Sub-Focus Analysis of Naturalist Intelligence In Early Children

Murtiafh1*, Elindra Yetti1 and Ade Dwi Utami1

1Faculty of Education, Doctoral Program in Early Childhood Education, State University Jakarta, Indonesia1
*murtafiah1609@gmail.com

Abstract

The world of early childhood plays, and when children play in nature, it is actually a very valuable practice for children to facilitate their growing bond with nature. Early childhood is a sensitive period that can be a source of inspiration when children play in nature. Learning about nature is part of naturalist intelligence which can generate inspiration and children's exploration of nature. This qualitative research aims to explore the sub-focus of recognizing, differentiating, and classifying as well as expressing naturalist intelligence in early childhood. The participants involved in this study were two people consisting of one teacher and one PAUD head in a city in Indonesia. Interviews and documentation formed the basis of the research method, and data were analyzed using taxonomic analysis, with the results showing that all the children studied had a sub-focus on recognizing, differentiating, and classifying, as well as expressing about plants, animals, and natural objects around them (naturalist intelligence). However, this article only discusses the sub-focus on getting to know plants, animals, and natural objects around children. This research reveals that naturalist intelligence in early childhood can be developed through school support

Key words: Early Childhood, Naturalist Intelligence, Qualitative

Introduction

Gardner, in 1983 at Harvard University, introduced the theory of multiple intelligences and divided them into verbal intelligence (word smart), kinesthetic intelligence (body smart), mathematical intelligence logics (number smart), partial/visual intelligence (art design/ space smart), interpersonal intelligence (people smart), intrapersonal intelligence (self smart), musical intelligence (music smart), then adding naturalist intelligence (nature smart), and existence intelligence (spirituality smart). Naturalist intelligence, according to Gardner, is the intelligence to recognize, distinguish, classify, and express what he sees and feels in his surroundings (Gardner, 1994). According to the opinion above, there are nine plural bits of intelligence in children, one of which is naturalist intelligence. Naturalist intelligence is the ability to recognize, distinguish, classify, and express what one sees and feels in the surrounding environment.

The pleasure of children playing with the natural surroundings, according to the Journal of Science Education and Technology Eshach and Fried wrote, is that naturally, children will enjoy observing and thinking about the environment around them. The connection between nature, intellectuality, science, and play that is, playing is the...
centre of development that connects objects, understanding, and imagination of children (Eshach & Fried, 2005). Play is a bridge between a child’s imagination and concrete objects and their meanings.

According to Klaar and Ohman, the meaning of outdoor play for children in Sweden is related to the outdoor-oriented and democratic tradition of preschool education. The result is the need to regulate playing situations and good learning processes about natural phenomena so that they can maintain the outdoor-oriented and democratic educational tradition in Sweden (Klaar, Susanne; Öhman, 2014). The description above concludes that it is necessary to regulate playing situations and a good learning process to create an outdoor learning-oriented and democratic education.

Rocmah, in the Pedagogic Journal, from the results of data analysis, it can be concluded that naturalist intelligence can be increased through optimizing messy play in learning. This activity teaches children real natural learning. Children learn by looking at their surroundings and then channelling it into actual results in the classroom. As for the form of messy play activities that can improve children’s naturalist intelligence varied, including collage, drawing, and playdough (Rocmah & Sidoarjo, 2016). According to the research above, naturalist intelligence can be improved by playing messy play.

Kiewra and Veselack researched that playing outdoors in early childhood can support children’s creativity and imagination as well as problem-solving skills, ingenuity, and construction. Our planet needs people who can solve problems, adapt to situations, and communicate effectively (Kiewra & Veselack, 2016). Therefore creative experiences in early childhood can be done by playing in natural open classrooms.

Six activities increase naturalist intelligence according to Weinhardt: (1) Playing space, playing imaginatively and improvising using elements from the environment; (2) Demonstrate sensory experiences, such as "close your eyes; what do you hear? What does it smell like?" what is most like? What can you see there? what do you notice about...? ”; (3) short picnic; (4) Nature journal, writing personal reflections while sitting beside a waterfall, about birds, drawing flora and fauna around you; (5) Planting grow; (6) Nature art, while playing outside collect interesting things like feathers, pine cones, twigs, pebbles and place them in a bag. When you get home, use these materials in art projects (Weinhardt, 2013). Naturalist intelligence is enhanced by outdoor play.

The research questions identified for this study were:

a. How is the development of the sub-focus on recognizing naturalist intelligence in early childhood?

b. How does the school support the ability to recognize sub-focus on naturalist intelligence in early childhood?

**Method**

This research is qualitative research to find out how to develop the sub-focus of knowing naturalist intelligence in early childhood. Also, to find out how teachers support the sub-focus of knowing to develop early childhood naturalist intelligence. Researchers consist of lecturers in education, counselling, and early childhood education. The research was conducted for three months and involved PAUD teachers. Before being interviewed, all participants filled out a consent form stating their willingness to become research participants. After being interviewed, all participants filled out a member check to ensure the validity of the data.

**Participant**

The participants were two PAUD heads and teachers in a city in Indonesia. Participants gave consent before data collection.

**Data Collection**

Data collection was carried out using a semi-structured interview instrument which was conducted with respondents one by one for about 60 minutes. A grid or interview guide was used, based on the theory of naturalist intelligence consisting of a sub-focus on knowing plants. Some teachers agreed to be interviewed face-to-face. Interviews were conducted at school and at home. Data collection was also carried out with documentation in the form of pictures and sound recordings, and video interviews.

**Data Analysis**

Data analysis begins with making transcripts of interview results, followed by coding to find the focus and sub-focus factors of ability from naturalist intelligence. Data analysis in this study used taxonomic analysis
Results and Discussion

Sub-Focus Analysis of Knowing Plants and Animals in Early Intelligence Childhood Naturalists

Children are small human beings who have potential that must be developed. Children have different characteristics from adults. According to Suyadi and Ulfah, early childhood is in the period of laying the basic foundation for growth and development. What children receive in the form of food and drink, the stimulus will contribute greatly to their future (Suyadi & Ulfah, 2017). So it is appropriate if the early age is said to be the golden age, where children have the potential to learn many things quickly. At this time, the child is experiencing a sensitive period where the child is sensitive to receiving various stimuli. The sensitive period is the period of maturation of physical and psychological functions that are ready to respond to the stimulation provided by the environment around the child.

Learning that is appropriate to the development and educational needs of early childhood is essentially play; according to Cutter, "Children learn naturally et al. through play, with the teacher facilitating opportunities for play in the environment" (Cutter-Mackenzie et al., 2014). It is said that from the perspective of early childhood, learning is playing naturally with the teacher as a facilitator and giving children the opportunity to play with their environment. For children, playing is an important need; all activities in play are a child's learning process. Therefore parents and teachers must be good facilitators.

When playing for children in the surrounding environment is very enjoyable learning. According to Baum, Viens, and Slatin, "Naturalist intelligence designates the human ability to discriminate among living things (plants, animals) as well as sensitivity to other features of the natural world (clouds, rock configurations)" (Baum, Susan, Julie Viens, 2005). Naturalist intelligence is the intelligence to distinguish plants and animals as well as objects around them, such as clouds, rocks, and so on. So basically, naturalist intelligence is the ability to recognize plants, animals, and objects around them.

Added by Eberle, playing is an effort to develop children's mental, physical, and social abilities. We can plan to learn through play, such as children's naturalist intelligence can be exploited by giving children the opportunity to scramble over piles of leaves, collect rocks, juice fruit, pay attention to the lives of ants, and so on (Eberle, 2011). It would be nice if the teacher gave children the opportunity to play with the natural surroundings because this would further strengthen the child's love for the environment around them.

Naturalist intelligence, according to (Gardner, 1983; Hoerr, 2010), is the ability to recognize and observe the surrounding environment. Meanwhile, naturalist intelligence, according to (Gunawan, 2012), is the intelligence of children to observe, recognize, interact, or care about plants or animals, being able to classify plants or animals according to their characteristics.

Based on interviews with PAUD heads in one of the cities in Indonesia, it is said that naturalist intelligence can still be taught in early childhood more diversely.

"During a pandemic, it is rather difficult to convey material to our students, especially for early childhood whose learning concentration range is still short. All students and schools must adapt to online learning. Various models of online learning efforts are sought, of course, so that more optimal learning results are obtained. At our place, online learning is pursued through videos made by teachers or uploaded from YouTube and then shared with parent groups to be conveyed to children with parental guidance. Sometimes learning is through Zoom, WA group video calls, and voice notes. When teachers meet children via Zoom or video calls, we usually deliver a bit of material according to the theme followed by discussion."

The sub-focus of naturalist intelligence in PAUD is in the form of getting to know animals and plants. It is conveyed on the theme of animals and plants. The teacher usually asks students to name the animals and plants they know or take pictures of animals or plants around the house.

"From the existing documentation, children already know several pets, such as cats, rabbits, hamsters, fish, and others. The children are also familiar with the plants around their homes, such as flower trees, aloe vera trees, katuk, papaya, guava, and others."

Here are some photos that the students collected:

Figure Sub focus on knowing plants and animals on naturalist intelligence. After the pandemic, teachers can more optimally introduce a variety of plants, animals, and the environment around children.

After this pandemic, we (teachers) and the children were very happy because we could immediately play in the garden around the school complex. The children observed how the outline of a plant structure, which consists of leaves, stems, and roots. There are also equipped with flowers and fruit. The children observed and began to recognize how the leaves varied in colour. Mostly green, but the green varies. There are even colours, brown, yellow, red, and orange.

On the occasion of observing these plants, this is the right time to introduce the functions of plants to children.
We (teachers) introduce to children that plants and animals are living things just like humans. Roots function to absorb water and nutrients for plants. Leaves for plants are a kitchen where they make food, assisted by sunlight and air. The stem serves to erect the plant and distribute food to all members of the plant.

In addition, the teacher also has wide opportunities to introduce animals around children, such as pets: cats, chickens, birds, ducks, and fish. Children can make observations and get to know these pets firsthand because they are around them. From the explanation above, it can be explained that stimulation by introducing children to the natural environment around them can stimulate children’s intelligence. This is Morrison’s opinion which explains that the fastest intellectual development occurs before the age of five. Children are not born with a fixed intelligence, and children who are raised in an environment that does not stimulate their intelligence may be left behind by children who are raised in a more favourable environment (Morrison, 2012). This means that the golden period of child development is under the age of five, and the child’s intelligence continues to develop according to the stimulus given.

According to Klaar and Ohman, the meaning of outdoor play for children is related to the outdoor-oriented and democratic tradition of preschool education. The result is the need for the proper regulation of play situations and learning processes about natural phenomena so that they can introduce the environment to children (Klaar, Susanne; Öhman, 2014). The description above concludes that it is necessary to regulate playing situations and a good learning process to create outdoor learning-oriented education and instil from an early age a love for the environment.

In the discussion above, the development of the sub-focus on recognizing naturalist intelligence in early childhood can be introduced through direct learning to the environment around the child. The sub-focus on getting to know the environment in a mini style is important because by getting to know children, they will understand, and then they are expected to be able to love and care for the surrounding environment. The pleasure of children playing with the natural surroundings, according to the Journal of Science Education and Technology Eshach and Fried wrote, is that naturally, children will enjoy observing and thinking about the environment around them. The connection between nature, intellectuality, science, and play, that is, playing is the centre of development that connects objects, understanding, and imagination of children (Eshach & Fried, 2005). Play is a bridge between a child’s imagination and concrete objects and their meanings.

Good support from the school in the form of an introduction and observation of the environment accompanied by an explanation of its functions and uses will strengthen the understanding child about the environment. There are many things that children may not understand in detail. But they will record and store it well in their memory. Because childhood experiences will have an impact after adulthood (Naylor, 2016). According to this research, it turns out that stories from childhood affect the souls of adults in their professional roles.
Conclusion

The research concluded that the sub-focus: recognizing, differentiating, and classifying, as well as revealing to develop naturalist intelligence in early childhood 0–6 years was obtained from school support. The findings in this study are school support and parental support, as well as school communication with parents that goes well, will be able to develop children's naturalist intelligence.

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References


