Analysis of Potential Objects for Outdoor Learning in Natural Science for Students Junior High School

Kinanthi Mustika Sari¹, a), Paidi², b)

¹Post Graduate Biology Education, Yogyakarta State University
Karangmalang Complex, Yogyakarta, 55281, Indonesia.
²Biology Education Department, Faculty of Mathematics and Natural Science, Yogyakarta State University Karangmalang Complex, Yogyakarta, 55281, Indonesia.

a)mustikakinanthi@gmail.com
b)paidi@uny.ac.id

Abstract. This research aims to analyze the potential objects in environment school for outdoor learning on natural sciences learning in Junior High School. Outdoor learning environment contribute critical and creative thinking skills students. Outdoor learning environment is very important for students to learning by recognizing and the natural environment. The research methods is meta-analysis. Data collected from literature studies about curriculum 2013, outdoor learning, natural sciences learning. The collected data technique was the prime and secondary data. The conclusion can be shown after analyzed data. The main result of this paper is to explain the potential of existing objects in the school environment and learning topics that can be done for outdoor learning. School environment is a source of learning through direct experience in the environment so that learning can be more meaningful thus expected student learning outcomes. Many potential objects can be observe and utilize for learning resources outside the class.

1. Introduction
Curriculum 2013 is a curriculum that currently used in schools, instructs in learning using a scientific approach, the implementation of Curriculum 2013 teachers are expected to be able provide facilities to students, designing activities, providing learning resources, motivator, preparing the media, and giving guidance in order to successfully build meaning. One lesson that uses a scientific approach in the 2013 curriculum is an integrated natural science learning, where students are directed to find and discover on their own to help gain a deeper understanding of the natural world. Objects that exist in the curriculum 2013 more refers to the phenomenon of nature, social phenomena, art and culture. Therefore, ministries of education and culture suggested that students occasionally have to learn to be outside the room. One of them is apply outdoor learning in the school. Outdoor learning activities can provide benefits to growth and development of students. The lesson is relevance with real life used environment school as learning sources.

This means that natural science learning in the future teachers are required to be more creative in developing the design and learning tools are integrative. One of the lessons in 21st century learning paradigm is learning activity outside the classroom (outdoor learning). Outdoor learning is not just...
moving lessons out of the classroom, but rather by engaging students together with nature and doing some activity. The environment around the school actually has the potential to be used as a source of classroom plant learning materials because students can see directly the plants being studied.

Outdoor learning approach can be implemented outdoors class, the implementation can be in the school environment, in the wild, at parks, in rice fields, field or in the surrounding villages. Emphasis on location compatibility with learning materials. In this, the teacher must set the appropriate learning for the purpose learning can be achieved. That is, the teacher as a provider of facilities required students, as well as a guide to enable students to gain hands-on experience adequate, but in fact the teacher has not maximized to use potential objects that exists in the school environment for learning outside the classroom.

The special features in the implementation of the 2013 curriculum of learning not only take place in classrooms, but also outside the classroom and attitudes are taught by example not verbally. The learning process does not only take place in the classroom, but also outside the classroom. Learning outside the classroom (Outdoor Learning) is not just moving the lessons out of the class, but by inviting students to integrate with nature and perform some activities that lead to the realization of changes in student behavior towards the environment through the stages of awareness, understanding, attention, responsibility and behavior. Outside activities can be games, stories, sports, experiments, competitions, environmental cases and discussions [9].

Outdoor learning provides an active opportunity for students to involved in all activities undertaken, directly involved on activity, students will get immediate feedback on the impact of the activity which is conducted. In terms of education; based on practice and observation of the results of practice should be included in the curriculum, applied environmental education should be offered, outside classrooms should be put on the agenda by making appropriate conditions, school parks should be designed in such a way as to allow children to interact with nature. Both natural and artificial environments. However, the number of natural environments must be more than an artificial environment. Once such outside space has been designed, which will meet the needs and expectations of children, will contribute to learning and children who spend most of their time in enclosed areas such as homes, in front of television and computers will be encouraged to use the outside space. As a result, we will become healthy individuals and have experiences with nature, who are familiar with the environment, and who have more practice [1].

Students who study outside the classroom have a richer experience during the lesson. The outside context has a major impact on long-term memory and they clearly remember and discuss both the activity and the content of the material in an integrated way. The long-term memory of both process and content differs significantly between indoor and outdoor classes [7]. Learning outside the classroom, conducted in various ways, will enrich the curriculum and make learning fun, meaningful and relevant for children. Outside classroom learning can provide sustainable development of education through initiatives such as working to improve biodiversity in the schoolyard, visiting local forests, exploring and engaging with local communities and developing school trip plans [11].

2. Methods
This research uses meta-analysis which is a research activity by analyzing a number of primary research that discuss similar problems to obtain a general conclusion. Data were collected through literature study on curriculum 2013, natural science learning in junior high and outdoor learning. The collected data is analyzed about potential objects in environment school that can be used in outdoor learning for natural sciences learning, relationships between potential object relationships and learning topics and then drawn a general conclusion from the various studies.
3. Result And Discussions

3.1. Potential Objects in School Environment for Outdoor Learning

| No | SMP   | Percentage of Potential Object |
|----|-------|-------------------------------|
| 1. | SMP A | 75%                           |
| 2. | SMP B | 50%                           |
| 3. | SMP C | 50%                           |
| 4. | SMP D | 87.5%                         |
| 5. | SMP E | 62.5%                         |
| 6. | SMP F | 75%                           |
| 7. | SMP G | 88.8%                         |
| 8. | SMP H | 90%                           |
| 9. | SMP I | 81.6%                         |
| 10 | SMP J | 78.00%                        |
| 11 | SMP K | 97.00%                        |
| 12 | SMP L | 80.20%                        |
| 13 | SMP M | 89.5%                         |

In table 1, it is seen that the potential objects that are in the school environment for learning of outdoor learning is very potential and many types. Among them are yard, garden, pond, field, beach, waste management place, rice field, river. The availability of potential objects allows students to understand various material topics easily. However, this should be supported also from time management, licensing from schools and human resources. This research is intended to analyze the potential of objects that can be used in outdoor learning by utilizing the school environment, local excellence/potential. In line with [15] that learning through the use of land around the school allows students to learn directly about natural phenomena based on their own observations so that the learning process is more meaningful.

In Junior High School B and C, potential objects in there just field, rice field and yard. It is expected that the availability of this learning object can be maximized by teachers in implementing learning-based outdoor learning especially on natural science subjects. The location of the school can also determine student achievement in natural science learning. This is because many students who are less maximize the potential of media that can be used in learning-based outdoor learning. Outdoor activity in science education has a positive effect on students and the results have contributed to literature on school learning environments in science education [2].

The findings indicate that there is a need to rethink the school's position within the school's spatial school design. School design and development requires to put more emphasis on the outside environment and to meet the demands for more involved with nature. However, rich learning environment experiences can only be offered to students when the school environment is complemented by various elements and becomes accessible to students to interact with various elements, without any restrictions. The spatial design of the school environment should also support the shift in attitudes of students and teachers to the school environment, allowing more interaction with no problems on aesthetics, health and safety [3].

These results are supported by the preparation of teaching materials that are tailored to the indicators and learning objectives to be achieved, and as far as possible based on the facts or phenomena that exist in the student environment, the local potential [10]. These findings can improve learning outcomes, but more research is needed on the implementation of outdoor learning by making
use of the school environment as a potential object in science learning and applied to specific topics that are in accordance with potential objects.

Students and teachers must be collaborated in outdoor learning, on the learning process students are involved directly in observing that problem occur in the environment and capable build new knowledge. Similar to learning outdoors in the natural environment is an attitude that aims to provide learning experiences of activities, working together and knowledge of nature, and integrated into subjects like science [12]. More research has shown that daily time in outdoor learning is rich in positive contributions to every desired outcome including improvements in cognitive, social and emotional development, physical activity [4].

The understanding of the learning becomes comprehensive, applicative and integrative. The best and most permanent natural sciences learning based on student experience. And outdoor learning offers different opportunities for students to experience in the environment. Experience made between children and the environment during such learning will make the child more environmentally sensitive. It will be a great contribution for students to become environmentally conscious individuals in the future. In line with [2] education on the environment calls for a new way of thinking about the relationship between people and the world in which they live.

3.2 Relationships of Potential Objects and Learning Topics

| No | SMP   | Learning Topics | Percentage Learning Topics |
|----|-------|----------------|---------------------------|
| 1. | SMP A | 5             | 83.33%                    |
| 2. | SMP B | 2             | 33.33%                    |
| 3. | SMP C | 3             | 50%                       |
| 4. | SMP D | 4             | 66.67%                    |
| 5. | SMP E | 4             | 66.67%                    |
| 6. | SMP F | 3             | 50%                       |
| 7. | SMP G | 5             | 83.33%                    |
| 8. | SMP H | 5             | 83.33%                    |
| 9. | SMP I | 3             | 50%                       |
| 10.| SMP J| 4             | 66.67%                    |
| 11.| SMP K| 5             | 83.33%                    |
| 12.| SMP L| 5             | 83.33%                    |
| 13.| SMP M| 4             | 66.67%                    |

Learning materials that can be applied with outdoor learning in natural science lessons in Junior High School are ecosystem, taxonomy, classification of plants, classification of animals, pollution/waste recycling and global warming. In Junior High School A, G, H, K, L there are 5 ecosystem learning topics, plant classification, pollution, animal classification. Five schools have potential objects and are often used in outdoor learning which is one form of implementation of the 2013 curriculum which is a mapping of 4 major topics. This is supported by the availability of objects that have the potential to be the object of outdoor learning. These objects include school grounds, parks, gardens, fields, beach and rivers.

Junior High School C, F, I three topics are ecosystem, classification of plants and animals. This topic more easy if use outdoor learning. Students can analyze many objects are there school environment. In ecosystem topics students can care more about the surrounding environment and be grateful for the gift of God. Can see the food chain until the food webs around the school environment.

Junior High School B just two topics learning are classification of plants and ecosystem, students observe the abiotic and biotic components as well as the interactions that occur between the components. Outdoor learning is suitable to apply to classification of plants. Because learning utilizes
the school park as a source learning so as to facilitate students' understanding on the material. This outdoor learning strategy emphasize the process of learning based on real facts in daily life, learning topics directly experienced. According to given the challenges associated with measuring shifts in environmental attitudes researchers to explore the use of formal learning perspectives as a school-based learning framework for example school parks. One way to overcome this challenge is to take a lifelong learning approach [8].

Junior High School D, E, J, L four topics in natural sciences learning are ecosystem, classification of plants and waste recycle. The distance between schools and potential objects such as beaches and factories is close enough that it does not consume much time and does not interfere with other learning activities. Teachers and students can work together in implementing outdoor learning, thus making learning meaningful by using existing potential objects in school environments for natural sciences learning. The need provides opportunities for parks / lands to consider how they can make part of their natural settings visible more feasible and desirable for educators to use with young children. Instead security and feasibility may lead to their assessment of the precision of certain outdoor settings. This understanding can guide professional development efforts to encourage the selection and use of outdoor quality [6].

Students can learn more deeply through those objects faced rather than learning in a classroom with many limitations. Outdoor learning is more challenging for students and bridges between the theory in the book and the reality that is in the field, so it can process the concept it receives well. Learning topics and potential objects that exist in the school environment will give a positive influence on environmental awareness and learning that is not easily forgotten. Similar in research [16], in this school not only students who learn something, even teachers learn from students and parents also learn from teachers and students. The students not only learn in the classroom but they learn everywhere and from anyone. Not only learning from books but also learning from the natural environment.

Research [12], the natural environment can enhance relationships, work activities the team can provide as a mechanism. The impact of nature on student’s learning can improved create new knowledges, environment knowledges, observation capabilities, learning suitable waste management, skills for instance recycling and composting, learning by smelling, touching and feeling, motivation towards learning. There are often a misconception of the lack of viable green space available to engage in meaningful environmental studies. This project too shows that the local environment provides quite a lot opportunities to develop scientific questions and stimulate the interest of science and their local environment. Expand this knowledge base important for those involved in research and teaching and learning in various contexts, both in and out of the formal classroom [5].

Experiences of children and education about the environment can occur in two ways. The first is the inclusion of activities and practices based on experimentation, observation and exploration into the curriculum in which children will gain environmental experience. Second, when children use outdoor space for play purposes, they are unconsciously able to obtain information and gain experience about the environment through observation during their activities [1]. In line with [13] the affective domain is not a new area for environmental educators. Educators should examine the other components that make up the affective domain. If the studies and the appropriate data are sufficiently varied, researchers will be a better place to compare output and develop more a successful environmental education program.

Learning resources in junior high school G, H, K, and L on learning topics environmental pollution, but the natural potential is less utilized for learning activities. The natural potential of the surrounding environment of the school, among others, roads, factories, ditches and dump located around the school that can be used as a source of learning. Produce works beneficial for environmentally friendly society, thus materials for environmental change and waste recycling have been implemented into people's lives. The use of the environment in school learning has the potential to develop a school curriculum. Learning activities undertaken can provide hands-on experience in the field to students and provide opportunities to learn outside the classroom that has more open space [14].
More objects that have the potential for outdoor learning will be better and more support multiple topics. During this understanding of science students are only fixated on the details of existing concepts in the book, without understanding what and how the meaning contained in the concept. Teachers should utilize and create learning resources that exist in the school environment in order not to be in vain. Use potential object addition to saving time, low cost and train the creativity of teachers and students.

4. Conclusion
Many aspects that can be used as potential objects in outdoor learning in natural science learning. Many potential objects will support outdoor learning on some learning topics such as ecosystems, plant classification, pollution, waste recycling. The use of the environment in school learning has the potential to develop a school curriculum. The basic purpose of outdoor learning is permanent and efficiency learn. These activities can also be used to reinforce the further learning activities at school. Students find objects, learning materials from environment school by conducting direct observation in the field. In addition, such learning environments help develop problem-solving skills, have a positive attitude toward science, and motivate. Outdoor learning environment support student development in all three areas, cognitive, emotional and psychomotor. Learning activities undertaken can provide hands-on experience in the field to students and provide opportunities to learn outside the classroom that has more open space so as to make learning meaningful.

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