

UTILIZATION OF MEDIA NATURAL MATERIAL TO DEVELOP NATURALIS INTELLIGENCE OF CHILDREN AGE 5-6 YEARS

Uswatun Khasanah
Nahdlatul Ulama Lampung University
Email: uswah.ais@gmail.com

Abstract

This study aims to determine the process of developing naturalist intelligence by utilizing the media of natural materials in children aged 5-6 years. The method used in this study uses John Elliot's action research method which has six steps: 1) identification of themes, 2) reconnaissance or review, 3) planning, 4) action, 5) observation or data collection, and 6) reflection. The data collected comes from field notes, interviews, documentation, and observation or observation. Data analysis using qualitative and quantitative descriptions. The results of this study indicate that the medium of natural materials can develop naturalist intelligence in children aged 5-6 years. Utilization of natural material media to develop naturalist intelligence includes children's knowledge of the natural environment, sensitivity to natural phenomena, environmental sustainability, caring for pets and plants. The naturalist intelligence of children aged 5-6 years develops well and increases through the medium of natural materials used.

Keyword : *Naturalist Intelligence, Natural Material Media*

Introduction

One of the important characteristics of the individual that teachers need to understand as educators is individual talents and intelligence. Teachers who do not understand the intelligence of their students will have difficulty in facilitating the process of developing the potential of the desired individual. Generalization of the ability and potential of individuals to give a negative impact that learners do not have the opportunity to develop optimally the potential that exists in him. As a result of the wrong handling as is done by the current school system we have lost the brightest talents optimally. Every individual has a unique potential that must be developed into competence.

Howard Gardner (2008: 85) a psychologist from Harvard University suggests eight types of intelligence that include language,

mathematical, logical, spatial, musical, kinesthetic body, interpersonal, intrapersonal, and naturalist. The strategy of learning multiple intelligences is aimed at all potential children can develop. One of the tendencies of children is to have naturalist intelligence. This intelligence relates to all that we know in the realm of the world. This intelligence is very sensitive to be stimulated with all aspects of nature, including plants, animals, weather and physical and earth images. The naturalist intelligence also includes the sensitivity to love the earth, as well as the desire to preserve it and protect natural resources, demonstrate high ecological awareness, understand the topics of the living system, record natural phenomena such as animals, plants and similar things, and etc.

Nature is a very valuable learning resource for children to be able

to stimulate kerativitasnya. Introduction of children to the natural surroundings with the form of diversity of living things that exist on this earth will be able to form a creative power and a deep love of nature. The most important thing, according to Fachruddin M. Mangunwijaya, (2006: 245) if the child grows up, it is expected to have a high awareness of the importance of a harmonious nature and refer to the ecosystem balance. This can be done by taking out the garbage in its place, maintaining the cleanliness of our surroundings, caring for and presserving the plants that live around us and loving animals and not killing animals to keep us awake from extinction especially rare animals.

In children aged 5-6 years pertained to pre-concrete initial operational preconceptual stage. At this stage the child has shown cognitive activity in the face of various things outside of himself. Activity thinks not yet have an organized system but the child is able to understand the reality of the environment by using signs and symbols.

The ability and care of children on the sustainability of natural resources sources need to be trained and familiarized from early on through activities using natural material media. Therefore, the natural ingredients are prepared as a media for children to play activities while learning to use natural materials both dry and wet to assist the process of development of faith and piety, language, thinking power, creativity, skills and body, and to improve the child's naturalist intelligence.

In this paper will be discussed on how to cultivate the naturalist

intelligence of children aged 5-6 years by utilizing the media of natural materials that exist around the school environment. Utilization of natural materials as a means and infrastructure in learning to stimulate the development of children in cultivating the talent and interest of naturalist intelligence.

Theory

A. Understanding Natural Intelligence

Robert E. Slavin (2011: 159) states that intelligence is as a common talent for learning or the ability to learn and use knowledge or skills. Basically every human being has talents that need to be recognized and developed. Munandar reveals that ability is the power to perform an action as a result of innate or exercise. The ability of a person can be seen from the general talent for learning, and can be measured based on the ability to deal with the problem of absorption and obtain the solution of the problem itself.

Howard Gardner (2013: 33) proposes the naturalist intelligence as follows: "The statement can be interpreted that," A person who possesses naturalistic intelligence is an individual who can recognize the flora and fauna along with other things that exist in nature and use its ability productively."

Furthermore, Thomas Armstrong (2009: 7) argues that naturalistic intelligence is: "expertise in the recognition and classification of the numeros species-the flora and fauna of an individual's environment. This also includes sensitivity to other natural phenomena (e.g., cloud formation, mountains, etc) and, in the case of thouse growing up in the urban environment, the capacity to

discriminate among other objects such as cars, snakes, and CD covers. It can be interpreted that the expertise in the classification and introduction of many species, plants and fauna in the individual environment. Such expertise includes sensitivity to other natural phenomena (cloud formations, mountains, etc.) and in today's case such as in urban environments, an urban environment, including the ability to distinguish between inanimate objects such as cars, , and CD covers.

Reeta Sonawat and Purvi Gogri (2008: 85) suggest that naturalistic intelligence belongs to those who enjoy the earth's physical environment, are good at distinguishing, classifying, and using features of the environment, they are nature lovers ". Someone who has a natural intelligence enjoys the physical environment of the earth, differentiates, classifies and utilizes what is in the environment well, they are nature lovers Bowles suggests that the core component of naturalistic intelligence is as follows:

1. Sensitivity to nature (flora, fauna, cloud formation, mountains);
2. Expertise in distinguishing members of a species;
3. Recognize the existence of other species and map the relationships between species, both formally and informally;
4. Maintaining nature and even becoming part of nature itself;
5. Visit places where animals are mostly populated;
6. Able to know the relationship between environment and nature.

According to Carvin in his book Muhammad Yaumi (2013) that naturalistic intelligence is a person's ability to identify and classify

patterns of nature (nature). People who have strong naturalistic intelligence have an interest in the outside world or animal world, and this interest begins to emerge from an early age.

From some of the opinions of experts it can be concluded that natulistic intelligence is the ability to distinguish, classify, recognize plant and animal species, and sensitivity to the symptoms that occur in nature that implies the love of nature by preserving and preserving it including the process and utilize nature well.

B. Understanding Natural Materials

Natural materials are materials or materials that exist in the surroundings. Whittaker (2004: 46) says that natural materials are those that occur in nature and are typically, found in the ground as part of animals or plant. Natural materials are found in the ground and found in ground or parts of animals or plants. Natural materials are easy to find around the child's environment.

Isbel (1995: 97) expresses his opinion on natural materials for early childhood learning ie, Young children are curious about the things that are in their world. Encourage questioning in the nature center where children learn about materials they have seen or exploring new capture their interest. Bring a nature item that is of interest to young children to group time. This idea allows children to examine things closely, compare and contrast, and also draw conclusions about their activity". This can mean that early childhood has a curiosity about things that exist in his world and then encourage children to ask about materials that have been seen or

examined in accordance with the interest.

Furthermore, Pamela (2007: 391) reveals early childhood learning using nature is as follows: "Young learners are naturally curious, willing to explore and excited to share what they have discovered. Many young children have extensive background knowledge about topics that are interested in them as nature and animals". This statement means that the early child has a natural curiosity, the desire to research and happy to share about what he found. The child has a broad background of knowledge about topics that interest him like nature and animals.

Jahn Lighthart in Musbikin said that the teaching materials that exist in the environment around the child are memorable, seen and practiced so that the teaching activities become practically functional. All materials that exist in the environment around the child can be used to attract the attention of children. Kohen in Kostelnik (2007: 119) says that, "Many cognitive and aesthetic activities may be developed for use in naturalized settings". Children developed a sense of respect and responsibility for the natural environment, which also contributed to their quality of life ". The statement can be interpreted that cognitive and aesthetic activities can be developed by naturalizing activities. The child will instill a sense of respect and responsibility for the natural environment that contributes to his life.

From the description above can be concluded that the natural material is a tool and materials and objects that exist in the natural environment that includes natural biotic and abiotic directly available

in nature that can be used as a source of learning or learning media for early childhood.

C. Steps of utilization of natural materials

According Nana Sudjana, (2010: 215) the steps that must be taken in using natural materials as media are as follows:

- 1) preparatory steps, determining how to learn when the media are shown and the rules of the game.
- 2) Implementation activities steps, children play with natural materials and guided by the teacher.
- 3) follow-up, ie the teacher re-discuss the natural materials used and listen to the child's opinion about the learning process.

In addition Jackman (2009: 179) write down the steps to utilize the media of natural materials, namely:

1. Name of activity and brief description,
2. Purposel / objectives of activity,
3. Space and materials needed, procedur of activites, activity steps in each of the activities that are inclusive:
 - Introducing to children about natural materials and activities to be undertaken
 - Describes the materials used and the utilization process.
 - Describe the rules of implementation of activities with respect to the materials provided.
 - Activity is created by teachers.
 - Observation of the activity process.
4. Guidance, anticipating children who need guidance, direction,

during the process of utilizing natural materials.

5. Evaluation and Follow-Up, evaluate the use of materials in the activity.

D. The Process of Developing Naturalist Intelligence in Children Using Natural Material Learning Media.

Naturalist intelligence needs to be taught and inculcated early in order to form a natural child character and love nature. Child Character is abstract. Character is a personal trait attached to every human being. If the child's positive character has been formed since childhood, will be formed a person who is competent. From learning model stimulation naturalist intelligence (intelligent nature) children will be formed. Curiosity of children will be formed if the child's learning process is given the task. For example looking for thorny plants. The child will be compelled to look for the plant. Another example is the material about plants. Children are invited to see the neighborhood. Creative teachers are able to encourage children to ask questions and be active.

Developing naturalist intelligence and confronting children in the environment, it will indirectly train sensitivity. For example, when learning the properties of water, the child is shown directly to the flowing water. Another thing that can be done, teachers facilitate by making props. In order for children to be creative and innovative, children are led to draw animals and plants. the child not only hears his name but also knows the shape of the animal. From there the child will be creative and innovative. Critical is related to

curiosity. children are critical in thinking. The essential character that must be in someone is honest. the nature of honesty in children through learning Naturalist intelligence will form a child able to understand the natural surroundings. So the child will maintain and preserve and not damage the natural environment.

E. Characteristic of Children's Naturalist Intelligence

1. Environmental recognition

One characteristic of naturalist intelligence, children are able to recognize the environment around it with more depth than before. The child becomes aware of the types of plants and animals and groups them. Children also become aware of the natural materials that are available around them and close in everyday life. Child's knowledge of the environment is increasing in the cognitive aspects of children.

2. Natural symptoms

In the second child's naturalist intelligence characteristics, the child is introduced to cloud conditions and explanations of the weather. This adds to the child's knowledge of natural phenomena and can be considered when the child will perform an activity taking into account the weather conditions. By knowing the weather conditions, the child knows the impact of the weather itself.

3. Environmental sustainability

Characteristics of the third child's naturalist intelligence is the child can help to preserve the environment. With the habit of disposing of garbage in the place that has been taught and familiarized with the help of teachers, children used to throw garbage in place both at school, home, and the surrounding

environment, although initially reminded continuously.

4. Caring for pets

In this fourth characteristic, children can already care for animals ranging from feeding and drinking to keeping animals clean with the help of teachers. Children are seen not afraid of animals with the activities of those who like to be near animal cages and aquariums. These activities can be done by children when they have pets at home and for children who want to have pets.

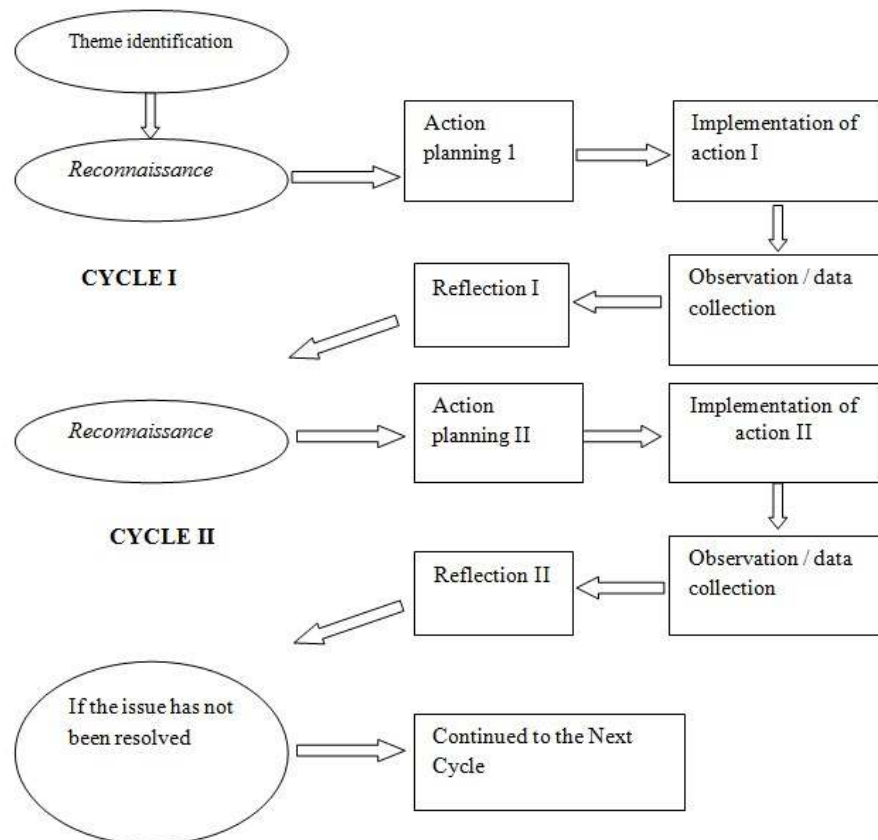
5. Treating plants

The last characteristic of naturalist intelligence is that the child is seen to have been able to care for the plants by watering and fertilizing

with previous guidance given by the teacher. The ability of the child is useful when they want to plant crops at home or wherever. The love of crops is proven by their activities when invited to tour the surrounding environment by not damaging the plants on the roadside during the trip.

Research Method

The research used in this research is action research method or action research adapted from Jhon Elliot model which includes six stages namely (1) theme identification, (2) Reconnaissance (review), (3) action planning, (4) action implementation, (5) observation / data collection, (6) Reflection. Here's an action design picture Jhon Elliot:



The activity in developing the initial assessment instrument and the final assessment of the child's naturalist intelligence is (1) before preparing the class action plan, the researcher first observes and holds an assessment about the learning process situation in developing the child's naturalist intelligence before the action is done; (2) the assessment material is based on conceptual definitions and operational definitions derived from synthesis theory.

Naturalistic intelligence is a score that describes the ability to distinguish, classify, recognize plant and animal species and sensitivity to the symptoms that occur in nature including cultivating and utilizing nature well. Obtained by research subject through observation by using checklist with pattern of likert scale. The range of scores used from one to four of each of the capabilities shown. Score 1 is given if the subject is incapable, score 2 if the subject is able to do with help, score 3 if the subject is able to do without help, and score 4 if the subject is very capable.

Validity testing is done by testing the validity of the content or logical validity. This validity is obtained if an instrument meets the valid requirements based on the reasoning result. A valid standard condition is deemed to be met if the instrument is properly designed, following the existing theories and conditions.

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Based on these information it can be concluded that the validity of the contents of the instrument does not need to be tested condition but immediately obtained after the instrument is completed. The instrument of natural intelligence is structured to measure the specific purpose of a child of a certain age of 5-6 according to the child's development. Assessment of the validity of the instrument prepared by 3 experts of early childhood education so that the instrument used

has been valid for use for children group B aged 5-6 years. The success criterion of this action is the increase of percentage of naturalist child's intelligence through natural material learning media reaches 71% The data sources in the study are the data that can describe the success of the study.

Findings and Discussion

Scores and percentage of naturalist child's intelligence through the utilization of learning media of natural materials that have been described in the table if illustrated by histogram can be seen as follows:

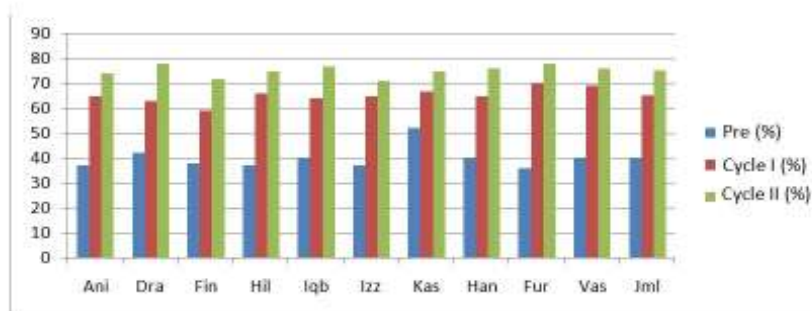


Image Histogram Child's naturalist intelligence from Pre-action up to Cycle II based on the picture shows that the child's naturalist intelligence after held the final assessment shows better development reaching 75.2% with the average intelligence of children reached 75.2%. The range of percentage increase of naturalist child's intelligence before the action up to cycle II can be seen in the following table:

Table increase of percentage child naturalist intelligence

Subject	Increase of points Pre-action – Cycle I %	Increase of points Cycle I – Cycle II %
Ani	28	9
Dra	21	15
Fin	21	13
Hil	29	9
Iqb	16	13
Izz	28	6
Kas	15	8
Han	25	11
Fur	34	8
Vas	29	7
Average Total	24.6	9.9

The table shows that the average percentage of improvement of children's naturalist intelligence before the action up to cycle I showed 24.6% then increased from cycle I to cycle II the average increase reached 9.9%. So the average increase in naturalist child's intelligence through the learning media of natural materials from pre-action to cycle II amounted to 34.5%. These data indicate a tendency that the increase in naturalist child's intelligence experienced the highest increase in cycle I, decreased in cycle II. But the improvement of children's intelligence shows better. The result of qualitative observation shows that the children feel happy to learn to develop their naturalist intelligence through natural material learning media, children actively carry out the learning process until finished. Natural materials media used include plants, animals, homeland, rocks in the learning process to make children easier to develop naturalist intelligence.

Conclusion

The process of learning to develop naturalist intelligence by utilizing natural materials media can show the existence of five characters, including learners to be familiar with the environment, sensitive to natural phenomena, care for environmental sustainability, caring and feeding pets, and taking care of and protecting plants.

Learning strategy by utilizing natural material media can improve students' naturalist intelligence from pre-action to cycle II with a pre-action score of 39.9. And in the first cycle increased by a score of 65.3, while in cycle II the score increased to 75.3. With the average percentage point increase of 24.6% in cycle I and the average percentage point increase of 9.9% in cycle II. So the average percentage point increase from cycle I to cycle II with the amount of 34.5%. In the category of learners are able and the percentage of mastery also increased from pre-action to cycle II with the value of 39.9%, 65.3%, 75.3% respectively.

Reference

- Armstrong, Thomas. Multiple Intelligences in The Classroom. Alexandria Virginia USA: ASCD Member Book, 2009.
- Jhon. Developing Hypothesis about Classroom from Teacher Practical Construct: An Account of the Work of the Fond Teaching Project, in The Action Resarch Reader. Victoria: Deakin University, 1982.
- Gardner, Howard. Multiple Intelligences (Maximizing Potential & Individual Intelligence from Childhood to Adult) Yelvi Andri Zaimur Translation. Jakarta: Darras Books, 2013.
- Isbel, Rebecca. The complete Learning Center Book. United States: Gryphon House, 1995.
- Jackman, Hilda. Early Education Curriculum A Child's connection to the Word. Belmont, USA: Delmar Cengage Learning, 2009.
- Kostelnik, Marjorie. et. al. Developmentally Appropriate Curriculum Best Practice in Early Childhood Education Columbus. Ohio: Merrill Prentice Hall, 2007.
- Mangunwijaya, Fachruddin. M .. Harmonious Living with Nature. Jakarta: Yayasan Obor Indonesia, 2006.
- Musbikin, Imam. PAUD Smart Books in Islamic perspective. Yogyakarta: Like, 2010.
- Slavin, Robert E. Educational Psychology theory and Practice. Jakarta: Index, 2011.
- Sonawat, Reeta & Gogri Purvi. Multiple Intillegent for Presschool Children, first edition. Mumbai: Multi-Tech Publishing co., 2008.
- Sudjana, Nana & Rivai Ahmad. Media Teaching Usage and Making it. Bandung: Sinar Baru Algesindo, 2010.