International Journal Multidisciplinary

Volume 1 Nomor 3 2024
E-ISSN: 3031-9870
https://journal.antispublisher.com/index.php/ijmi

THE EFFECT OF OUTDOOR LEARNING-BASED PROBLEM-BASED LEARNING MODEL ON LEARNING OUTCOMES IN TERMS OF STUDENT ACTIVITY IN ECOSYSTEM MATERIAL CLASS VII MTS NEGERI 4 BOJONEGORO

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Abstract

This study aims to determine the effect of outdoor learning-based problem-based learning model on student learning outcomes in terms of student activity in class VII ecosystem material at MTs Negeri 4 Bojonegoro. The research design in this study used Pre-test Post-test Control Groub Design using two classes, namely the experimental class and the control class. The sampling technique used Simple Random Sampling. The samples used were class VII E as the experimental class and class VII F as the control class. The data collection technique used test questions consisting of 10 items in the form of descriptions to measure student learning outcomes and student activity observations consisting of 15 statements with yes and no answers. Data analysis techniques use pre-requisite tests in the form of validity, reliability, normality and homogeneity tests while hypothesis testing uses one way anava test. The results obtained from this study are the average post-test results of the experimental class of 80.29 and the control class of 77.10 which can be concluded that the increase in student learning outcomes using the Outdoor Learning-based Problem Based Learning model is better than the indoor Problem Based Learning model.

Keywords: Effect of Problem Based Learning, Outdoor Learning, Learning Outcomes

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Introduction

Education is a very important component in developing the quality and character of a person. Education does not only include teaching specific skills, but also something that cannot be seen but is more profound, namely a conscious and planned effort to create a pleasant learning and learning atmosphere so that students actively develop their potential to have the skills needed by themselves and society. Ki Hajar Dewantara, the Founder of Indonesian National Education, defines education as a demand in the life of growing children. The quality of students can be seen through student learning outcomes.

Learning outcomes are an indicator of learning achievement in understanding the concepts taught in the classroom which are given in the form of scores from the

acquisition of test results in certain lessons. According to [1] learning outcomes are basically changes in a person's behavior as a sign of the results of a learning process. The changes in question can be in the form of attitudes, skills, knowledge which are usually categorized into values or numbers or letters that have been categorized according to criteria. These learning outcomes can provide information related to the success of learning for both teachers and students. Good learning outcomes will be achieved if the learning process is well structured.

Based on direct observation at school. Student learning outcomes at MTsN 4 Bojonegoro are classified as below average with an average score of 42 less than the KKM score of 75. Where this can be caused by students who have a lack of understanding of the material presented. There are several factors that affect student learning outcomes, namely internal factors and external factors, one of the external factors that affect learning outcomes includes models and methods in teaching. Based on observations at school. Many teachers at MTs Negeri 4 Bojonegoro still use the lecture method so that students only listen, this can make students passive and student learning outcomes become low. In addition, in a brief interview many students said that students consider science as learning that is very difficult for them to understand. This can also be a problem that must be resolved. The Problem Based Learning model is one of the problem-based models that can be used as a solution to improve learning outcomes.

Science learning itself is learning that focuses on material that has a relationship to nature which is divided into physics, chemistry, and biology. This broad scope of material makes students think that science learning is very difficult to understand. Not only the wide coverage of material, but there are other obstacles that cause science learning to still be considered difficult, namely due to the course of learning that has not made students feel active and creative. Science learning that still uses conventional models with more teacher-centered makes knowledge and material sources centered in one direction, namely explanations from the teacher. This emptiness causes students to be less encouraged to think and move. The activities that should exist in science learning are active in asking and answering questions, active in expressing opinions, and active in completing tasks. From the results of a brief interview with a science teacher at MTsN 4 Bojonegoro, when learning is carried out in class, students tend to play alone and do not pay attention to instructions from the teacher. This is what causes learning to be less effective. As a result, learning outcomes are quite low. If examined more deeply, high learning activity can affect the learning value that students will achieve. In learning, activity is an important role because learning is actually an action. There is no learning if there is no activity [2]. The way that can minimize or overcome this is by applying a learning model that makes students active in the course of a lesson. Group learning is one way for this. The groups that are made are an effort for students to have a sense of competition with other groups in order to activate and improve science learning outcomes. The model in question is the Problem Based Learning learning model.

Problem-based learning is a learning model that encourages students to work together in groups to solve problems that commonly occur in the real world. This model also ties students to their curiosity so that they can create their own learning models [3].

Problem-based learning is a learning model that organizes learning around questions and problems. This model uses real-life, real-world situations to encourage students to investigate. In addition, this model avoids simple answers and allows a wide variety of solutions to the situation so that it can help improve student learning outcomes.

Based on the above opinions, it can be concluded that the Problem Based Learning (PBL) model is a learning model that uses real-world problems as a starting point to enable students to gain important knowledge and concepts from the learning material they have previously learned [4]. From the explanation above, apart from using learning models, methods can also play an important role in learning. Basically, the Problem Based Learning model is identical to group division which requires students to work together. From the results that researchers observed during the PPL at the school, when students were divided into groups in class students tended to be crowded, some students were not interested in indoor activities, and did not do their obligations on assignments. Passive students only see without doing practicum and only active students do practicum so that the right method is needed to make all students participate actively in learning activities. In order for students who are bored and not interested in indoor learning to be active during learning, teachers can use outdoor learning methods with planned procedures so that they can still be well organized by the teacher. There are several learning methods that can be used One of them that researchers use is the Outdoor Learning method.

The outdoor learning method is a learning method that is carried out outdoors by utilizing the surrounding environment (Husamah, 2018). This outdoor learning method provides opportunities for students to learn and interact directly with the environment. Students will also be directed to do activities that can lead them to changes in the environment, including in learning ecosystem material. Ecosystem material itself is one of the materials taught in class VII MTsN 4 Bojonegoro. This material studies the unity of interactions between organisms and their environment. All elements of the environment interact with each other and form a complete ecosystem. Ecosystems consist of each component of the biosystem. Involves mutual interactions between organisms and their physical environment. According to students, ecosystem material is difficult to understand because there is no direct observation.

Through the Outdoor Learning method, students will be invited to carry out a learning activity that is carried out outside the classroom, so that it can provide opportunities for students to observe directly. Outdoor learning can improve students' understanding of the material being studied, because students can see and observe directly the object being studied, and ultimately student learning outcomes are better [5].

Through this Outdoor Learning method, students will be invited to carry out a learning activity that is carried out outside the classroom, so as to provide opportunities for students to observe directly. Outdoor learning can increase students' understanding of the material being studied, because students can see and observe directly the object being studied, and ultimately student learning outcomes are better [5].

Therefore, this study aims to determine how the effect of the Problem Based Learning model based on Outdoor Learning on student learning outcomes on ecosystem material at MTsN 4 Bojonegoro class VII.

Methods

This research was conducted at MTs Negeri 4 Bojonegoro which is located at Jl. Ar Hakim 50a Ngraho, Ngraho village, Ngraho sub-district, Bojonegoro district, prov. East Java. The implementation of this research was carried out in April 2024 academic year. The research design used is Pretest Postest Control Group Design, as for the research design according to (Sugiyono, 2017) as follows:

Table 1. Research Design

Class	***Pretest***	**Treatment**	***Posttest***
Experiment	O_{1E}	X	O_{2E}
Control	O_{1K}	Y	O_{2K}

Description:

O1E: Pretest in Experiment class

O1K : Pretest on Control class

X : Treatment with Outdoor Learning-based PBL model

Y : Treatment with PBL model

O2E: Posttest on Experiment class

O2K : Posttest on Control class

The population in this study, namely, students of MTs Negeri 4 Bojonegoro class VII and the samples used in this study were students of class VII E and VII F. In the study using two classes, namely the experimental class and the control class. The experimental class in this study is class VII E and the control class in this study is class VII F. The sampling technique used in this study is the Random Sampling technique or random sampling without looking at the equation in the population itself.

Data collection techniques in this study used observation techniques and tests to measure student learning outcomes. Observations were made to determine the responsiveness of student activities regarding the learning experience using PBL based on Outdoor Learning. The student learning outcomes test given by the teacher is a written test that is in accordance with the Bloom taxonomy learning outcomes indicators C1-C6 on ecosystem material with questions in the form of descriptions. While the student activity observation sheet is a statement related to student activities in the learning process in accordance with learning activity indicators, namely 1) Listening; 2) Looking; 3) Feeling, smelling, and tasting; 4) Writing or taking notes; 5) Reading; 6) Making an overview or taking notes; 7) Observing tables; 8) Compiling papers or working papers; 9) Remembering; 10) Thinking; and 11) Exercise or practice with learning experience using Problem Based Learning model based on Outdoor Learning. The instruments used in this study were learning outcome tests and student activity observation sheets. The student learning outcomes test given in the form of questions in the form of descriptions with a total of 10 items tested for validity and reliability. While the student activity observation sheet is a statement of student activity activities during learning filled in by researchers in the form of statements with answers yes or no with a

total of 15 statements that have been validated. The data collection technique uses Validity Test, Normality Test, Homogeneity Test, and Anava Test using SPSS 25.

Results and Discussion

This research was conducted from April 2 to 9, 2024. At MTsN 4 Bojoegoro by using two classes as research samples. The two classes consisted of VII E and VII F with 31 and 32 students respectively from a population of 207 students. The treatment given to class VII E as the experimental class and class VII F as the control class will be different, the experimental class will be given treatment using the Outdoor Learning-based Problem Based Learning model while the control class is given treatment using the Problem Based Learning model only. Then data on the results of the Pretests and Posttests in the two classes will be obtained in the form of a description question of 10 questions. The following table presents the results of descriptive statistical tests related to Pretest and Posttest scores.

Table 2. Descriptive Statistical Test Results

Statistik Deskriptif					
	N	Minimum	Maximum	Mean	Std. Deviation
Pretest Eksperimen	31	42	72	55,35	8,09
Pretest Kontrol	32	40	62	54,39	6,34
Posttest Eksperimen	31	74	88	80,29	4,42
Posttest Kontrol	32	70	85	77,10	4,42
Valid N (Listwise)	32				

From the descriptive statistical test data above, it can be seen that the learning outcomes in the experimental and control classes with Pretest data in the experimental class with a total of 31 students obtained the highest score (Max) 72, the lowest score (Min) 42, the average (Mean) 55.35, and standard deviation 8.09. While after being given treatment using the Outdoor Learning-based Problem Based Learning model, the posttest data in the experimental class with a total of 31 students obtained the highest score (Max) 88, the lowest score (Min) 74, the average (Mean) 80.29, and the standard deviation 4.42. While the data in the control class obtained Pretest results with a total of 32 students obtained the highest score (Max) 62, the lowest score (Min) 40, average (Mean) 50.39, and standard deviation 6.34. Meanwhile, the Posttest results of the control class with 32 students obtained the highest score (Max) 85, the lowest score (Min) 70, the average (Mean) 77.10, and the standard deviation 4.42. Based on the results above, it can be seen that experimental class students experienced an increase in the average score of learning outcomes of 24.94. While the control class students experienced an average increase of 22.71.

The normality test in this study used Kolmogorof-Smirnof with the help of SPSS 25. The following are the results of the normality test.

Table 3. Tests of Normality

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	class	Statistic	df	Sig.	Statistic	df	Sig.
pretets	experimental class	,105	31	,200*	,968	31	,463
	control class	,117	32	,200*	,953	32	,176
posttets	experimental class	,211	31	,031	,893	31	,005
	control class	,139	32	,117	,929	32	,037

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Based on the table above, it can be seen that both data have a significance value of the Pretest and Posttest results in the experimental class of 0.200 and 0.031 while the Pretest and Posttest results in the control class are 0.200 and 0.117. This shows that the Pretest and Posttest results have a sig value. ≥ 0.05 on Kolmogorov-Smirnov as the level of significance. So it can be said that the values of the two classes are normally distributed.

The results of the homogeneity test in this study were carried out to determine whether the data were homogeneous or not with the help of the SPSS 25 application. The results of the homogeneity test can be seen in the following table.

Table 4. Test of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
Pretetst	Based on Mean	0,378	2	60	0,687
	Based on Median	0,383	2	60	0,683
	Based on Median and with adjusted df	0,383	2	56,294	0,683
	Based on trimmed mean	0,418	2	60	0,660
Posttest	Based on Mean	0,122	2	60	0,885
	Based on Median	0,079	2	60	0,924
	Based on Median and with adjusted df	0,079	2	59,412	0,924
	Based on trimmed mean	0,145	2	60	0,865

Based on the table above, it can be seen that both data have a significance value of the Pretest results in the experimental class and control class of 0.687, while the Posttest results in the experimental class and control class are 0.865. This can show that the Pretest and Posttest results have a sig value. ≥ 0.05 as the significance level. So it can be said that both classes have homogeneous or equal variants. The results of the one-way anava test are as follows.

Tabel 5.
ANOVA Test

		Sum of Squares	df	Mean Square	F	Sig.
Pretetst	Between Groups	194,502	2	97,251	1,680	0,195
	Within Groups	3472,578	60	57,876		
	Total	3667,079	62			
Posttest	Between Groups	61,257	2	30,629	1,403	0,254
	Within Groups	1309,600	60	21,827		
	Total	1370,857	62			

Based on the results of the table above, student learning outcomes in ecosystem material can be seen that the significance level is 0.254> 0.05, which means H0 is rejected and Ha is accepted. Thus it can be concluded that the average student learning outcomes in both classes have an influence on student learning outcomes in terms of student activity on ecosystem material in class VII MTs Negeri 4 Bojonegoro.

Conclusion

Based on the research results above, it can be concluded that the Problem Based Learning model based on Outdoor Learning has an effect on student learning outcomes. This is proven based on the results of hypothesis testing using Anava. The Anava test results show a significance value of 0.254> 0.05 where the sig. value is greater than 5% which means this indicates that H0 is rejected and Ha is accepted. Ha in this study is that there is an effect of the Problem Based Learning model based on Outdoor Learning on learning outcomes in terms of student activity on ecosystem material in class VII MTs Negeri 4 Bojonegoro.

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