

IMPLEMENTATION OF SCIENCE LEARNING THROUGH NATURAL MEDIA TO CHILDREN AGED 3-4 YEARS IN THE PLAY GROUP MARGO UTOMO PURWOREJO MARGOYOSO PATI ACADEMIC YEAR 2022/2023

Sumiyati¹, Shofiyati², Siti Mahmudah³
{atikpaudi@gmail.com¹, mbakgurupaud@gmail.com², mudahmudah30@gmail.com³}

Institut Pesantren Mathali'ul Falah Pati

Abstract. This study aims to determine the planning of science learning through natural media for children aged 3-4 years at KB Margo Utomo Purworejo Margoyoso Pati in the academic year 2022/2023. This type of research is descriptive qualitative research. Data collection methods used are interviews, observation and documentation. The validity of this research data uses data triangulation or by looking for data that supports the formulated research objectives. To analyze the research data, descriptive method is used. implemented at KB Margo utomo includes planning the division of children's classes, making learning plans and infrastructure. Science activities are carried out by introducing physical science, living creature science, earth and universe science, and through daily routine programs. The supporting factors are the teacher has the ability to teach and educate in accordance with the principles of child development and growth, the room and infrastructure are quite supportive, and internal and external factors.

Keywords: early childhood, science learning, natural media

INTRODUCTION

Early childhood is in a golden age throughout the age range of human development. Early childhood or children between the ages of 0-6 years are children who are in need of educational efforts to achieve optimization of all aspects of development, both physical and psychological development which includes intellectual, language, motoric and social-emotional development. Early childhood terminology is referred to as preschool children. At an early age, it determines the next stage of development. Developments that occur in early childhood develop very rapidly (Suyanto 2014). So it is appropriate that in this period the surrounding environment provides the right experience and stimulation. Nature as the child's closest environment provides a variety of experiences that can be developed by the people around the child. Nature is things that are related to human beings, animals and plants. On the other hand, children learn best when their physical needs are met and they feel psychologically comfortable. At an early age, children begin to build their own knowledge, learn to interact socially with adults and friends (Styowati and Utami 2022). Children learn through play, their

interest and curiosity motivate them to learn while playing. Playing can meet the needs of children to be actively involved with the environment, to play and work in producing a work, as well as to fulfill other cognitive development tasks (Direktorat PAUD Kemdikbud 2020). During play children receive new experiences, manipulate materials and tools, interact with other people, and begin to experience their world.

Education is very important for all children to get because education is one of the assets that must be owned by every individual to achieve success in a child's life. Early childhood education is the most basic education occupying a very strategic position in the development of human resources. This period is a conducive period for the development of various physiological, cognitive, language, socio-emotional and spiritual abilities of children. By playing, children's abilities will develop (Poerwati, Cahaya, and Suryaningsih 2021). Talking about the quality of education in Indonesia, it cannot be denied that the condition of education in Indonesia is very apprehensive in terms of equal distribution of the quality of education received by students. Especially in suburban areas, there are still many schools that do not get enough attention, both for teaching staff and for infrastructure. other supporters (Styowati and Utami 2022). One of the supporters of learning factors is external factors, namely influences originating from the surrounding environment and designs that are carried out deliberately by educators, besides that learning media and or learning aids also have an important role to support the achievement of educational goals (Abo and Affiifi 2014).

The Play Group (KB) Margo Utomo, Purworejo Village, Margoyoso District, Pati Regency has its own uniqueness in developing its learning media. This institution uses some assistance from both the city and village governments to develop school buildings and infrastructure. Unlike other schools, researchers are interested in conducting research at KB Margo Utomo in the use of learning media. For the past two years KB Margo Utomo has honed the ability of its teachers to always be creative and innovate in developing learning media. Natural media is the main material used by KB Margo Utomo for learning, such as the use of wood, tree branches, stones, gravel, soil, water, dry leaves. The teachers designed these natural materials to be used as teaching aids. The ability of these teachers is honed by participating in several trainings that use natural materials as the basis. The growing ability of teachers has an effect on the implementation of learning at KB Margo Utomo. Students are invited to hone their potential using natural materials, such as using rocks for counting games, sounds, and also in shaping animals, using leaves to paint and make hats, dolls and also for printing. Learning is also not monotonous when it is done indoors, but the teacher also invites children to play outside their room/home. in a new adaptation period like this, KB Margo Utomo also invites teachers to make learning videos with media that are easy to get at home. so children and parents stay at home and don't go anywhere.

Departing from the above background, the Play Group (KB) Margo Utomo Purworejo Margoyoso Pati, organizes education for early childhood from the age of 3-4 years. KB Margo Utomo opens educational services from 07.30-10.00 WIB on Monday-Saturday. The learning used uses the center model while still prioritizing the principle of child development playing while learning. One of the center classes opened by KB Margo Utomo is a science center. In the science center, learning materials related to nature are provided, recognizing various phenomena of objects and phenomena. Children are trained to see, touch, smell, feel, hear, and taste. Based on the explanation above, the researcher intends to conduct research on the implementation of science learning through natural media at KB Margo Utomo, Purworejo Village, Margoyoso District, Pati Regency.

RESEARCH METHODS

This study uses descriptive research procedures, in which researchers describe science learning at KB Margo Utomo Purworejo Margoyoso Pati. Descriptive research is a research method based on the philosophy of postpositivism, used to research on natural object conditions, where the researcher is the key instrument, sampling of data sources is carried out purposively, collection techniques are triangulation, data analysis is inductive or qualitative, and research results Qualitative emphasizes meaning rather than generalization (Albi Anggito dan Johan Setiawan, n.d.). Descriptive research is generally carried out with the aim of systematically describing the facts in the field and the characteristics of the objects and subjects studied appropriately. Collecting data in this study using observation techniques, interviews, documentation and data analysis (Sugiyono 2013). In this participatory observation, the researcher is involved with the daily activities of the person being observed or used as a source of research data (Djam'an Satori dan Aan Komariah 2021). The research object in the qualitative research observed according to Spradley is called the social situation, which consists of three components, namely the place in KB Margo Utomo, Purworejo Village, Margoyoso District, Pati Regency, actors (actors) consist of heads of institutions, students, children and teachers. , and activities (activities or activities) include learning activities and planning. While interviews to obtain objective data needed by researchers about the background of research objects, real conditions in the field directly include learning plans, materials, strategies, learning media, parties involved in learning as well as supporting and inhibiting factors for implementing science learning through natural media at KB Margo Utomo Purworejo Margoyoso. Documentation is used to complement the data obtained through interviews and observations. The use of this method is intended to obtain data about, location, teacher data, facilities and infrastructure, children's data and others (Aziza 2017).

RESULTS AND DISCUSSION

The results of research conducted by researchers regarding the implementation of science learning through natural media in KB Margo Utomo, The foundation when playing begins with introducing learning to children, specifically in science learning included in the category of children's cognitive development Observations of science learning through children's natural material media KB Margo Utomo is explained as follows:

1. Physical science
done by observing changes in the properties of water from liquid to solid/ice; then observed the change in the mixing of water and liquid agar into a solid; watch the ball roll off the long wooden-table slide; make fruit soup and observe the shape of the fruit by distinguishing taste, smell, shape and texture.
2. Science of living things.
Identifying the types and forms of their own and friends' limbs; make a model of the human body by tracing the shape of the body on paper; observe the life cycle of green bean plants and butterfly metamorphosis; caring for fish in artificial aquariums, feeding pets.
3. Earth and universe science
Volcano experiment; the cloud experiment could be rain; paper experiment caught fire; attempted flooding; the practice of disposing of trash in its place

Furthermore, the footing activities after playing contain the teacher's review of the science activities that have been carried out. After completing the learning activities, the teacher leads the children to read the prayer before playing. During recess children play in the

school environment both outside the classroom and inside the classroom. finished playing when the bell is rung the child returns to the classroom to eat. before eating the child reads the prayer before eating the snack and after eating the snack the child reads the prayer after eating, after eating the plate is placed in the basin that has been provided the child is also asked to clean up if any food is spilled. Entering the final activity, the teacher invites the children to sing several songs, this is to revive the child's enthusiasm. After that the teacher re-explains the conclusions of the learning outcomes that are given to children. the teacher also asks and answers with the child about the activities that have been carried out, here the teacher sees whether the child really pays attention to the learning given by the teacher, not forgetting that the teacher gives rewards to the child for doing today's assignment well. After that the teacher led the prayer home (Sholeha 2019).

Based on the description above, it can be concluded that the results of the study explain that science learning activities through natural material media at KB Margo Utomo are carried out in three categories, namely physical science, living science, earth and universe science. KB Margo Utomo carries out science learning through natural material media containing school cultural transformation and through habituation or habituation through activities, including the following:

1. Routine activities

Daily routine activities in science learning that are carried out by KB Margo Utomo students every day are maintaining the cleanliness of the classroom and KB Margo Utomo yard. This is in line with the theory of science learning that the teacher's efforts to form the desired behavior by providing an environment, so that the relationship between the stimulus (environment) and the behavior of the learner (behavioristic). Based on observations made, this cleaning activity was carried out before the implementation of learning activities every morning, namely at 08.00-08.15 WIB with the assistance of the class teacher. When children carry out environmental cleaning activities, children learn about protecting nature, caring for their environment, and discovering new things that they have never had before. This cleaning activity is carried out to train students to live cleanly, learn about nature and its preservation and be disciplined because students are required to participate in cleaning the classroom without exception. After the teacher gives the class cleaning activity the teacher also makes observations and checks on students and class conditions. checking is done by looking at the condition of the class whether it is clean of trash or not. If it is not clean, the students are helped by the teacher to clean it again until it is clean.

2. Waste processing activities

As explained above, science learning activities apart from greening the Green Environment also include waste management activities. Garbage is a problem faced by all countries in the world, not only developing countries, but also developed countries. On average, cities in Indonesia produce tens of tons of waste every day. Garbage is only transported by garbage trucks and dumped or just piled up in the space provided without being processed again. From day to day the garbage will pile up and disturb the people around it. It is this that encourages KB Margo Utomo to process waste into more useful items, both organic and inorganic waste.

Based on observations and interviews, this waste processing activity is to clean up waste, especially leaf waste. This activity was carried out to deal with leaf litter, namely cleaning garbage in the yard/motorcycle parking area and also a mini forest. Organic waste that has been collected by students will be accommodated in a waste bank which will then be used as compost. Meanwhile, inorganic waste from plastic and mineral water bottles will be reused by KB Margo Utomo students to make crafts.

Learning science through natural materials this activity is more emphasized on daily habits. To reduce inorganic waste or plastic waste, KB Margo Utomo students are required to bring their own places to eat and drink and not buy packaged food, this is due to cultivating healthy eating and reducing plastic waste from food and beverage packaging. Trash cans are very important for environmental maintenance so that they are free from waste, both organic and inorganic waste. There needs to be a difference in trash cans according to the type of waste itself so that it is easier to sort and reprocess. As in KB Margo Utomo they use different bins for organic and inorganic waste types.

The Margo Utomo Play Group, which is located in Purworejo Village, Margoyoso District, Pati Regency, has a vision of "Noble Virtue, Rich in Achievement in God's Ridho". The Margo Utomo Playgroup plans a learning curriculum with four things, namely the division of classrooms, making lesson plans, class schedules, and infrastructure. The descriptions of these four things are as follows (Suyanto 2014):

1. Division of Classrooms

The division of classrooms is carried out by looking at the number of students enrolled in the class. The division of classrooms is carried out under two names, namely classrooms according to age groups, and classrooms for centers. This is done because of limited land to create new space. The description of these four things is as follows:

Table 1. Class

division Distribution of classrooms KB Margo Utomo	
Class	Centers
Age group 2-3 years	Preparatory centers, arts centers, religious centers
Age groups 3-4 years	Natural materials/science centers, role playing centers, cooking centers

1. Making Learning Plans

Basically, children learn through fun games, playing experiences using natural materials, objects or with other children, and adult attention helps children develop physically, emotionally, cognitively and socially. So that the development of the potential of children can be maximized. KB Margo Utomo compiled a curriculum, namely incorporating themes into lesson planning in the initial preparation for the implementation of learning. Learning themes are then developed in annual program planning (prota), semester programs (promes), weekly learning implementation plans (RPPM), and daily learning implementation plans (RPPH). The teachers make a daily learning implementation plan one week before the learning activities are carried out. This is done so that the material delivered is in accordance with the needs of children and indicators can be easily controlled.

Science learning planning through natural material media consists of (Choiriyah et al. 2022):

- 1) Arrangement Structuring the playing environment: the teacher prepares the things needed to carry out science learning activities through the media of natural materials
- 2) Steps before playing: contains physical activities, greetings, prayers, absences, apperception, discussion, introduction to playing activities and agreement on rules.
- 3) Footing while playing: the teacher provides motivation, evaluates, documents and acts as a facilitator. Children playing with prepared toys.
- 4) Steps after playing: recalling or discussing again and evaluating the learning activities that have been carried out for one day with conversations and questions and answers.
- 5) Evaluation/assessment: The teacher is guided by the standard level of achievement of early childhood development, the teacher carries out learning steps.

The steps taken in the process of preparing for science learning are selecting subjects according to themes and indicators that are appropriate to science material, preparing lesson plans based on indicators that have been made in accordance with children's science abilities, and preparing media to be used in learning. The learning implementation plan is as follows

- 1) Physical science
Making fruit soup by observing the change in the properties of water from liquid to solid, classifying by grouping fruit according to texture and taste, measuring the size of the fruit, predicting what happens when water becomes slightly different, experimenting with making the liquid water become ice solid experiment stone, and told the experimental results that occurred with the change in the properties of liquid to solid.
Make a rolling ball experiment by observing the direction of the ball rolling, grouping the balls according to color, measuring the big and small balls, predicting what will happen if the ball rolls off the table, slide and long wood, making the ball rolling experiment from the table, slide and long wood, and telling the story rolling ball experiment.
- 2) The science of living things
Recognizes body parts by observing the identity of the types of shapes and colors of body parts, grouping friends based on height, measuring oneself and friends' heights, observing how friends walk and jump over obstacles, making human body models, telling stories about body parts.
Caring for fish by observing fish in aquariums and ponds, grouping fish by color, making toy fish sizes, estimating what will happen if fish live in cloudy and clear water, feeding fish and having opinions about fish life.
- 3) Science of the earth and the universe
Make a volcano eruption experiment by observing simple experiments, classifying rocks by size, measuring miniature mountains, predicting eruptions with simple experiments, conducting simple experiments with artificial volcanoes, and telling the process of the results of volcanic eruption experiments.
Experiment with flooding by observing smooth flowing and clogged water in ditches, filling up water bottles, predicting what would happen if the river

flowed smoothly, doing simple running and blocking experiments, and talking about flood events.

2. Class schedule

The class schedule is divided into core classes and center classes, center classes are opened once a week for each type. With the exception of cooking center classes and play center classes which are opened every 2 weeks

3. Planning for the needs of facilities and infrastructure

The Margo Utomo Play Group Building is designed with a distinctive feel with the general character of early childhood. Since entering the building, the children have been impressed by the calm nuance that creates peace. The green color which is the hallmark of KB Margo Utomo gives a cool and pleasant impression, and makes children feel comfortable in participating in the planned learning process. The layout is also designed in such a way as to make it easy for children to express their creativity. Also get used to study orderly, regular, and disciplined. This spatial pattern will help ease the teacher's task, so that the teacher is more effective in teaching.

Learning facilities and infrastructure such as educational games can be mapped. Educational games outside the classroom are designed for the gross motor development of children. Several types of outdoor games available at KB Margo Utomo include: skateboards, used car tires, teeter-totter, swings, and mini gardens. In addition, KB Margo Utomo also has educational game tools in classes or areas that have been opened. These indoor game tools are designed according to standards, meaning that each APE is adapted to a child's development. The results of the observations of researchers, some of these game tools are factory products and some are the work of educators by utilizing waste or used goods that are modified in such a way that they become useful game tools.

Based on research conducted by researchers, the research will describe the discussion of the data that has been obtained. The lesson plan at KB Margo Utomo is compiled based on the Weekly Learning Implementation Plan which has been prepared by the teacher's first theme. It is from the Weekly Learning Implementation Plan that the teacher compiles a Daily Learning Implementation Plan every day. The Daily Learning Implementation Plan that will be conveyed consists of playing environment steps, steps before playing, steps when playing, and steps after playing. Children's learning time starts at 08.00-10.30 every day except Friday and Saturday. In the initial activity, the teacher first prepared all of Margo Utomo's KB children in the school yard. After the children read the pledge, then the children enter their respective classes. In the classroom the teacher invites children to talk about the sub-themes that will be taught to children, the conversation activities are accompanied by singing and clapping. After the teacher feels that the child has shown good emotions, then the teacher enters the core learning activities.

CONCLUSION

Based on the research data that the author has collected and analyzed the data that has been presented, it can be concluded that: Science learning planning through natural media is carried out through several things, namely class division, making learning plans including a) developing themes, b) making annual programs c) preparation of semester programs or promissory notes, d) preparation of weekly learning implementation plans or RPPM, and e) preparation of daily learning implementation plans or RPPH, distribution of schedules, and provision of infrastructure. Learning science through natural media is carried out by

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introducing physical science, living things, earth science and the universe. And through the program of daily routine activities.

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