THE EFFECT OF CONSTRUCTIVE GAME AND LEARNING MOTIVATION ON CHILDREN'S (AGED 4-5 YEARS) ABILITY TO RECOGNIZE THE CONCEPT OF NUMBERIN RAUDHATULATHFAL AL-FITRAH BINJAI

Siti Nahdani[1], Anita Yus[2], Daulat Saragi[3]

[1]Post Graduate Student, State University of Medan, Indonesia
[2] Post Graduate School Lecturer , State University Medan, Indonesia
[3]Post Graduate School Lecturer , State University Medan, Indonesia

ABSTRACT: *This research is based on the learning that tends to be teacher-centered. It aims: (1) to determine the effect of constructive game on the children's ability to recognize the concept of numbers; (2) to determine the effect of children's learning motivation (high and low) on the ability to recognize the concept of numbers; and (3) to find out the interaction between constructive game and children's learning motivation towards the ability to recognize the concept of numbers; This research is a quasi-experimental study. The population of this study is students in classes A1, A2, A3, at Raudhatul Athfal Al-Fitrah, Binjai. The samples in this study are classes A1 and A2, consisted of 24 children for the experimental class taught by using the Beam Numbers and Snakes and Ladders Game and class A3 is control classes that consisted of 25 students. The results show that: (1) The average of children's ability to recognize the concept of numbers who received learning Beams is 45.46. It is greater than that of children who received learning Snakes and Ladders game 35.63; (2) The children's ability to recognize the concept of numbers with high learning motivation obtain the average of 48.26, while the ability to recognize the concept of numbers of children who have low motivation gets an average value 31.1; and (3) There is no interaction between constructive game and children's learning motivation towards the ability to recognize the concept of numbers.*

KEYWORDS: Constructive Games, Learning Motivation, and Concepts of Number

BACKGROUND

Raudhatul Athfal is a form of early childhood education unit in the formal education that organizes general and Islamic religious education programs for children aged 4 (four) to 6 (six) years. This program aims to help develop both psychological and physical potential which includes moral values, religion, discipline, social emotional, independence, cognitive, language, physical, motor and art so that children are ready to enter further education. Raudhatul Athfal (RA) is an early childhood in which there is a "sensitive period" that comes only once. Sensitive period is the period of maturation of physical and psychological functions that are ready to respond to stimulation in their environment. Experts also mention that this period is the golden age in one's life. At this time, all aspects of a child's intelligence can be developed well and it can easily accept whatever is conveyed by others.

One of the ways to develop children's abilities is to recognize the concept of numbers as an important thing that must be developed. The conceptual ability of 1-10 numbers in children aged 4-5 years is one of the basic abilities that must be prepared, namely the development of mathematical abilities aimed at children being able to manage their learning gains and find various alternative problem solving, ability to sort and group , and preparation for the development of meticulous thinking skills.

Dewi et al. (2014: 2) say that the ability to recognize the concepts of numbers 1-10 is very important for children because: (1) through the ability to recognize the concept of numbers is a basis for recognizing numbers or symbols of numbers for children, where numbers are our most frequent meet in everyday life; (2) children can recognize numbers through concrete objects to abstract; (3) the ability to recognize the concept of numbers 1-10 helps the process of teaching and learning so that what the teacher conveyed can be understood by the children; (4) children can solve problems in numeracy and other real life lessons; and (5) numbers can also train children's memory and teach children to think reasoning (critical and logical thinking). The learning process counts the most important is the development of number sensitivity. Sensitivity to numbers means not just counting, number sensitivity includes developing a sense of quantity and understanding one-to-one compatibility. When sensitivity to children's numbers develops, children are increasingly interested in counting.

One method in developing the ability to recognize the concept of numbers for children aged 4-5 years is through game activities. Game is the most effective way to mature the development of children at preschool age both in the academic field and in the physical and social emotional aspects. John Locke in Morrison (2012: 66) mentions that development originates from stimuli received by children from parents and caregivers and through the experiences they get from their environment. Playing for a child is a fun activity, because by playing children can control their emotions through positive activities and children can play while learning, because playing is an instinct for every child, especially at an early age.

Based on observations through the collection of the results of the child work sheet in the form of data analysis of learning activities, it recognizes the concept of low child numbers, which is 49.31%, in the first semester of the school year 2017/2018 at RA Al-Fitrah, Binjai. Children's development is still very low, namely from 73 children, 36 of them are included in the list of Not Developing, this can be seen when carrying out learning materials to recognize the concept of number children still unable to mention or recognize the numbers indicated by the teacher.

From the results of interviews conducted with the teacher of Raudhatul Athfal Al-Fitrah Binjai, it is conveyed that children have been taught to count numbers 1-10, but when children count numbers with objects there are still those who could not calculate the number of objects correctly. In addition, not all of children are able to count many objects, children also cannot say by pointing objects, spelling out or mentioning the sequence numbers 1-10, pointing to symbols 1-10 numbers, imitating symbols 1-10 numbers, and connecting / pairing symbols with objects - items 1 to 10, so that the expected indicators have not been reached. Seeing these conditions, efforts are needed to develop the ability of children to recognize the concept of numbers through games using media

76

that can attract the attention and interest of children to learn. By playing, children have the opportunity to explore, discover, express feelings, create, and learn in a fun way.

These problems can be overcome by implementing constructive play activities. Where constructive game not only sharpens children's intelligence, but also trains fine motor skills and children's learning motivation. According to Hurlock (1991: 330) constructive play is a game where children use material to make something that is not a useful goal but rather aimed at the excitement gained from making it. Children need constructive play tools that are prepared in kindergartens should provide freedom of activity to children to express themselves through visualization and imagination such as; playing Lego, drawing, sticking, playing and assembling toys, playing candles (play dough), playing blocks, playing geometry, decorating projects, snakes and ladders, chess, and so on.

Constructive games will not make a child feel bored because the importance of that game is pleasure. Children will be very busy making new things such as using blocks, Lego, and plasticizer. This constructive game will not make a child become lazy, because in constructive play the children will continue to use the power of his imagination to turn on this game by making new and unique things namely the number block game and the snake ladder.

Number beam games are a way that can improve the children's ability to recognize the concept of number, it is considered that the game of beams can be an interesting for children to learn the concept of numbers. Number beam games are part of mathematics needed to develop numeracy skills that are very useful for everyday life, especially the concept of numbers which is the basis for developing mathematical abilities. In other words, the development of basic knowledge of mathematics, so that children are mentally ready to take part in mathematics learning, such as introducing number concepts through various tools, and fun playing activities.

In addition to the number beam game, the game that can also affect the ability of children to recognize the concept of numbers is the game of snakes and ladders. Snakes and ladders is a game that is familiar to Indonesia community and popular among the children. Generally, the game of snakes and ladders uses numbers; it is simple and easy to understand. Media snake ladders are used as a medium of learning in early childhood, so it is adjusted to the level of the children's ability for example, for children aged 4-5 years.

Besides that, it is also important to improve children's ability to learn motivation. Motivation is a mental force that encourages the occurrence of human needs which is the basis of motivation to carry out various activities (Maslow in Jamaris, 2013: 172). Children know something profound, and naturally children can develop abilities. Games are a powerful motivator, encouraging children to be creative and develop their ideas, understanding and language.

According to Fauzi (2008) motivation refers to the whole process of movement, including situations that encourage, impulse that arises in the individual, behavior caused by the situation, and the purpose or end of the movement or action. Maslow in Jamaris (2013) states that motivation can push on a number of functions or forms of behavior, and it must be directed to the end. Motivation is carried out towards learning activities. Motivation to learn is the whole or something

77

that encourages children to carry out learning activities, both from in themselves and caused by stimuli from the outside so that they can achieve the desired goals. Children's learning motivation is very capable of encouraging children to be more active in learning especially knowing the concept of numbers in children aged 4-5 years. With the constructive method of play, namely the game of number blocks and snakes and ladders, supported by strong learning motivation, it will be able to accelerate the process of understanding children in learning, especially in understanding the concept of numbers.

RESEARCH METHODS

Place and Time of Research
The study is conducted at Raudhatul Athfal Al-Fitrah, Binjai. It lasts for one month each for the research class group 3 times namely the experimental class 3 meetings and the control class 3 meetings. The time of the study is adjusted to the lesson schedule at Raudhatul Athfal Al-Fitrah Binjai in the form of a teaching and learning process.

Research Populations and Samples
Population is the region of generalization consisting of: objects / subjects that have certain qualities and characteristics determined by researchers to be studied and concluded (Sugiyono. 2010: 143). The population in this study is children at Raudhatul Athfal Al-Fitrah Binjai, consisting of seventy three (73) children.
The sample in this study is a randomized group sample, namely from the class chosen by 2 classes because learning is conducted on two groups, namely the learning group with number beam games and the learning group with the snake ladder game.

Type of Research
The researcher uses the research method is "Quasi Quasi Experiment (Quasi Experimental Method)" with the design of the study as the basis for conducting research that is to distinguish the influence of Constructive Game Methods.

C. DISCUSSION OF RESEARCH RESULTS

The main purpose of this study is to determine the effect of constructive game on the ability to recognize the concept of numbers of children aged 4-5 years through playing Number Beams and Snakes and Ladders in Raudhatul Athfal Al-Fitrah Binjai, and to find out the difference in learning motivation of children who play Number Beams with children playing Snakes and Ladder in Raudhatul Athfal Al-Fitrah Binjai.

The Effect of Constructive Games on Student's Ability to Recognize the Concept of Numbers

The statistical hypothesis testing for snake ladder learning games and number beam learning games are as follows:
Ho: $\mu A1 = = \mu A2$
Ha: $\mu A1 \neg> \mu A2$

Based on the results of the calculation of the data, it can be seen that the children are taught by using the number beam learning game to obtain the average value 45.46 while the concept of the number of children taught by learning games Snakes and ladders obtain the average value = 35.63.

The results of the analysis of variance for both learning games show that the price of fh is 21.268 greater than the price of f1 of 4.06 at a significant level α = 0.05 so that H0 is rejected at a significant level α = 0.05. It can be concluded that the group of children taught using snakes and ladder learning games get a higher number concept than a group of children who are taught with the number beam learning game to be verified.

The Effect of Learning Motivation (High and Low) on Students' Ability to Recognize the Concept of Numbers.

The statistical hypothesis testing of high learning motivation and low learning motivation is as follows:
Ho: $\mu B1\neg = \mu B2$
Ha: $\mu B1 \neg> \mu B2$'
Based on the results of the calculation of the data, it can be seen that the ability to recognize the concept of number of children who have high motivation scores get average 48.26, while the ability to recognize the concept of number of children who have low motivation get average 31.1.
The results of the analysis of variance for both motivational games show that the fh price of 69,349 is greater than the price of f1 of 4.07 at a significant level α = 0.05 so H0 is rejected at a significant level α = 0.05. It can be concluded that there are differences in the ability to recognize the concept of numbers of children who have high learning motivation with the ability to recognize the concept of number children who have low learning motivation are proven.

Interaction Between Constructive Games and Children's Learning Motivation

The statistical hypotheses tested are:
Ho: A> <B = 0
Ha: A> <B ≠ 0
Based on the results of testing the above hypothesis obtained fh = 0.061 and the critical value ft = 4.07 at the level of α = 0.05. These results indicate that fh = 0.061 < ft = 4.07 so it can be concluded that the null hypothesis which states there is no interaction between learning factors (snake ladder and number beam) with the learning motivation factors of children (high and low) in influencing the ability to recognize the concept of numbers, or if it is also seen the significance level is 0.805 and it turns out that the value is greater than α = 0.05 or P-value> α, so the null hypothesis states that there is no interaction between learning factors (snakes and numbers) with motivational factors learning (high and low) in influencing the ability to recognize the concept of numbers is acceptable. It means that it can be concluded that there is no interaction between learning factors (Game Snakes and Beams of numbers) and learning motivation (high and low) in influencing the ability to recognize the concept of child numbers. The level of learning (snake stairs and number blocks) is in accordance with the learning motivation of children (high and low) in improving their ability to recognize the concept of number children. It can be seen from the average value of each group of data that the ability to recognize

79

the concept of numbers of children taught by number beam learning is high learning motivation group (52.5), and low learning motivation group (35.6), greater than children taught by snake learning ladder namely high learning motivation group (42.92), and low learning motivation group (27.00).

CONCLUSION

Based on the results of the analysis and discussion in this study, several conclusions are presented as follows:
1). The ability to recognize the number concept of children who get a number learning beam game has 45.46 is greater than a child who gets a snake ladder learning game of 35.63.
2). Learning motivation of children who get number beam learning games is greater than children who get snake ladder learning games. It can be seen that the ability to recognize the number concept of children learning by having high learning motivation obtains an average value 48.26, while the ability to recognize the concept of number of children who have low learning motivation gets an average value = 31.1.
3). Constructive learning activities (snake ladders and number blocks) are in accordance with children's learning motivation (high and low) in improving the ability to recognize the concept of child numbers. It can be seen from the average value of each data group that the ability to recognize the concept of numbers is taught by number beam learning have high learning motivation (52.5), groups of children who have low learning motivation (35.6), are greater than children taught with snake ladder learning games, namely groups of children who have high learning motivation (42.92), and groups that have low learning motivation (27.00).

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