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Science Learning Strategies through Mixing Colors in Improving Children's Cognitive

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Abstract*. Science learning for children aims to develop students' abilities, including their mind, heart, and body, as well as developing intellectual, emotional, and physical, as well as cognitive, effective, and psychomotor skills. Research method: Qualitative descriptive research pattern. Data sources: 1. Primary: group A2 children, Head of the institution, and RA PSM Kedungombo teacher; 2. Secondary: Documentation and archives. Data Collection Methods: interviews, observation, documentation. Data Analysis: Data analysis before and after in the field, reduction, display, and verification. The result showed that science learning strategies through color mixing activities can improve children's cognitive abilities. This can be seen from children's activeness when learning, children's ability to answer simple questions given by teachers at RA PSM Kedungombo evaluate children's learning outcomes by reviewing the activities that children have carried out during learning taking place.*

Keywords: *Science learning strategy, Color game, Early childhood Education*

1. INTRODUCTION

One aspect of child development that must be developed is the aspect of cognitive development. The cognitive stimulation method is part of a learning strategy to achieve the goal of optimizing children's cognitive function. According to Piaget, cognitive development takes place through four stages and we will all go through these four stages, including the sensorimotor stage, pre-operational stage, concrete operational stage, and formal operational stage(Wahyuningrum & Sa'diya, 2022).

Science learning for children aims to develop students as a whole, including their mind, heart and body, as well as developing intellectual, emotional and physical, as well as cognitive, affective and psychomotor. The aim of science learning is so that children are able to actively understand information about what is around the environment where they live(Zahrah, 2024). 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. Science activities cannot be separated from our daily lives, which function to provide experiences such as making observations to see how events occur in nature and in the environment where we live.

This is done so that children not only know the results but can also understand the process of the science activities they carry out. Science allows children to explore various objects, both animate and inanimate. Apart from that, it can also train children to use their five senses to recognize various symptoms of objects and events(Heryandini, 2023). To support this process, teachers must prepare appropriate strategies in learning. Early childhood children need

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learning strategies that can enable them to interact directly with the activities being carried out. In this case, teachers can use color mixing learning strategies to improve children's cognitive abilities (Umiarso et al., 2021).

Through color mixing science learning strategies, children can interact directly with the activities provided by the teacher and make experiments. In this way, it is hoped that children can understand the process of experimental activities of mixing colors, understand scientific concepts, and of course support children's cognitive abilities in skills science learning(Ketut et al., 2024). Apart from that, using color mixing science learning strategies also makes it easier for teachers because they can use media that are easily found in the surrounding environment, for example food coloring.

Theoretical

The substantive understanding of science is that science is seen as a process or product as well as an attitude. Efforts to instill character values in students can also be done through natural science (science) subjects. As quoted by Sofyan Sauri, natural science (science) contains many life values(Ramadhani & Nurhalimah, 2025). Moral values that can be developed in this case involve the values of honesty, curiosity and openness. The scientific process in this case is the process of studying and deriving meaning from life and the world around us.

Learning science for early childhood is how to understand science from a child's perspective. Because we look at the dimensions of science from the perspective of children, this will have implications for mistakes in determining the nature of science for young children which will have a significant impact on the development of science learning itself for them. Of course, this will directly or indirectly also have an impact on the process and products, namely the children themselves. Science or natural science can literally be referred to as the science of nature or the study of events that occur in nature. Science is a system about the universe obtained through collecting data with controlled observations and experiments. Science is the product or result of a process of scientific inquiry which is based on certain attitudes and values(Heryandini, 2023).

Introduction to science for kindergarten students is emphasized more than products (facts, concepts, theories, principles and laws). The scientific process is known as the scientific method, which generally includes: 1) Observation, 2) finding problems, 3) conducting experiments, 4) analyzing data and 5) drawing conclusions. For kindergarten/PAUD children, science process skills should be done simply while playing. Science activities allow children

to explore various objects, both living and non-living objects around them. Children can find symptoms of objects and symptoms of events from these objects(Nurkholisoh, 2019).

In science, students also practice using non-standard measuring instruments, such as spans. fathom, or foot. Next, students practice using standard measuring instruments. Students gradually practice using units that make it easier for students to think logically and rationally. In this way, science also develops students' intellectual abilities.

Science education for early childhood, children will play based on their freedom and curiosity which is considered an opportunity for children to build their knowledge about their world. Science for early childhood is based on inner curiosity and science activities not only invite children to make observations, but can also invite children to learn literacy, counting, art, music and vibrations.

2. METHOD

This research uses a qualitative approach, namely research that describes the behavior of certain people, events or places in detail and in depth. The design of this research is a qualitative descriptive study which aims to provide a detailed, complete and in-depth explanation of social phenomena related to the research. This research was carried out at RA PSM Kedungombo Nganjuk. The time allocation in the field is adjusted to the learning schedule for Kindergarten A (children aged 4-5 years) for the first semester of the 2022/2023 academic year in September-October 2022. The research subjects were 20 TK A students. Data collection techniques use interviews, observation and documentation. The respondents interviewed were teachers, while the subjects observed and documented were students during the learning process by role playing. Data analysis uses inductive analysis

3. RESULTS AND DISCUSSION

The discussion can be made in several sub-sections. Science learning strategies through color mixing are oriented towards the goal of achieving increased children's abilities, especially cognitive abilities, activities are flexible in their implementation, allow for adjustments based on the environmental situation and children's abilities, are sustainable with the applicable curriculum according to their age, are efficient in their application, easy tools and materials obtained. Implementing science learning strategies through color mixing activities, children can directly explore the activities that have been provided by the teacher, with this activity children will better understand what will be obtained from the color mixing process directly so

that this activity can achieve the teacher's goal of improving children's cognitive abilities in terms of know colors(Ketut et al., 2024).

Children's cognitive improvement after implementing science learning strategies through color mixing activities by directly trying the color mixing process, children experienced improvements in their thinking and memory(Wahyuningrum & Sa'diya, 2022). In order to know how far a child has improved, a learning evaluation is needed. Evaluation of children's learning can be seen from the child's activeness when studying and the child's ability to answer simple questions given by the teacher. At RA PSM Kedungombo evaluates children's learning outcomes by reviewing the activities that children have carried out during learning(Heryandini, 2023).

Ways to evaluate science learning in early childhood include: Observation, conversation, and giving assignments. Observation or observation is a way of collecting assessment data whose filling is based on direct observation of children's attitudes and behavior. Conversation is a training method carried out through conversations or interviews between children and teachers, both in the classroom and outside the classroom, and finally giving assignments, giving assignments is a method of assessment where the teacher can give it after seeing the child's work. By carrying out appropriate learning evaluations, you will find out the level of success of students in implementing science learning strategies through color mixing activities so that the goal of increasing children's cognitive abilities, such as their thinking and memory is achieved.

4. CONCLUSION

Science learning strategies through color mixing in improving children's cognitive abilities at RA PSM Kedungombo, it can be concluded as follows: The design of science learning strategies through color mixing activities is a systematic science learning plan or stages of learning activities used by RA PSM Kedungombo teachers in order to achieve The aim of learning is primarily cognitive improvement, especially the ability to recognize colors. The application of science learning strategies through color mixing activities to improve children's cognitive abilities carried out by teachers is: preparing lesson plans, preparing color mixing tools and materials, arranging "U"-shaped sitting positions, and evaluating student progress. Evaluation of science learning strategies through color mixing activities in improving children's cognitive abilities can be seen from learning planning, from the learning process to children's learning outcomes. Evaluation of children's learning can be seen from the children's activeness when studying and the children's ability to answer simple questions given by

teachers at RA PSM Kedungombo evaluating children's learning outcomes by reviewing the activities that children have carried out during the learning process.

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