ICECEM INTERNATIONAL CONFERENCE ON EARLY CHILDHOOD EDUCATION IN MULTIPERSPECTIVE

APPROACH TO THE ENVIRONMENT (EXPLORATIVE CREATIVITY) AS STIMULATION OF SCIENCE SKILLS FOR CHILDREN AGED 5-6 YEARS

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Abstract. This study aims to determine the stimulation of science skills in 15 children aged 5-6 years through an environmental approach that is explorative creativity. The type of research carried out is a class action research using the Kemmis and Taggart model with the stages of planning, implementing, observing, and reflecting which is carried out in 2 cycles. Data collection uses observation and documentation which is then analyzed using descriptive quantitative. The results of this study indicate that the approach to the surrounding environment can stimulate science skills. The results of the first cycle increased from 16.55%, namely from 33.33% to 50% by 38.33% in the second cycle to 81.67%.

Keywords: environmental approach, exploratory creativity, science skills, early childhood

INTRODUCTION

Early childhood is a child who has just been born to the age of 6 years. Early age is a very decisive age in the formation of information. As stated by Plato a philosopher that the most appropriate time to educate children is before the age of 6 years or pre-school period. Montessori also revealed that this period is a sensitive period, it is during this period that children easily receive stimuli and are ready to carry out various activities (Hainstock, 1999).

The pre-school period in the growth and development of a child has an intellectual capacity of 80%, which means that children have a strong understanding of the information obtained at that time. This information stimulates all aspects of its development. All developments in early childhood learning develop through cognitive abilities related to process knowledge, problems, and concepts.

Piaget in Jamaris explained that cognitive abilities in early childhood progress through four clear stages, one of which is the preoperational stage (age 2-7 years). Where this stage is the beginning of the ability of early childhood to construct knowledge. This stage is a beginner period for them to build their ability to compose thoughts. Cognitive ability is the ability to learn new skills and concepts, one of which is science skills (Jamaris, 2006).

Early childhood science is different from adult science. Science for children is everything that is amazing, something that is considered interesting and stimulating to know and investigate. Science skills for early childhood emphasize process rather than producing products. The scientific process is known as the scientific method which in general includes observation activities, finding problems, conducting various experiments, analyzing and drawing conclusions (Suyanto, 2005).

Early childhood science skills can be stimulated using the bulletin board media experiment method (Hakim, 2020). By observing, classifying, predicting, and communicating the bulletins that have been provided by the teacher, the results of the observations are posted on the board. Science process skills can also be improved through an open inquiry approach, namely the teacher gives problems or problems and then students solve problems through observation, exploration of objects that have been determined by the teacher (Nurlina, 2020).

Science activities allow children to carry out various exploratory activities on various objects, both living and non-living objects, science can also train children to optimally use their five senses to recognize various symptoms of events around children. In this case the child can be trained to see, touch, smell, feel, and hear. So that optimally using the 5 senses of knowledge that will be obtained by children will be useful as capital for thinking in the next process.

Science ability is part of the ability of cognitive aspects related to learning about the surrounding environment (Desmita, 2010). The surrounding environment is everything that is around or around with all inanimate and living things including humans and their behavior and other living things. The surrounding environment has the potential to develop knowledge through interaction with its environment. Utilizing the environment by bringing children to observe will add balance to learning (Suliani, 2021).

Previous research has described stimulating science skills through bulletin board and open inquiry experimental methods, but has not described an approach to the surrounding environment as a stimulation of science skills. Therefore this research will focus on environmental approaches to stimulate science skills.

METHOD

This research is a classroom action research model of Kemmis and Taggart with the stages of planning, implementing, observing, and reflecting which are carried out in 2 cycles. In one cycle it is carried out 3 times. The subjects in this study were children aged 5-6 years in the Muslimah Kindergarten, NU 25 At Taqwa, with a total of 15 children. Data collection using observation and technical analysis of data using quantitative descriptive. The data obtained is in the form of a numerical score with 4 criteria, namely: score 1 if the achievement is at the undeveloped stage, score 2 if the child's achievement is at the developing stage, score 3 if the child's achievement at the developing stage is as expected, and score 4 if the child's achievement is at very well developed stages. The indicator instruments studied in measuring early childhood science skills are: observing ability, classifying ability, communicating ability, and problem solving ability.

RESULT AND DISCUSSION

1.1 Pre-Action

Before planning, first identify existing problems through observation. This observation stage aims to determine the initial ability of children's science skills. From the observation results, it was concluded that the stages of children's science skills were still low, children could not yet observe objects, then classify them from the observations, solve the problem if there were problems, and communicate the results of the series of observations. The complete results of the achievement scores are shown in diagram 1.

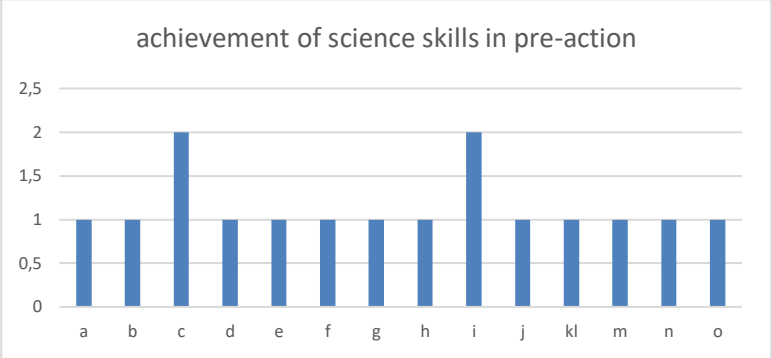

Diagram 1. Outcomes of pre-action science skills

Based on the results of initial observations, it can be seen that the achievement of science skills for children aged 5-6 years at the Muslimat NU 25 At Taqwa Kindergarten is at a developing stage by getting a total score of 20 or presented as 33.33%. this score has not yet reached the predetermined success indicator of 75%. Researchers need to improve methods in the learning approach to the surrounding environment.

2.2 Cycle I

The first step that the researcher took was to prepare steps for learning with the surrounding environment approach. Steps prepared include determining locations for children to explore, preparing equipment such as safe children's footwear, whether the weather is favorable or not in rainy conditions, mats for footing areas before and after activities.

Cycle I was carried out 3 times. The activities are carried out starting at 08.00 after the initial religious activities/activities are finished. The teacher explains in advance the sequence of activities to be carried out, namely: children are asked to enter the location or environment that has been chosen, see and observe or look for something that is considered interesting in that environment. Learning the explorative environment approach as the core learning activity is carried out for one hour. When finished, the children were asked to gather on the mats that had been prepared and describe what they had seen and observed. Each child one by one in turn.

In the main activity, the researcher observed all the indicators on the instrument, namely: observing any object, classifying similar objects, solving problems if there were

problems with the object being observed, and being able to communicate coherently to friends and teachers from what had been observed. The score obtained from cycle I was 30 scores from 15 children or 50%. The score is at the stage of starting to develop. There has been an increase from pre-action to cycle I. However, indicators of success have not yet been achieved. Some children already want to see objects in the environment. However, they are still unable to describe and describe the object seen, the child is only able to answer what object is seen. For this reason, researchers need to carry out cycle II so that the improvement of science skills achieves indicators of success. The reason for not achieving success indicators is because the teacher's presentation instructions before playing are not clear, they are not used to explorative activities in an open environment, the time used is too long (one hour) so that it encourages children to play freely outside the context of observation. The following is a comparison diagram of the achievement of science skills in pre-action and cycle I.

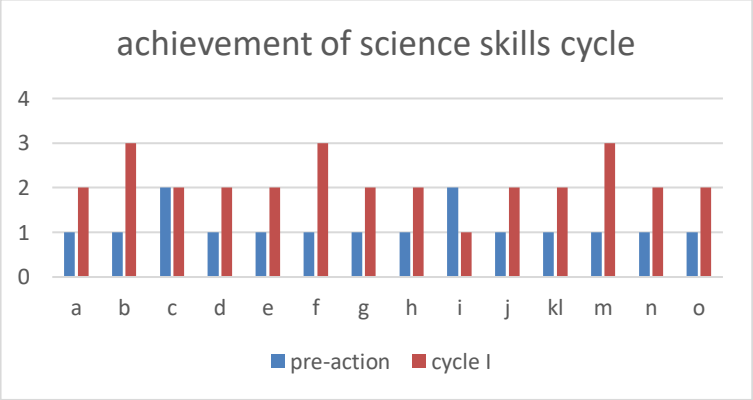

Diagram 2. Achievements in the Development of Science Skills in cycle I

1.3 Cycle II

The planning in cycle II is the same as in cycle I. However, in cycle II there are additional actions, namely the delivery at the beginning of the activity is more clarified so that children do not leave the location and do not play outside the agreed rules.

Cycle II was also carried out 3 times. The activity starts at 08.00 after the completion of the initial activities/religious habituation. The teacher explains in advance the sequence of activities to be carried out, namely: children are asked to enter the location or environment that has been selected, see and observe or look for something that is considered interesting in that environment, children are prohibited from leaving the location of environmental exploration activities. The same as cycle I, but the time for activities is accelerated to 30 minutes. If before 30 minutes the child has found and communicated with the teacher, it is permissible to end the exploration. When finished, the children were asked to gather on the mats that had been prepared and describe what they had seen and observed. Each child one by one in turn.

The observation stage in cycle II was carried out as in cycle I. The activities observed were the same, namely observing any object, classifying similar objects, solving problems if

there were problems with the observed object, and being able to communicate coherently to friends and teachers from what had been observed. . The results of the total score in cycle II were 49 or 81.67%. it means cycle II has increased from cycle I of 31.67%. In cycle II, the achievement of children's science skills is already at the stage of developing according to expectations or has reached indicators of success. The following is a diagram of the achievement of children's science skills:

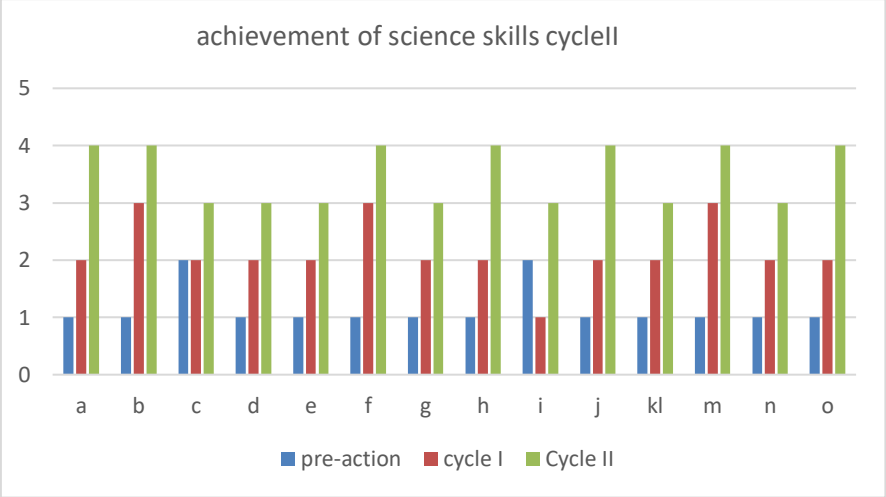

Diagram 3. Results of cycle II science skills

Based on diagram 3, it can be seen a comparison of the achievement scores of children's science skills. From these results it is clear that there is an increase in the achievement of science skills from pre-action, after cycle I and cycle II. From the results of the implementation of the second cycle, it can be concluded that the average achievement of the development of science skills is at the expected development stage. This is proven again, out of 15 children there are no more children who have not yet developed and are starting to develop, 7 children are developing as expected, and 8 children are developing very well. Having achieved indicators of success in cycle II, the researcher decided to stop this research in cycle II.

1.4 Discussion

Based on the results of classroom action research conducted by researchers during six meetings in two cycles that the science skills of children aged 5-6 years can be stimulated or increased through exploratory learning in an environmental approach around science. In cycle I there was an increase in science skills as much as 16.16% from pre-action. the teacher applies an exploratory science environmental approach to learning by giving freedom to children to explore environmental information freely according to the nature of children who have a high sense of curiosity. This is consistent with Suryani that appropriate learning methods for children are methods that use media and learning resources that are close to children, such as environmental eco-learning. In exploratory learning the environment involves students to find information about the material being studied (Suryani, 2020).

The empirical findings in cycle II obtained showed the achievement of science skills from 15 children, 8 children were at a very good development stage and 7 children were at the

expected development stage. The increase in science skills increased 48.34% from before the action. In the environmental approach, it will provoke students to learn to open children's minds from what is seen and observed so that it stimulates children's thinking to analyze and solve problems. In accordance with the opinion Aisyiyah which explains that an open-minded approach allows children to construct knowledge from the results of sensory experiences which are continued by their cognitive processes (Nisfa & Putri, 2022). From the findings in cycle II the children explained their findings, namely: finding similarities in the shape of stones, similarities in leaf shapes, similarities in leaf color, leaves as food for caterpillars and goats, differences in the way ants and snails walk because ants have legs. In line with constructivism learning theory where knowledge or understanding is composed of curiosity that arises from within. This is part of the science process skills. Agree with research Susanti which states that learning with children's direct experience fosters children's scientific aspects, in this case namely observing, classifying and communicating (Susanti, 2013)

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