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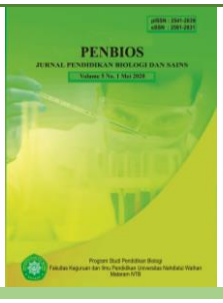

Research Article

Problem-Based Learning Model To Increase The Activity Of Biology Learning Cross The Interests Of Students In Class X SMAN 7 Mataram

Nita Sasmita[1*], Jamaludin[2], Haminatul Hardiana[3]

[1]Student at University of Mataram, Mataram, Indonesia
[2]Teacher Professional Education Department, University of Mataram, Mataram, Indonesia
[3]Biology Teacher, SMAN 7 Mataram, Mataram, Indonesia

[*] Corresponding author: nsasmita094@gmail.com

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ABSTRACT

This study aims to increase the active learning of students at SMAN 7 Mataram in the subject of cross-interest biology through the implementation of the problem-based learning model. This type of research is called classroom action research and is carried out over three research cycles. The research subjects were students of class X IPS 5 at SMAN 7 Mataram in the even semester of the 2022–2023 academic year. The results of this study indicate that the implementation of the problem-based learning model in the learning process can increase the activity and learning outcomes of class X, IPS 5, SMAN 7, and Mataram. This is evident from cycle II, where the percentage of student activity was 56% and student learning outcomes were 28%. With an increase in cycle III, the percentage of activity and completeness of learning outcomes reached indicators of success, which were determined by the percentage of activity reaching 84% (a very good category).
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INTRODUCTION

Education plays an important role in preparing quality human resources, able to face future challenges and ready to compete in the development of science and technology (Harwati, 2021). In the era of the Industrial Revolution 4.0, teachers are expected to be able to shape students into human beings who are skilled, independent, have broad insight and are responsive to their environment. For this reason, teachers need to design learning activities that are closely related to daily life and the nature around students (Harwati, 2021).

Nowadays, there has been a shift in the pattern of the teaching system, namely from teachers who dominate the class to teachers as facilitators in the learning process. In order to improve the quality of learning, teachers must create active and creative learning conditions. Learning activities must be challenging, encourage exploration, provide successful experiences, and develop students' thinking skills (Dimyati & Mudjiono, 2015).

Activeness comes from the word active, which means working hard, actively trying, being able to react and interact, while the meaning of the word activeness is busyness or activity (Harwati, 2021). Learning activeness is characterized by optimal involvement both intellectually, emotionally and physically if needed. According to Aunurrahman (Kharisma, 2020), children's natural ability to be active will be able to develop in a positive direction if their environment provides good space for that activity to flourish. So it is important for the student environment to provide an educational situation to support the growth of student activity.

Learning achievement can be influenced by the learning process at school, this process is influenced by the activeness of students. According to Eko Widiyanto (Kharisma, 2020) states that there is an influence of students' learning activities on students' learning achievements. The above shows that students' activities play an important role in classroom learning. The learning process at school still finds several problems which will ultimately affect learning achievement, these problems include: (1) Teachers have not maximized the learning process or in other words teachers still use learning models that are not yet varied, resulting in invisible student activity. (2) Student activity is one of the elements of successful learning in class, students still rarely ask questions, even though teachers often give students the opportunity to ask questions about things they do not understand. (3) Students have not actively worked on practice questions in the learning process which is still lacking.

Based on the results of initial observations used as research problems, it is known that there are students who enjoy talking to their classmates, playing on their cell phones in the middle of class, and even falling asleep in class. There is a lack of interaction between students and teachers during the learning process in class, as well as a lack of student activity in class such as asking questions, discussing, and expressing answers according to their opinions. The PBL model has several benefits, such as requiring students to possess advanced skills to actively participate in problem solving, making learning more meaningful, and making learning more engaging because the problems are connected to real-world situations (Khairani & Aloysius, 2023). Therefore, this research aims to improve biology learning activities for students at SMAN 7 Mataram Class X IPS using problem-based learning.

METHOD

In the context of Classroom Action Research (PTK), according to (Asmani, 2011), the research methodology uses a series of continuous cycles. In this action research, three cycles were used, each cycle consisting of four stages, namely planning, implementation, observation, and analysis and reflection. Planning is carried out carefully and in detail, implementation is according to existing plans, observations are carried out carefully, analysis is used to sharpen the results of observations and reflection is used to draw conclusions and decide on follow-up actions.

The subjects in this Classroom Action Research are students in class X IPS 5 for the 2022/2023 academic year. The place and time for carrying out this research was at SMAN 7 Mataram which is located on Jl. Adi Sucipto, North Ampenan, District. Ampenan, Mataram City, West Nusa Tenggara, implementation time is March 2023.

The data analysis techniques used in research on the application of the Problem Based Learning (PBL) learning model can be described as follows: 1. Observation Data, Student activity data is analyzed by calculating the average observation score and determining the observation score category based on the range of score categories (Dimyati & Mudjiono, 2015). The observation sheet consists of 5 aspects of observation and measurement of the student activity assessment scale carried out by the teacher between 1 and 4.

Table 1. Aspects and indicators of student learning activeness

Aspects	Indicators
Learning activeness	A. Student Attention
	B. Courage to have an opinion
	C. Respect Opinions
	D. Execution of Duties
	E. Courage to Answer

Source: (Dimyati, 2009)

Filling in the student activity observation sheet is carried out by the observer observing the student's activity in the learning process according to the indicators on the instrument. The scoring for each indicator depends on the intensity option chosen by the observer. The following is a scoring table for each indicator.

Table 2. Scoring of answer choices

Choice	Score
Often	4
Sometimes	3
Seldom	2
Never	1

Data Analysis Methods, namely Analysis of Learning Implementation and Analysis of Student Activity Sheets. The implementation of learning using a scientific approach is analyzed from the lesson plan implementation observation sheet based on the percentage calculation as follows.

$$\textit{Presentation of the implementation of the lesson plan (RPP)} = \frac{amount\ accomplished}{total\ amount} \times 100$$

A value of 1 is given if the mark (√) on the RPP implementation sheet is given in the 'Yes' column, while a value of 0 is given if the mark (√) is in the 'No' column. The raw data obtained is described using a formulation according to the 2013 Curriculum Implementation Training Module as follows.

Table 3. Formulation of RPP implementation value indicators according to the 2013 curriculum implementation training module

RPP Implementation Category	Interpretation
Very good	$90 < x \leq 100$
Good	$80 < x \leq 90$
Good Enough	$70 < x \leq 80$
Not enough	$x < 70$

Analysis of Student Activity Sheets. The activity observation sheet was filled in by the observer when observing students' activities in class when the researcher taught using a scientific approach. Analysis of observation data is described in the following formula.

$$activeness\ percentage = \frac{a}{n \times b} \times 100$$

Information:
a = Number of indicators of student activity that appear
n = number of students
b = total number of indicators

The percentage of student learning activeness obtained using the formula above is calculated for each cycle and then compared to determine changes in the form of an increase or decrease in learning activity between each cycle. After assessing the percentage of learning activeness of all students, to find out the category of student learning activeness in the categories of poor, sufficient, good or very good in each cycle, a table of activeness criteria is used as in the table below.

Table 4. Activeness criteria

Percentage of learning activeness	Criteria
80 – 100%	Very good
66 – 79%	Good
56 – 65%	Enough
40 – 55%	Not enough

RESULTS AND DISCUSSION

Based on the results of observations regarding student activity in Ecosystem material in class X IPS 5 SMAN 7 Mataram, the following data was obtained.

Table 5. Student learning activities using the PBL model cycle I

No	Category	Number of students	Percentage
1	Very active	8	25
2	Active	6	19
3	Less active	18	56

The category of active students (Tabel 5) consists of very active reaching 25%, active as much as 19%, and data obtained for students who are less active is 56%. Based on the results of observations regarding student activity in Ecosystem material in class X IPS 5 SMAN 7 Mataram, the following data was obtained.

Table 6. Student learning activities using the PBL model cycle II

No	Category	Number of students	Percentage
1	Very active	18	56
2	Active	3	9.5
3	Less active	11	34.5

The active student category consists of very active reaching 56%, active 9.5, and less active students obtained data of 34.5%. This data shows that there has been an increase in student activity, but has not yet demonstrated the achievement of the specified success indicators. Based on the results of observations regarding student activity in Ecosystem material in Class X IPS 5 SMAN 7 Mataram, the following data was obtained.

Table 7. Student learning activities using the PBL model cycle III

No	Category	Number of students	Percentage
1	Very active	23	84
2	Active	7	9.37
3	Less active	2	6.25

The active student category consisted of very active reaching 84%, active 9.37, and less active data obtained at 6.25%. In cycle III there was a positive change in activity and it was satisfactory. This achievement has fulfilled the targeted activity expectations of more than 70%. Based on the results of observations and data analysis regarding student activity in Ecosystem learning, the following graph was obtained.

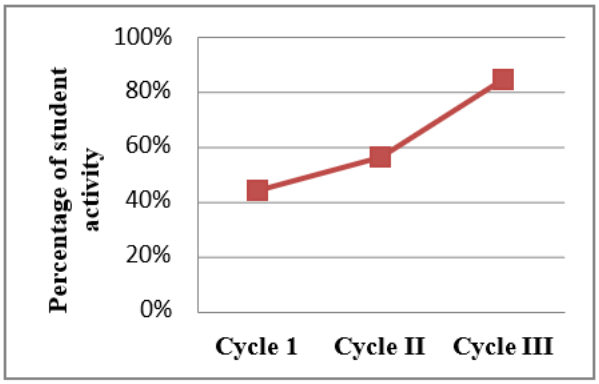

Figure 1. Graph of increase in student learning activities

Based on the results of observation and data analysis, it is known that the percentage of student activity in cycle I was 40% or in the Poor category and in cycle II the percentage of student activity was 56% or in the sufficient category and in cycle III the percentage of student activity was 84% or in the very good category. From the results of these observations it can be seen that the percentage of student activity from cycle I to cycle III has increased by 44%. The percentage of student activity in the graph, both cycle I and cycle III, was obtained through observation of the indicator aspect (a total of 5 indicators).

In cycle I, it was found that the percentage of students' active level in the learning process was 44% or in the Less category. The level of student activity in cycle I still has not reached the specified indicators of success, namely the percentage of student activity of at least 70% or in the good category. Based on the failure to achieve the success indicators, identification was then carried out and several causes of failure to achieve the success indicators were found, namely as follows. 1) the teacher does not ask students to ask questions, comment or provide feedback when presenting the results of the discussion. This causes the active indicator of aspect E, namely students answering questions, to appear less frequently. It is very possible for the E aspect indicators to appear with high frequency at the question and answer stage while this stage has not been implemented in cycle I. 2) the discussion process is less effective because students are busy themselves and do not pay attention to their tasks, causing aspect D, namely students carrying out their tasks, to appear very minimally.

Based on the identification results regarding the causes of not achieving the success indicators above, a corrective solution was obtained to increase student activity in cycle II as follows. 1) carry out a question and answer process so that student activity in aspect E can increase. 2) increase the effectiveness of group discussions by providing worksheets to

each student. In this way, it is hoped that aspect D, namely the execution of duties, can improve. In cycle II, it was found that the percentage of student activity in the learning process was 56% or in the sufficient category. The success indicator determined for student activity is a minimum percentage of student activity of 70%. This means that student activity in cycle II has not yet reached the specified indicators of success. In cycle III, it was found that the percentage of student activity in the learning process was 84% or in the very good category. The success indicator determined for student activity is a minimum percentage of student activity of 70%. This means that student activity in cycle III has reached the specified indicators of success

Several things that cause success indicators for student activity to be achieved are as follows. 1) holding a question and answer session. This causes students' activeness in answering questions to increase. 2) with controlled discussion conditions, the discussion becomes conducive, students discuss with worksheets in their hands. This causes many students to express opinions about the discussion material, either when in groups or when it is presented in front of the class. This is in accordance with (Trianto, 2009), stating that the existence of activities that make students active in learning will create a high sense of curiosity. In this case, it will definitely have an impact on student learning achievement. In this implementation, students will be given a student activity sheet (LKPD), wherein the LKPD there are problems that students will seek the truth of by discussing with a group of friends and making students feel challenged to gather information.

The PBL learning model is a form of learning that requires students to learn independently with their groups or individually in solving problems presented by teachers who use several teaching methods, including lecture methods, group discussions, class discussions, questions and answers, and assignments. This is in line with the statement that students who work together to work on questions in groups are very helpful, they will realize that they have strengths and weaknesses and help each other (Sani, 2016). Student activity in the learning process influences student learning achievement. Student activity is influenced by the application of the PBL model which can attract students. Interesting learning will make students participate in learning happily and prevent students from getting bored (Yana et al., 2021).

CONCLUSION

Based on the results of the study, it can be concluded that the implementation of problem-based learning in the learning process in the Biology subject of Ecosystem Material class X IPS 5 SMAN 7 Mataram can increase the activity of the student learning process so that it can overcome the problems at SMAN 7 Mataram in the form of low student learning activeness.

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