat of arms of the numbers written on the card. The illustrated number cards media which can be used to help students learn the symbol numbers. The illustrated number of cards can be created by the teacher. It is making an illustrated number of cards tailored to the stage of thinking about children and themes that are being developed in the study. Learn to use illustrated number cards media will be more fun and makes it easy to know the child in the arms of the number if it is done in a way that is fun through play.

The illustrated number cards are a small card that contains numbers, images, text, or symbols that remind or guide students to something related to that image, the size of the picture can be adjusted with great small class facing [9]. The number is the epitome of which is an object that consists of the numbers. For example, the number 10 can be written with double digits, i.e. number 1 and number 10. Many numbers are also found in everyday life [10].

The purpose of the illustrated number cards media as tools of learning, namely: (a) facilitating the learning process in the classroom, (b) increase the efficiency of the learning process, (c) maintain the relevance between the subject matter with learning objectives, (d) help the concentration of the learners in the learning process [11]. Advantages of the use of the illustrated number cards include: (a) stimulating the children quickly get to know numbers, (b) the interest of the child strengthened in mastering the concept of numbers, (c) stimulates the intellect and memory of children, (d) able to develop cognitive abilities, (e) has the concept of counting, (f) the child will develop all the potential that exists in itself, (g) the child will learn to know the sequence of numbers and understanding the concept of numbers, (h) the child will more easily grasp the concept of addition and reduction with the use of pictures and objects [12].

II. Research Method

This type of research is an experiment without comparison with the research design used was one group pretest-posttest design that looks in table 1.

TABLE I. Research Design

Pretest	*Treatment*	*Posttest*
O_1	X	O_2

This research was carried out in a kindergarten Putri Fadillah Subdistrict Abeli Kendari City Indonesia with the subjects in the study was the son of Group B which totaled 18 people.

The variable in this study consists of a bound variable, namely the development of the ability of the child to know and free variables, i.e. illustrated number cards. Data collection techniques used in this research is the use of observation instruments against the child in getting to know the number of the instrument and learning activities for children.

Data analysis on the development of the ability to know the number of children in using categories in table 2.

TABLE II. Category Grouping Ability of the Child to Know the Numbers

Percentage	Category
76% - 100%	Developing Good
51% -75%	Develop Appropriate Expectations
26% - 50%	Started To Develop
0% - 25%	Undeveloped

Children could be said to have been familiar with both if the percentage obtained more than 50% are in the category of at least high. While the statistical tests to find out the significance of the development of the ability to know the number of children in a test using a paired sample t-test with the criteria determining the conclusion namely if the value is sig < α = 0.05 then Ho denied which means that basis there were significant developments in children's ability to know the numbers.

III. Result and Discussion

The research was carried out during the six meetings with pre-test is done before the first meeting of the learning and post-test conducted at a meeting of the end of learning. The result of the ability to know the numbers after being given preferential treatment in the form of the application of illustrated number cards media can be seen in table 3.

TABLE III. The Ability of the Child to Know the Numbers

Category	The large number	Percentage
Developing Good	6	33.33%
Develop Appropriate Expectations	9	50%
Started To Develop	3	16.67%
Undeveloped	0	0%
Total		100%

The results in Table 3 above show that most of the ability of the child to know the number of the already very good through learning by using illustrated number cards media. Whereas the development of the child's ability to learn in the know the number presented in Fig. 1.

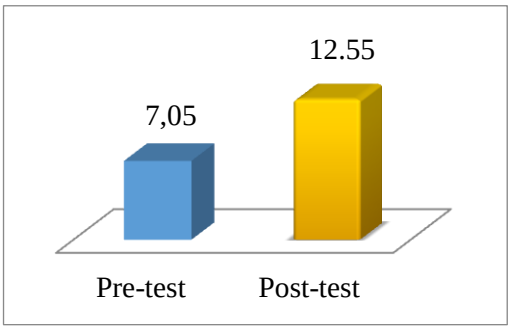

Fig. 1. Development of The Ability to Understand The Numbers

The ability to know the number of children has increased from an average score of 7.05 be 12.55. The existence of this development the result of setting the learning is done through conditioning teacher learning with illustrated number cards media. Although the development of statistical tests needs to be done but to see their significance. Paired sample t-test results test using SPPS can be seen in table 4.

TABLE IV. PAIRED SAMPLE T-TEST RESULTS

Study Grop	*t*	*df*	*Sig (2-tailed)*
Experiment	8.487	17	0.000

Paired sample t-test results of the test are presented in Table 4 above shows that the value of sig = 0.000 < α = 0.05 which means there is a fairly significant development towards the ability of the child to know the numbers.

The use of illustrated number cards customizes the theme to be used or taught. With the illustrated number cards, teachers can teach children about the coat of arms of the number with the request the child to answer simple questions about numbers, shows the symbol numbers, linking the symbol numbers correspond to the numbers coat of arms, and connect numbers with real objects.

The activity of learning is a process of communication between teachers with students. But often in the delivery of the learning happens misconceptions that cause confusion in children so it can mean something else. To avoid the need for a facility that can help the communication process. One of them is to use the medium of instruction. Assorted media are learning many exciting tours, but one of them is illustrated number cards.

The application of illustrated number cards media in this research is very influential on the development of cognitive in know your numbers. It can be seen from an average score of children's learning results before being given treatment learning using illustrated number cards media a pretty significant experience increased after being given the treatment of learning with the use of the illustrated number cards. According to Wong, learning different treatment would result in different values in this experimental class and control. The selection of an effective learning method has a very important role. The influence of liveliness and process skills learners quite significantly to the learning achievements of learners; this resulted in the achievement of their learning increased [13].

The content contained on the illustrated number cards media adjusted to the environment around the child in order to easily recognize it — an image designed with interesting dishes with contrasting color combinations. The illustrated number of cards media are present for each child so that the child actively learning with great enthusiasm. The use of the illustrated number cards learning activities are also carried out by way of the game because of learning for early childhood; the infant is playing while learning.

The emergence of games as a catalyst in the use of illustrated number cards media give rise to a sense of happy and satisfied for children, play as a means of social psyche, having had the opportunity to explore, be creative and learning probe introduce the surrounding environment early on. The results of this research are also in line with the opinion of the Anizar said that students ' responses to the learning method of numbers introduction by the use of picture cards that is done with stories, games, and contests are generally positive [14].

IV. CONCLUSION

The conclusion of the research is to study using illustrated number cards media can increase children's learning activities, and there is a fairly significant improvement against the ability of the child to understand in numbers.

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