The Science Process Skills of Class B Children Reviewed from the Decision-Making Learning Model at TK ABA Rendeng, Purworejo City

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Article Info

Abstract

This research is done based on the phenomenon at TK (Kindergarten) ABA Rendeng, Purworejo City where children are not used to communicating what they see, the minimal use of tools and materials during the learning process, models and variations of learning that are not appropriate with the material and often using media images or through worksheets. From these problems it will result in children having difficulty drawing conclusions, lack of understanding of children, children are often not interested in science activities, and children feel bored. This study aims to prove whether there are differences and improvement in science process skills after being given a decision-making learning model. The population of this study is all students with total 50. The sample is 31 students from the total population that are taken by cluster sample technique. This study uses an experimental model with a one-group pretest-posttest design technique. The results of the calculation of the t-test have obtained the value of t-count = 2.042 with sig = 0.000 so Ha is accepted. This proves that there are significant differences regarding the class B child science process skills in terms of giving treatment by using decision-making learning models. From the test results using the percentage technique, there is an increase in children's science skills in class B, as seen from the percentage increase in pretest and posttest data of 32.2%.

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INTRODUCTION

Education according to the Law Number 20 of 2003 is a conscious and planned effort to develop all the potential had by students through the learning process. According to Masnipal (Kurniawati and Adiarti, 2017) Early Childhood Education is divided by the age of students. The students aged 2-3 years are enriched into crèche, age 3-4 years into playgroup, and 4-6 years to kindergarten/Raudhatul Athfal. Children are born with their potential and talent. They have their own abilities, so their intelligence is not the same as each other.

Early childhood education is the development of efforts aimed at children from birth to age six years through the provision of educational stimulation for growth, children's readiness must go further through education (Ministry of National Education, 2003: 16). According to Anwar (Syofriend, 2014) early childhood education is education that serves to help physical growth and psychological development of students who appear inside or outside of school. Early childhood education not only functions is to provide learning experiences for children, but also to optimize the potential for child development.

Education can be regulated through informal, formal and non-formal education, by getting a decent education from an early age so the nation strives to achieve progress in various fields to realize the ideals that exist (Putri and Pranoto, 2017). According to the National Association for the Education of Young Children (NAEYC), early age or known as "The Golden Age" is children in the age range 0-8 years. Later, Hurlock (1978) argues that the beginning of children is entering the age between 2 to 6 years is the age of early childhood or preschool age (Apriyanti and Diana, 2016).

Early Childhood is a unique time in the lives of children, because it is the most sensitive and busiest growth period. The importance of early childhood education according to the approach that will be used in learning activities that focuses on children. One of the early childhood educations is kindergarten education (Umaroh, 2012). This age is an appropriate period of development so as to develop and improve all children's abilities. However, in this study, the researcher uses preschool children who are in the age range of 5-6 years. The National Education System Law defines early childhood education as a guide for children from birth to six years with education, final stimulation to help the growth and mental development of children physically and mentally (Wahidin, 2015).

The national education system law states that the beginning of childhood education is a development effort for children from birth to six years of age which is achieved by providing educational stimulation to help growth and development. The early childhood education needs to be done because its main function is to develop all aspects of child development, including cognitive development, language, gross motor skills and fine motor skills, as well as social and emotional (Rusdiyani, 2016).

Childhood is a sensitive period in which children begin to receive various efforts through the development of children's potential. Sensitive times are periods in which maturity of physical and psychological functions is ready to respond to stimuli provided by the environment. This period is the time to lay down the foundation or the first foundation in developing children's abilities and skills. The cognitive ability can prepare individuals to improve their quality of life. Students are guided to think critically, solve problems, and make decisions that can improve their quality of life for later life with science and knowledge (Rusdiyani, 2016).

According to Bloom's (Andikawati and Diana, 2017) learning science is basically an effort made to learn science about certain phenomena or symptoms and problems in nature. The knowledge is obtained through systematic, organized, and scientific methods, logical, and experimental studies (experiment and observation), and through scientific research. The scientific thinking process is very important to be taught well to children from an early age, so that children are trained to think logically, critically, creatively, and facilitate children in the process of mastering the material they get. This is evident from children's scientific abilities at the level of exploring (observing and identifying), classifying (conducting simple experiments), and fun communities. This ability is a basic ability in learning science.

Learning can be interpreted as an instructional system that refers to a set of components that are interdependent with each other to achieve goals. Whereas according to Jones teaching as a process carried out by teachers in guiding, helping, and directing students to have learning experiences, in other words teaching is a way of preparing learning experiences for students (Cahyani, 2014).

Surya (Aristowati, 2014) defines learning as a process carried out by individuals to obtain a new behavior change as a whole, as a result of the individual's own experience in interacting with

his environment. For early childhood learning in kindergarten institutions is play-oriented learning (learning while playing and playing while learning), development-oriented learning that provides more opportunities for children to be able to learn in the right ways. The most appropriate approach is child-centered learning.

Learning science is important for children, from there they understand the process of science, from experimental science studies together and forms of integrated attitude. Science that is suitable for learning activities for the development of science learning is by applying process skills at each stage. Children must have the process of science skills to develop their knowledge (Rahayu and Waluyo, 2015).

Skills in the Ministry of Education and Culture (Hadiana, 2011) are awareness into the development of intellectual, social and physical skills that are based on the basic abilities of each child. These skills are then developed by the teacher through learning. According to Conny (Hadiana, 2011) process skills are basic abilities that are owned, mastered, and applied in a scientific activity so that they can find something new.

Science process skills in learning is a management of teaching and learning activities involving the abilities and skills of students who are actively and creatively in the process of obtaining learning outcomes. Science process skills can provide students with the ability to form their own concepts about how to learn an invention, develop their own abilities, help concrete thinking and develop students' creativity to realize, understand, and master a series of activities related to learning outcomes that have been achieved (Iqbalia, 2015) Ali Nugraha (Risamasu, 2016) defines science process skills as all the skills needed to obtain, develop and apply concepts, principles, laws and scientific theories, both in the form of mental skills, physical skills (manual) and social skills.

Children science process skills are expected to develop optimally as expressed by Rosalin and Karin (Muntomimah, 2014) that science learning in early childhood develops children's activities to explore the environment and reflect their observations and findings. Children will learn to experiment and explore with the surrounding environment, so as to build an attitude and deep knowledge that will be brought and used in adulthood (Widayati, 2014). Children are also expected to have a scientific attitude so that children can solve the problems they face. Through process science children will dare to try, when children do something means the child's

memory will be sharper because it is essentially "learning by doing" (Inderalaya, 2016).

Gagne stated that the learning model/method is a repetitive learning process, and can be applied in various subjects, and can be used by more than one teacher (Rusdiyani, 2016). One model developed based on the new paradigm is decision making (problem solving) learning model. Terry stated that decision making was a basic selection based on certain criteria for two or more possible alternatives. While George said the decision-making process is done by most managers in the form of awareness, thinking activities which included consideration, assessment and selection among a number of alternatives (Moordiningsih, 2015).

Looking at the conditions in the field, based on observations in TK ABA Rendeng, children are not used to communicating what is seen and have not been able to explain the causes and effects of what happened, the use of tools and materials that are minimal during the learning process, models and variations of learning that are lacking in accordance with the material to be studied, as well as frequently using image media or through Worksheets (LK) and TK magazines. From the problems that have been mentioned, then I am interested in researching the science process skills of Class B children reviewed by decision-making learning models at TK ABA Rendeng.

The excellence of my research is this is the first research on children's science process skills in terms of the use of decision making learning models, because there is no research on this field before. Whereas the purpose of this study is to find out whether there are any differences and improvements in the Class B science skills in TK ABA Rendeng in terms of the application of decision- making learning model.

RESEARCH METHOD

The research uses a quantitative research method. While the research design is used pre-experimental design with one group pre-test - post-test design approach method. The research's sample consists of 31 children in the category of children science process is poor and good. The sampling technique in this study is a sample cluster. Data analysis method in this study uses the descriptive data analysis method with percentage technique and hypothesis testing with paired sample t-test technique.

RESULTS AND DISCUSION

The results of pretest and posttest data show that the mean of pretest value is 44.45 which increase in the post-test mean value of 47.77. This shows the mean value of children's science process skills in class B experienced a significant difference after being given the treatment of decision-making learning model. The probability value shows (sig 2 tiled) 0,000 < 0,05, then Ha is accepted. From these results, it can be concluded that there are significant differences in children's science abilities in class B after being given the treatment of decision-making learning model. The output of the t-test can be seen in table 1:

Table 1. Paired Sampel T-Test

Paired Differences		T	Sig,	(2-
	Mean		tiled)	
Pair 1 pre-test				
posttest	-3.323	-4080		.000

The result shows that the average Class B science process skills have reached 77.4%. This proves that the improvement in children's science process skills in Class B has a percentage increase from 45.2% to 77.4%. Based on these results, it indicates that this study has been successful and the action hypothesis is accepted. Then it can be seen that the application of decision-making learning models can improve children's science process skills in class B at TK ABA Rendeng.

Table 2. The Percentage of Science Process Skill Improvement

Treatment	Percentage (%)
Before	45,2%
After	77,4%

Learning science for early childhood as a whole has the following objective especially children have the ability to solve problems they face through process science learning, so that children become skilled in solving various things they face. Then so that children get better and more reliable scientific knowledge and information, meaning that the knowledge obtained is based on appropriate scientific standards, because the information presented is an objective finding and formulation and in accordance with the rules that protect it. So that children are more interested and interested in living the science that

is and is found in everyday life and in the surrounding natural environment. The aim of science learning for children from other perspectives is that children have the ability to solve problems faced, and improve children's scientific abilities. With this learning, children are expected to have a scientific attitude and children are more interested in living science learning. Children must be taught how to feel, experience, and try various natural phenomena. It because activities related to experiments will stimulate children's creativity. Children will also learn to dare to try (Inderalaya, 2016).

The introduction of science should be carried out from an early age with fun activities and through habituation so that children experience the science process directly. This is done so that the child not only knows the results but can also understand the process of the science activities he is doing. Science allows children to explore various objects, both living and dead objects. Children's life cannot be separated from science, creativity and social activities (Arumsari, 2013).

Learning science must involve aspects of knowledge, affective, and psychomotor so that knowledge to understand concepts through the process of thinking by having process skills and scientific attitudes. This understanding is beneficial for children to solve problems in everyday life, and children can critically respond to scientific development. In addition to kindergarten children learning science should be done simply while playing. Through this science learning, children are expected to be able to do simple science experiments to train children to think logically. Science allows children to explore various objects both living and inanimate objects and symptoms of events in problem solving. In learning science while playing, children should be taught to use all five senses as well as possible. It is hoped that in the learning process children can find answers through playing (Arumsari, 2013).

The use of various learning models will help students express their feelings. It will also encourage students to be more motivated and motivated in learning, so that students will become more active in learning. Besides that the child will also get more knowledge from the existence of science learning. Another thing is that in learning a teacher really needs to apply various kinds of learning models. This is caused by several reasons including students having diverse learning styles, modeling creativity in students, students will have a deep understanding, and encourage students to be more active (Nurmaleni, 2014).

There are many models are used to be able

to create teaching and learning processes that lead to the cultivation of potential students to actively participate in deciding a problem/problem solving and enhancing students' thinking skills. One of them is decision-making learning model. The decision-making learning model is a learning model that can improve students' ability to work together among fellow students. The students will become more active in learning and in the end students can think in an adult way and can improve their cognitive abilities, especially children's scientific abilities in problem solving (Puteri, 2014). So, giving the treatment of decision-making learning model is expected to improve the science process skills of class B children.

The researcher observes the changes in children's science process skills in class B TK ABA Rendeng before and after being given treatment. Before being given treatment, the children still have science process skills in the poor category, but after being given the treatment of decision making learning models, the child's science process skills are in the good category. Various aspects of children's science process skills that are increasing and experiencing change include observing, classifying, predicting, communicating, and using experimental tools.

CONCLUSION

Based on the result of the research "Science Process Skills of Class B Children Reviewed From the Decision-Making Learning Model at ABA Rendeng Kindergarten, Purworejo City", it is concluded that there are differences in the Class B children's process skill in terms of decision-making learning model at TK ABA Rendeng. There is also an increase in the science process skill of Class B children after being given the treatment of decision-making learning models at TK ABA Rendeng.

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