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Analysis of the Use of the Natural Exploration Method on Biodiversity Concepts on Senior High School Students' Interest and Learning Motivation

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Abstract

This study aimed to evaluate the effect of the natural exploration method on senior high school students' interest and learning motivation on biodiversity concepts. This method is thought to provide a more interactive and enjoyable learning experience through student involvement with the surrounding environment. The study was conducted on grade X students at one of the senior high schools in Tangerang Regency, Indonesia with 145 grade X students as research subjects, using a qualitative descriptive approach in the form of Classroom Action Research (CAR). Data were collected through observation and Likert scale questionnaires. The results showed that the application of the natural exploration method increased students' interest and motivation. The highest percentage of interest in learning was found in the statement that the exploration method makes biodiversity learning more interesting (53.8%), while the highest learning motivation was seen in students who felt more enthusiastic about learning biodiversity after the exploration activity (53.8%). However, some students admitted that they had difficulty understanding the teacher's explanation (33.8%) and rarely looked for additional information (40.1%). In conclusion, the natural exploration method is effective in increasing students' interest and motivation in learning, although improvements are still needed in several aspects of learning.

Keywords: Active learning, Student interest, Student motivation, Natural exploration method

INTRODUCTION

Biodiversity encompasses all forms of life, including genes, plant species, animals, microorganisms, as well as ecosystems and the processes that occur within them. However, along with globalization and increased efficiency, biodiversity in various places is starting to be threatened. In this context, standardization is often considered more effective and modern, while diversity is seen as inefficient and old-fashioned. This phenomenon does not only occur in social and cultural aspects, but also applies to biodiversity, which is increasingly marginalized in various aspects of life. Therefore, it is important to review efforts to preserve this diversity, especially in the world of education, which plays an important role in instilling environmental awareness (Sutoyo, 2010).

One approach that can be used in education to raise awareness of the importance of biodiversity is the natural exploration method. This method emphasizes environment-based learning through observation, discussion, and reporting, which allows students to be directly involved in exploring nature. The natural exploration method encourages students to build knowledge based on direct experience and biological ideas through research and investigation. In addition, the natural exploration method is characterized by learning activities designed to

be fun (joyful learning) with a bioedutainment nuance so as to arouse interest in learning further and increase student learning motivation (Susilo, 2016). In this way, students not only learn theory, but also relate it to real conditions in their environment, which can ultimately foster a sense of concern and responsibility for nature (Kusumadewi *et al*., 2021). Through the application of the natural exploration method, students are given the opportunity to formulate their own understanding and ideas after the learning process ends (Salu & Tadius, 2019).

Active student involvement in the natural exploration method is also closely related to increased interest in learning. Interest is defined as a person's feeling of interest in something that comes from a sense of pleasure, thus triggering continued attention and involvement (Khairina *et al*., 2017). With a more interactive and contextual learning method, such as natural exploration method, students can more easily find their interests, which then affects their learning motivation. This learning motivation acts as an internal drive that makes students strive to continue learning and understanding the material, even when facing difficulties. In other words, a high interest in a material will strengthen students' motivation to continue learning and deepen their knowledge (Ricardo & Meilani, 2017).

In addition, motivation is strongly related to learning outcomes. Motivation functions as a driver that allows students to achieve optimal learning outcomes. When students are motivated, they will be more involved in the learning process and strive to achieve the expected competencies (Rahman, 2021). These learning outcomes will later become a measure of students' success in achieving cognitive, affective, and psychomotor understanding that is in accordance with learning objectives. In this context, the natural exploration method provides a learning experience that is not only relevant, but also in-depth and meaningful, which is expected to significantly improve student learning outcomes (Fauziah *et al*., 2017).

By considering the various factors above, this study aims to analyze the effectiveness of the exploration method in increasing students' interest and motivation to learn. It is hoped that the findings of this study can provide new insights for teachers and educators in implementing more innovative and student-focused learning methods, thus creating a more meaningful and positive learning experience (Fauziah *et al*., 2017).

METHOD

This research was conducted through 1 cycle consisting of planning, implementation, and observation activities. This cycle was conducted with 1 meeting and was allocated 2x45 minutes (2 teaching hours). This research was conducted at a senior high school in Tangerang

Regency, Indonesia with the research subjects being class X students with 145 student samples. The research approach used was a qualitative descriptive approach and was included in the type of Classroom Action Research (CAR) which examines the implementation of learning in the classroom. The data in this study were in the form of statements obtained from the results of documentation, observations, and field notes relating to student activities during the teaching and learning activities. Data analysis in this study, namely the observation activity of the implementation of learning in the school environment was calculated based on the implementation score of each stage of the activity, the results of observations of student interest and motivation.

The data collection technique used was a questionnaire on student interest and motivation and observation during the activity. Observation is a data collection technique that relies on observations of ongoing activities (Najemi, 2014). Then, the questionnaire is a method of data collection carried out by giving several written statements or questions to respondents to be responded to according to user requests (Pratiwi, 2014). The guidelines for scoring the learning motivation questionnaire based on the Likert scale are as in Table 1.

Table 1. Scoring guidelines for the interest and motivation questionnaire for learning using the natural exploration method

Criteria	Score
Strongly agree (SS)	5
Agree (S)	4
Neutral (N)	3
Disagree (TS)	2
Strongly disagree (STS)	1

The questionnaire data obtained is summarized and presented. The formula used for the percentage is:

$$percentage\ (\%) = \frac{Total\ score\ obtained}{Maximum\ score} \text{ x } 100\%$$

The resulting value (%) is then converted into a criteria table. The assessment criteria are shown in Table 2.

Table 2. Assessment criteria for the questionnaire on interest and motivation to learn using the natural exploration method

Percentage (%)	Criteria
86-100	Very good
76-85	Good
60-75	Enough
50-59	Less
≤54	Very Less

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RESULTS AND DISCUSSION

Based on the results of the student learning interest questionnaire in Table 3, in general from the 10 aspects of questions given, the highest percentage is in statement number 2 which is 53.8%. While the lowest percentage is in statement number 8 which is 33.8% related to learning outside the classroom through the exploration method is more enjoyable than the learning method in the classroom.

Table 3. Results of the Learning Interest Questionnaire of Class X Students a Senior High School In Tangerang Regency, Indonesia

No.	Statement	Percentage (%)
1.	I feel more interested in the biodiversity material after participating in learning using the exploration method.	46.9%
2.	The exploration method makes learning about biodiversity more interesting.	53.8%
3.	I prefer to participate in biodiversity learning in the field using the exploration method compared to in the classroom.	38.6%
4.	The exploration method helps me understand the material being taught better.	48.3%
5.	Learning using the exploration method makes me want to explore the surrounding nature more.	46.9%
6.	I feel more actively involved in the learning process when using the exploration method.	45.5%
7.	I am more often interested in discussing after doing exploration activities.	44.1%
8.	Learning outside the classroom using the exploration method is more enjoyable than learning methods in the classroom.	33.8%
9.	I find it easier to remember the concept of biodiversity after participating in exploration activities.	46.9%
10.	I feel happier learning about biodiversity after using the exploration method.	52.4%

From the student learning motivation questionnaire in Table 4, the lowest percentage of 40.1% was in statement number 6 with the statement I more often try to find additional information about biodiversity after exploration activities. While the highest percentage is in number 1 at 53.8% with the question the exploration method makes me more enthusiastic about studying biodiversity.

Table 4. Results of the Learning Motivation Questionnaire of Grade X Students a Senior High School In Tangerang Regency, Indonesia

No.	Statement	Percentage (%)
1.	The exploration method makes me more enthusiastic about learning biodiversity.	53,8%
2.	I feel more motivated to study harder after participating in the exploration activity.	46,2%
3.	The exploration method helps me be more confident in understanding the biodiversity material.	47,6%
4.	I feel more responsible for my learning after participating in the exploration method.	50,3%
5.	The use of the exploration method makes me more motivated to achieve better learning outcomes	52,4%
6.	I feel more focused when studying in the field using the exploration method.	40,7%
7.	I try to find additional information about biodiversity more often after the exploration activity.	42,8%
8.	The experience of learning with the exploration method makes me want to study other topics related to biodiversity.	44,1%
9.	I feel more motivated to complete assignments well after participating in the exploration method learning.	51,7%
10.	The exploration method helps me be more motivated to take biodiversity lessons in the future.	49%

Learning is a process of interaction between students, teachers, and the learning environment. In most cases, the implementation of learning is carried out with the aim of increasing the potential of students to achieve certain learning objectives. However, in this process, sometimes problems occur that have an impact on student learning outcomes, especially with problems related to the use of learning models and media. Learning in a school environment is a type of learning where teachers invite students to learn outside the classroom, then see directly what is happening in the field. The purpose of learning in this

environment is to make students more familiar with their environment and help them solve problems by working together. According to Ali (2008) stated that biology learning in a school environment increases student interest and encourages creativity, independence, cooperation, and mutual cooperation.

Interest in learning is a person's drive or factor that effectively arouses interest or attention, so that it leads to the selection of an object or activity that is useful, interesting and in time will bring satisfaction to him. The low interest in learning students clearly also affects students' academic achievement, feelings of pleasure, student interest, student attention, and student involvement. There are several elements in the interests and motivations studied, including students enjoy receiving lessons, this pleasure triggers their own motivation, students are happy because they can be directly involved in observing objects in their environment, and students are happy because learning activities are carried out outside the classroom. Students who have a sense of pleasure will be more focused on learning, but students who are not happy will be less interested and face difficulties when learning (Abidin, 2006). One important element in maintaining student learning motivation is interest. Interest or attention is a very useful tool for improving student learning outcomes. So as to find out the level of interest and motivation of students in learning. This study uses a questionnaire of interest and motivation to learn about biodiversity learning using the Nature Exploration model to find out students' interests and motivation to learn about learning. Students must fill out the questionnaire honestly, in this case are Class X Students a senior high school in Tangerang Regency, Indonesia .

Based on the results of the analysis of the increase in interest and motivation to learn carried out on students of class X a senior high school in Tangerang Regency, Indonesia by filling out the questionnaire on student interest and motivation to learn, it turns out that various percentages are obtained ranging from 33.8% to 53.8% for the 10 statement indicators given to students. The average value of student interest in learning here can be said to be very good, which is 83.1%. Meanwhile, based on filling out the student motivation questionnaire, the highest percentage was obtained in statement 1 of 53.8% on the indicator statement the exploration method makes me more enthusiastic about studying biodiversity. While the lowest percentage of 40.1% in statement number 6 I often try to find additional information about biodiversity after exploration activities. The average value of student motivation to learn here can also be said to be very good, which is 87%.

Student interest in learning in some class X students is relatively low, this is in line with student academic results. During the learning process, there are several classes with

teachers who are accustomed to using lecture and discussion methods, thus affecting students' interest and motivation. In addition to using lecture and discussion methods, teachers sometimes also use project-based learning, where the use of this learning model creates a high level of enthusiasm and interest in learning for students with much higher learning compared to teaching and discussion methods. This is because some students do not like the lessons they get so that their willingness to learn is minimal or even shows no interest in learning at all. Through the natural exploration method used by researchers by presenting the surrounding environment as an object in learning biology (Rosalia, 2021). It is able to provide encouragement to students to meet their learning demands.

The natural exploration method can influence students' desire and interest in learning. This can be influenced by fun and challenging activities (Sofiana *et al*., 2022). Students can learn in a more enjoyable and interactive way. The learning process that involves students directly interacting with their environment greatly helps students understand the teacher because the scientific process allows students to find problems and solve them through mutual interaction. In addition, this method tends to encourage students' enthusiasm for learning because it makes students' concepts more difficult to solve after the teacher gives a problem. Based on the results of the analysis and discussion that have been presented, it can be concluded that the motivation and interest of class X students at a senior high school in Tangerang Regency, Indonesia are influenced by the implementation of the natural exploration approach by utilizing the environment around the school.

CONCLUSION

Based on the results of the student learning interest questionnaire, in general, of the 20 aspects of the statements given, the highest percentage lies in statements two and six, which is 53.8%. While the lowest percentage is in statement 8 at 33.8% related to the lack of students in understanding the teacher's explanation that focuses on the material. From the student learning motivation questionnaire, the lowest percentage is 40.1% with the question I often try to find additional information about biodiversity after exploration activities. While the highest percentage in statement 1 is 53.8% on the indicator statement the exploration method makes me more enthusiastic about studying biodiversity. By using the nature exploration learning model, in general students can feel motivated and also interested in participating in biodiversity learning according to the results of the student learning interest questionnaire, the second statement is "The exploration method makes biodiversity learning more interesting" with the highest percentage of 53.8%.

SUGGESTIONS

Based on the results of the study, suggestions that can be given to biology teachers to carry out learning in the school environment in order to create an interesting learning atmosphere for students, not causing boredom. Teachers need to pay attention to time allocation, the Basic Competencies used and the learning resources available so that learning at school runs well.

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