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Environment-Based Science Learning to Develop Children's Cognition

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Abstract

Early childhood education is the initial foundation in forming personality, individual character which will influence their life until adulthood. Science process skills in PAUD aim to develop science learning in solving the problems faced. The presence of this article aims to improve cognitive skills through science learning based on the use of the environment for early childhood. Using the literature review or library research method. The results of a review of several scientific literature show that introducing science learning from an early age is very necessary to add insight to students. By learning science, we encourage children to think critically, through simple experiments such as mixing colors or changing an object. so that they can improve their scientific abilities. Apart from that, in science learning we can train children to recognize symptoms that exist in our immediate environment. And also in this case, science and the environment can be combined as a development to develop cognitive abilities in early childhood, as the family environment, school environment and also society are places where children begin to explore their identity.

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1. INTRODUCTION

Early childhood education is the initial foundation in forming personality, individual character which will influence their life until adulthood. Early childhood, seen from the age range according to law no. 20 of 2003 concerning the national education system says that early childhood is children aged 0-6 years, Sunanih, (2017) explains that based on experts, early childhood is children aged 0-8 years, and also Prasetiawan, (2019) stated that early childhood is a golden age, namely a period where the brain's ability to absorb information is very high, whatever information is given will have a strong impact on children in the later period of the golden age period, namely 0-2 years, 0-3 years, 0-5 years or 0-8 years).

Based on a review related to early childhood learning, Ali (2012) explains that learning and education are two things that are closely related and cannot be separated. Education is an effort to improve human resources. This can be realized through learning. Learning is a process of changing behavior through experience and practice. This means that learning activities are changes in behavior that involve knowledge, skills, attitudes, and even include all aspects of organization or behavior.

In this case, it is related to learning to develop the cognitive abilities of young children through the surrounding environment to improve their abilities in cognitive development, as nature and the environment are biological learning objects, both physical, socio-cultural and technological. Students learn everything related to the scientific method, both knowledge and also the science of life. Because the stages in the scientific method contain scientific values and attitudes that are applied in the learning stages. One of the steps in the scientific method is observation, observation is the first step taken in carrying out the learning stages using the scientific method. Therefore, science or science is a subject of discussion related to the field of

study of reality or facts or theories that are able to explain natural phenomena, and also science in early childhood education can encourage children to explore the environment and reflect on it by doing observation and discovery. Basically, science is not an approach determined from experience, but rather part of an ongoing integrated approach where children think and build a basic understanding of their world. Science is something real and close, inherent to us.

The development and introduction of science concepts in early childhood is fundamental and introduces learning activities that are packaged as fun, probing, and carrying out experiments to find out the reality in the natural environment. Kinzie, et al (2014) early childhood science learning is a lesson packaged to develop the foundation of science skills in children, namely in problem solving and encouraging children to be able to develop imagination when making observations. Son (2013).

The use of natural resources and the environment as a learning resource is very beneficial for the development of children's cognitive learning, because from nature and the surrounding environment children can learn many things, for example using plastic waste as a learning resource in making scientific work, introducing water sources. , introducing the animals around, and using plants as learning, and introducing the benefits for students that the surrounding nature and its contents are created by Allah and also how we introduce the benefits.

In this case, as explained by the OECD in the Ministry of Education and Culture, (2017), students make observations by observing all the facts found in the student's environment, using sensory tools to find problems found in their environment. Scientific literacy is knowledge or scientific skills that function to examine all questions, as new knowledge, explain phenomena that occur, draw conclusions from existing facts, understand various characteristics of science, raise awareness of the influence of scientific and technological developments on the environment, intellectuals, and culture and a willingness to be involved and care about existing science cases and issues. Utilizing natural resources as learning to develop children's cognitive abilities has many benefits in the child's development. As explained by (Ramadhani 2020), cognitive is a thinking process, namely an individual's ability to connect, assess and consider an incident or event. Cognitive processes relate to the level of intelligence that marks a person with various interests, especially those aimed at ideas and learning. And also (Rambe 2020) stated that cognitive development is very necessary for the development of cognitive abilities. For example, grouping, recognizing numbers, recognizing geometric shapes, recognizing sizes, recognizing the concept of space, recognizing the concept of time, recognizing various patterns, etc. that can be applied in everyday life. in children, namely in solving problems and encouraging children to be able to develop their imagination when making observations.

Basically, by using the surrounding environment as a learning resource, it is hoped that it can help improve the quality of student learning in the learning process, and also learning resources as it is known are educational facilities or facilities which are an important component for the implementation of the teaching and learning process in schools. In implementing teaching and learning, teachers should utilize adequate learning resources, because the use of learning resources. Therefore, it is important in the teaching and learning process. It is said to be important because utilizing learning resources will be able to help and provide opportunities for students to be more active in the learning process and can provide a concrete learning journey.

The use of natural resources and the environment as a learning resource is very beneficial for the development of children's cognitive learning, because from nature and the surrounding environment children can learn many things, for example using plastic waste as a learning resource in making scientific work, introducing water sources. , introducing the animals around, and using plants as learning, and introducing the benefits for students that the surrounding nature and its contents are created by Allah and also how we introduce the benefits. Based on (Mustika and Nurwidaningsih 2018) that activity is a process of activity that is followed by changes in behavior, as a result of interaction with the environment. Activity in the Big Indonesian Dictionary is activity, activities, busyness or one of the work activities carried out by each section in each organization or institution.

2. RESEARCH METHOD

The type of research used is the literature review method or *library research*. Research is carried out by collecting data or scientific papers that are relevant to the library research object. In this research, data was obtained from the literature, the information was obtained from literature on the Google Scholar internet such as books, journals and articles related to "Environment-Based Science Learning to Develop Children's Cognition" which consists of the definition of early childhood character education, character values developed in early childhood education, objectives of early childhood character education published for 5-6 years. Data analysis in this research begins with collection, grouping, verification, analysis, and drawing conclusions.

3. RESEARCH RESULTS AND DISCUSSION

3.1.Early Childhood Science Learning

From reading several previous research journals, there are definitions of Science Learning for Early Age Children, including:

Studying science or knowledge is a subject of discussion related to the field of study of reality or facts or theories that are able to explain natural phenomena. Science in early childhood education can encourage children to explore the environment and reflect on it by making observations and discoveries, and also science activities are very necessary for early childhood because through science activities children learn to observe questions, explore conducting trials or experiments, predicting and other skills. solve problems, and also the provision of high abilities and creativity will be able to facilitate and find productive ways in increasing the introduction and mastery of science in early childhood, creative abilities will be Basically science is not an approach determined from experience, but rather part of a an ongoing integrated approach where children think and build basic understanding of the world Science is something real and close, attached to us, around us, and every moment we perceive with our senses. The development and introduction of science concepts in early childhood is fundamental and introduces learning activities that are combined to have fun, investigate and carry out experiments to find out the reality in the natural environment.

Basically, the science learning materials that can be given to young children according to Yulianti (2010) include: (1) Getting to know objects around you by weighing, measuring and measuring activities, (2) Blowing up balloons and then releasing them to explain the concept of moving air, (3) Objects that are put into water (floating, floating and sinking events, (4) Objects that are dropped explain the concept of gravity, (5) Experiments with magnetic objects, (6) Observations with a magnifying glass, (7) Feeling and distinguishing various tastes and smells, (8) Mixing colors invites children to know the concept of color which consists of primary colors and secondary colors, and (9) Observing the process of observing the growth process in plants.

Therefore, the acquisition of various aspects of development can be achieved in one way, namely by introducing science to young children. Introduction to science should be carried out from an early age with fun activities and through habituation so that children experience the science process directly, and so that children not only know the results, but can also understand the science processes and activities carried out. And also, by applying the experimental method to science, children can interact directly with the activities provided by the teacher. In this way, it is hoped that children can understand the process of the activities provided, and can understand and comprehend scientific concepts. In its implementation, teachers can use media available in the school environment.

3.2.Environment to develop Cognitive Early childhood

Basically, what is stipulated by the Constitution of the Republic of Indonesia Number 20 of 2003 states that learning is a process of interaction between students and educators, and also learning resources in a learning environment, as is the effort made by educators to improve

the quality of educators in schools, namely by develop learning resources that suit the character of students and the needs of learning activities. We can use natural resources or the environment as a learning resource because by learning from the surrounding environment, children can explore the surrounding environment, they can turn something that is not useful into something that is useful, for example processing plastic waste. As stated by (Darmojo, 1993: 3) that by using the natural environment as a learning resource, educators will more easily explain learning material by using everything that is in nature, students will better understand the material being studied through direct observation in the natural environment. by using the five senses.

Therefore, a cognitive process is also related to the level of intelligence (*intelligence*) which marks someone with various interests, especially aimed at ideas and learning, and also in providing stimulation to develop these cognitive aspects, of course an understanding of development methods related to this is very necessary. educators/parents to be able to understand the nature of cognition and how children's cognitive abilities develop at their level of development.

Jean Piaget (1896-1980) He succeeded in integrating elements of psychology, biology, philosophy and logic in providing a comprehensive explanation of how a person acquires knowledge, as one of Piaget's theories states that knowledge is built through activities or learning activities, and also Piaget rejecting the old belief that intelligence is genetically innate. Therefore, understanding the psychology of cognitive development in early childhood cannot be separated from leading psychology figures who have devoted their energy and thoughts to studying this matter.

There are several steps that can be taken to improve cognitive development in early childhood, including: (1) Improving Logical Thinking Ability, which is very necessary for children, because this ability can educate very strong discipline. Logic plays a big role in making children more mature with mature decisions, (2) Finding Cause-Effect Relationships as from these two relationships, it can be seen that the effect of an event has a cause. For example, the cause of death is illness, the cause of a house burning down is a short circuit and so on, and (3) Increasing Understanding of Numbers The easiest way to teach children to love numbers and numbers is with money. Usually, everyone, including children, really likes money. In fact, almost every day children always ask their parents for money.

Therefore, there are also several roles that the environment plays in the cognitive development of early childhood, including the following:

a. Family Environment

   As The family environment is the main foundation for shaping the good and bad of the human person so that he develops well in his ethics, morals and morals, therefore the role of the family can shape the child's cognitive and personality, and can also determine the educational process that the child receives, not only at school but all factors can be used as a source of education. Therefore, the family environment must also be able to provide and prepare education for their children so that they become an educated next generation, which, through educational levels, can form and develop children with good character, social spirit, civilized behavior and skill in their skills.

b. Social Environment (PAUD)

   In education, this is a collaborative process with the child's character and character level development, where these interactions and the information or knowledge they obtain then enters and becomes part of the child's self, experience and conceptual network. Therefore, freedom of activity will reveal hints about the child's development to educators, leading to discoveries that make it possible to design a teaching method. As in the implementation of PAUD, the environment should be directed towards a quality form. Because it is part of significant facilities and infrastructure.

c. Community Environment

A community environment is an area where a group of people are relatively independent, live together, have the same culture, and carry out most of their activities within that group, and the community also has a role that is no less important in efforts to shape children's character.

4. CONCLUSION

As an educator in introducing science learning from an early age it is very necessary to add insight to students, with children learning science we invite children to think critically, through a simple experiment such as mixing a color, or changing an object so as to improve their ability in science. In addition to that, in learning science, we can train children to recognize symptoms in our immediate environment. And also in this case, science and the environment can be combined as a development to develop early childhood cognition, as the family environment, the school environment, and also society is a place where children begin to explore their identity.

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