Behavior, paradigm, responses and concern Students’ on the outdoor learning

R Z Ekaputri¹, B Karyadi¹, N Anggraini¹, A Y Zukmadini¹, A Ruyani¹, and W Zulistia²

¹ Department of Mathematic and Science Education, Faculty of Teacher Training and Education, Bengkulu University, Raya Kandang Limun Street, Bengkulu 38371, Indonesia
² Senior High School Ulu Musi, Empat Lawang 31594, South Sumatera, Indonesia.

*E-mail: rzeputri@unib.ac.id

Abstract. This research was conducted using biology learning strategy based on natural environment around the conservation area of smart garden University of Bengkulu (UNIB). Bengkulu University's smart garden conservation area is a learning resource for students located in Bengkulu Province. This study refers to the steps of Research and Development which begins with (1) the planning stage, (2) the development stage and (3) the effectiveness test stage. The learning strategy applied includes three stages of learning; Introduction, Exploration, and Interpretation (IEI) which are equipped with Natural Environment Based Learning. The results test show that learners who learn with outdoor learning have behavior, paradigm, response, and good concern to the environment.

1. Introduction

Education provides the learners to build their mental and personality [1]. The curriculum 2013 (hereinafter abbreviated as K-13) is comprehensively applied to primary, junior and high school students in Indonesia [2]. The competence of graduates as demanded by K-13 comprising of several main parts, namely attitude, knowledge and skills [3]. The curriculum 2013 also emphasizes the character development of youth generation [4]. Take, for instance, Malaysian curriculum supports the national educational philosophy which is aimed at creating students who are intellectually, spiritually, emotionally and psychologically robust [5]. This can only be done if the government consistently implements the prescribed curriculum to obtain the best generation for the country’s advancement.

To achieve the expected competence of the graduates, teachers need to design a proper learning model. The interesting learning facilities for the learners is necessary. One of them is the conservation area 'smart garden' Bengkulu University. The conservation area of Bengkulu University has various number collection of animals and plants, which are enforced by the facilities and infrastructure that are safe and comfortable as the learning resource [6]. The existence of Green School results in the increased confidence, inspiration to learn, a sense of responsibility and create a good relationship between teachers and students [7]. Therefore, natural environment is deemed as a vast source for boosting the process of stimulation and inspiration of meaningful learning activity. [8] Education with natural approach has multidisciplinary characteristic, helping learners to know about nature and natural products derived from nature [9].
Integrating character education in developing students' knowledge and skills is also emphasized in the curriculum 2013 [4]. In addition, the educational character needs to be instilled in the students [10]. Educational character aims to build and equip learners [11]. Strengthening the character can be done through the materials and learning methods that suit one of the outdoor learning. Outdoor learning methods can respond to a set of social conditions [12]. The curriculum material can be enriched and built without distance and activity, the learning becomes effective and centered directly on the students [4].

Outdoor learning based on the surrounding natural environment is able to balance understanding, ability and character planting [13]. A sense of love for the environment, a sense of caring among others and more meaningful delivery can be achieved through environmentally-based outdoor learning [14]. This learning provides an opportunity for learners to actively seek, process, construct and use knowledge [15]. The lives of learners become better, physical and spiritual because they are integrated with ecology and the environment [16]. The importance of nature-based learning is to help individuals develop positive attitudes and behavior and raise awareness of the environment [9]. In addition, the school environment is also important for child development [17]. The problems of this research is to identify how the behavior, paradigm, response and awareness of elementary school students towards outdoor learning based on the surrounding natural environment.

2. Research Methods

This research is a quantitative research using statistical descriptive method. The sample in this study are the students drawn from elementary school level. The selection of students as the sample of research was conducted by using simple random sampling technique, in which a number of students were selected randomly, and we observed their behavior and concern for the environment-based learning strategy. The research instruments used to measure student behavior and concerns adopt a learning development model developed [18,19].

3. Results and Discussion

3.1. Student behaviour

Students’ behavior toward the outdoor learning can be seen in Table 1. In general, the highest mean is found in the question number 13, learners argue that the behavior of maintaining the environment of springs and other aquatic ecosystems is certain. The lowest mean is on item number 2, learners argue that not all companies will do waste disposal into the river.

| No | Questions                                                                 | Criteria | Mean | STDV |
|----|---------------------------------------------------------------------------|----------|------|------|
| 1  | Willing to contribute in the form of money for environmental conservation activities, especially springs (water ecosystem) | 8 3 3 0 0 | 4.5 | 0.8  |
| 2  | Ready to volunteer for water ecosystem conservation activities            | 7 4 2 0 1 | 4.1 | 1.2  |
| 3  | Willing to encourage family or friends not to damage the aquatic ecosystem | 9 1 0 0 4 | 3.7 | 1.8  |
| 4  | Ready to join a group of environmentalist working for water ecosystem conservation | 8 6 0 0 0 | 4.5 | 0.5  |
| 5  | My friends will support me to participate in the conservation of the aquatic ecosystem | 9 3 2 0 0 | 4.5 | 0.8  |
| 6  | My family will encourage me to participate in the conservation of the aquatic ecosystem | 8 2 2 0 2 | 3.9 | 1.5  |
| 7  | Teachers will encourage me to participate in water conservation ecosystem activities | 8 3 1 0 2 | 4.0 | 1.4  |
Based on the circulated questionnaire, it can be concluded that outdoor learning based on the surrounding environment is able to change the behavior of learners, increasing insight on the importance of maintaining the environment (ecosystem), improving good cooperation among group members and observing the attractive pond ecosystem for study [13]. Stimulating environmental behavior is as important as environmental information [20]. Outdoor learning methods can respond to a set of social conditions [12]. The success of outdoor learning is shown where learners care about environmental problems. Learners are concerned about this environment, not out of direct interaction with the environment.

3.2 Students’ paradigm

Table 2 is the paradigm Table of learners on outdoor learning. In general, the highest mean is in the 9th and 14th question items, the learner believes they agree that the springs are very important for the life of the animals and plants and the environment in which animals live and the growth of the plants we must guard. The lowest mean on item 5, learners argue disagreement decreases and damage to the springs will not harm us. The primary purpose of the school is to encourage students' intellectual development, although using a wider variety of activities than before [12]. Good instruction not only delivers more information but provides guidance, advice, training and reciprocity [21]. This change of
view of the environment influences the mind, attitude and behavior of learners. Environmental-based outdoor learning achieves the goals of the actual school.

**Tabel 2.** The descriptive statistics of students’ paradigm

| No | Questions                                                                 | Criteria | Mean | STDV |
|----|---------------------------------------------------------------------------|----------|------|------|
| 1  | We do not need to keep the pond or swamp environment as a turtle's living place | 1 0 13   | 1.1  | 0.5  |
| 2  | Catching fish in swamps using poison will kill other animals               | 3 0 11   | 1.4  | 0.9  |
| 3  | All fish that live in swamps or rivers are for the needs of all of us      | 13 1 0   | 2.9  | 0.3  |
| 4  | Reduced swamp areas affect the life of the turtle.                         | 7 2 5    | 2.1  | 0.9  |
| 5  | Reduced and damaged springs will not harm us                              | 1 0 13   | 1    | 0    |
| 6  | The amount of plastic waste in smart garden pond does not disturb the turtles that live in the pond. | 3 2 11   | 1.4  | 0.7  |
| 7  | Ponds that have been shallow or dry should be stockpiled immediately      | 5 3 6    | 1.9  | 0.9  |
| 8  | The swamps around us should be used for gardening                         | 5 4 5    | 2.1  | 0.8  |
| 9  | The source of the spring is very important for the life of animals and plants | 14 0 0   | 3    | 0    |
| 10 | Planting a swamp with oil palms will disrupt the animals living in the swamp. | 3 4 7    | 1.7  | 0.8  |
| 11 | Animals and plants should we protect so as not to quickly become extinct   | 13 0 1   | 2.9  | 0.5  |
| 12 | Maintaining turtles at home means protecting turtle animals from extinction | 10 2 2   | 2.6  | 0.8  |
| 13 | Plants around smart garden pond can keep the pond from drying out         | 12 2 0   | 2.9  | 0.4  |
| 14 | The environment where animals live and the growth of plants we must guard | 14 0 0   | 3    | 0    |
| 15 | Animals and plants can be utilized for the benefit of now and also to come | 12 2 0   | 2.9  | 0.4  |

Mean 8 1 5 2.19 0.92

Description: The range of mean score: Low (L) (1.00-1.60), Average (1.70-2.20) and High (H) (2.30-3.00)

3.3. Student’ responses

Student response to outdoor learning in **Table 3**. In general, the highest mean is in the 1st and 2nd question items, learners think they agree that studying at the University of Bengkulu smart park is excited and excited. The lowest mean on the 3rd item, students argue disagree if studying at the University of Bengkulu smart garden is very boring. Very good student response to outdoor learning in the university park area of Bengkulu University. In addition, learning can provide opportunities for learners to acquire and master various forms of basic skills, attitudes and appreciation of various things [13].

**Table 3.** The descriptive statistics of students’ responses

| No | Question                              | Criteria | Mean | STDV |
|----|---------------------------------------|----------|------|------|
| 1  | I am very happy to study at smart garden UNIB | 13 1 0   | 2.9  | 0.3  |
| 2  | I am excited to study at smart garden UNIB | 13 1 0   | 2.9  | 0.3  |
| 3  | Studying at UNIB Climate Park is very boring | 14 0 0   | 1    | 0    |
| 4  | Learning at smart garden UNIB is very tired and | 0 2 9    | 1.4  | 0.5  |
5. After studying at smart garden UNIB, I came to know that turtles can live in ponds.
6. After studying at smart garden UNIB, I became more aware of the type of animal that lives in a pond.
7. After studying at smart garden UNIB, I became fond of turtle animals.
8. Keeping the pond in smart garden from drought means we keep the turtles to stay alive in the pond.
9. Turtles that are kept in homes should be transferred to smart garden ponds.
10. Observing the turtle's animals is very disgusting.

| No | Questions                                           | Criteria | Mean | STDV |
|----|-----------------------------------------------------|----------|------|------|
| 1  | Remind friends not to throw garbage into the river | 6 2 1 4 1 | 3.57 | 1.5  |
| 2  | Helping parents clean the sewer (small river) around the neighborhood | 4 2 3 4 1 | 3.29 | 1.38 |
| 3  | Doing work to clean drains in RT / RW neighborhood or residential area. | 4 0 3 6 1 | 3  | 1.41 |
| 4  | Make handicrafts using used goods.                  | 3 2 3 6 0 | 3.14 | 1.23 |
| 5  | Propose to the father / mother to collect the rotten garbage to be composted. | 12 0 0 2 0 | 4.57 | 1.09 |
| 6  | Reusing used plastic bags for wet trash (organic waste). | 5 3 4 2 0 | 3.79 | 1.12 |
| 7  | Reprimand others who throw garbage into rivers and ditches. | 3 3 2 5 1 | 3.14 | 1.35 |
| 8  | Reminds the father / mother and other relatives to bury the used cans. | 2 1 3 6 2 | 2.64 | 1.28 |
| 9  | Invite friends to burn plastic trash.               | 1 0 1 3 9 | 1.64 | 1.15 |
| 10 | Pick up the garbage that is littered in the classroom. | 6 5 3 0 0 | 4  | 1.18 |
| 11 | Invite friends to plant crops in the schoolyard.    | 3 1 1 5 4 | 2.57 | 1.55 |
| 12 | Propose to teachers to work together to clean up the school environment | 4 0 2 3 5 | 2.64 | 1.69 |
| 13 | Make announcements to keep the school environment clean | 3 0 2 3 6 | 2.36 | 1.6  |
| 14 | Invite friends to collect the seeds of fruit to make the nursery. | 1 2 2 8 1 | 2.57 | 1.09 |
| 15 | Collect a bottle of aqua (plastic) to be given or sold to scavengers. | 0 1 1 5 7 | 1.71 | 0.91 |

**Description:** The range of mean score: Low (L) (1.00-1.60), Average (1.70-2.20) and High (H) (2.30-3.00)

### 3.4. Students’ concern

Students’ awareness or concern of the pursuit can be seen in Table 4. In general, the highest mean is in the 5th and 19th question items, learners argue they often suggest to the father / mother to collect the rotten garbage to compost and feed pets such as cats, rabbits, or other farm animals. The lowest mean on the 27th item, the learner argues never to doodle or write self-identity (name alone) and group on the tree using paint. This happens because there is a bond between learners to the environment. The bond created between the child and the environment will make the child sensitive to the environment, this will be a major contribution in the future to make the individual child aware of the environment [22]. The environmental approach can help the child to apply knowledge based on facts found in the surrounding environment [6].

**Table 4. The descriptive statistics of students’ concern**
Together with classmates planting trees in the schoolyard.

2. Allowing the plants in pots to wither.

3. Propose to the father / mother to use manure on plant maintenance.

4. Feeding pets such as cats, rabbits, or other livestock.

5. Propose the teacher to provide potted plants in the classroom or school terrace.

6. Picking flowers that are blooming around the home or schoolyard.

7. Use mosquito poison every night especially at bedtime.

8. Forbid friends to take bird eggs contained in the nest.

9. Invite friends to catch wild animals that are around the house (such as birds, snakes, butterflies, or other wild animals).

10. Doodling or writing identities (own names) and groups on trees using paint.

|   |   |   |   |   |   |
|---|---|---|---|---|---|
| 16 | Together with classmates planting trees in the schoolyard. | 2 | 1 | 1 | 6 | 4 | 2.36 | 1.39 |
| 17 | Allowing the plants in pots to wither. | 0 | 0 | 3 | 1 | 10 | 1.5 | 0.85 |
| 18 | Propose to the father / mother to use manure on plant maintenance | 3 | 2 | 2 | 4 | 3 | 2.86 | 1.51 |
| 19 | Feeding pets such as cats, rabbits, or other livestock | 10 | 3 | 0 | 1 | 0 | 4.57 | 0.85 |
| 20 | Helping the father or mother during the cultivation of plants | 5 | 1 | 4 | 3 | 1 | 3.43 | 1.4 |
| 21 | Remind you to replace the soil in plant pots | 3 | 1 | 5 | 4 | 1 | 3.07 | 1.27 |
| 22 | Propose the teacher to provide potted plants in the classroom or school terrace | 2 | 1 | 4 | 2 | 5 | 2.5 | 1.45 |
| 23 | Picking flowers that are blooming around the home or schoolyard | 1 | 0 | 1 | 3 | 9 | 1.64 | 1.15 |
| 24 | Use mosquito poison every night especially at bedtime | 5 | 1 | 0 | 3 | 5 | 2.86 | 1.83 |
| 25 | Forbid friends to take bird eggs contained in the nest | 3 | 1 | 5 | 4 | 1 | 3.29 | 1.73 |
| 26 | Invite friends to catch wild animals that are around the house (such as birds, snakes, butterflies, or other wild animals) | 0 | 0 | 2 | 2 | 10 | 1.43 | 0.76 |
| 27 | Doodling or writing identities (own names) and groups on trees using paint | 0 | 0 | 0 | 1 | 13 | 1.07 | 0.27 |

Mean: 3, 1, 2, 3, 4, 2.78, 1.54

Description: The range of mean score: Very Low (VL) (1.00-1.80), Low (L) (1.81-2.60), Neither high nor low (NHNL) (2.61-3.40), High (H) (3.41-4.20) and Very High (VH) (4.21-5.00)

4. Conclusion

Outdoor learning-based on the surrounding natural environment has a positive impact on primary school students. Positive impact on behavior, paradigm, response and environmental awareness. Environmental conscious behavior, paradigms that change attitudes, response to changes and environmental conditions and environmental awareness. Outdoor learning also supports the creation of environmentally conscious individuals, environmentally friendly and caring for the environment.

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