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The Influence of The Problem Based Learning Model on The Learning Outcomes of Class Iv Students of SD 3 Kalirejo on Living Creatures and Their Environment

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Abstract: This research aims to determine whether there is an influence of the Problem Based Learning model on the learning outcomes of class IV students at SD 3 Kalirejo regarding living things and their environment. The type of research used in this research is pre-experimental research with a one group pre-test-posttest design. The sample used in this research was one class consisting of 20 students in class IV at SD 3 Kalirejo. The data collection uses pre-test and post-test question instruments. The technique used to analyze the data uses a paired sample t test with the help of SPSS 22. The test results show a sig value. (2-tailed) of 0.000. The significance result is <0.05, which means that H0 is rejected, and Ha is accepted. It can be concluded that there is a difference between the average students' pre-test and post-test scores. This shows that the problem-based learning model has a significant influence on the learning outcomes of class IV students at SD 3 Kalirejo regarding living things and their environment.

Keywords: Problem Based Learning, Learning Outcomes, Education

1. Introduction

Education is a path needed by humans to change themselves into better humans, education must be taken by someone who wants to change themselves into a better space. According to Lamichhane (2018) Education is the process of acquiring knowledge, skills, values, beliefs and habits, which enable individuals to control their environment and fulfill their possibilities. Meanwhile, Sharma & Ankit (2023) view that education can change a person's way of life, help them choose the right solution to problems, and increase their intelligence and reasoning capacity. Education is a process of personality formation based on the assimilation of information, skills, values, socio-cultural practices, and professional competencies, transforming latent potential into abilities (Vladimir, 2018).

From this statement it can be concluded that education is a process that can be undertaken by someone to obtain knowledge and skills that can change their life into a better life by studying education itself. Education is very important for an educator in providing a good learning process. Education is very important in increasing the knowledge of the nation's children, for this reason teachers are required to create creative and innovative learning conditions to attract students' interest and enthusiasm in the teaching and learning process so that they can improve student learning outcomes (Afisa et al., 2023).

Learning outcomes are abilities that are acquired and obtained by students after going through the learning process (Nainggolan et al., 2022:2). According to Damayanti, (2022: 101) Learning outcomes are a form of achievement of the process that has been passed during learning. Learning outcomes will be equivalent to the process that students go through, which is expected to lead to a better direction. Apart from that, according to Sidabutar (2020: 23) explains that learning outcomes are the skills, attitudes and skills that students acquire after they receive treatment given by the teacher so that they can construct that knowledge in everyday life.

From the explanations of several experts above, it can be concluded that learning outcomes are the real results of a learning process that has been experienced by students. This process will determine how good or how bad the learning outcomes have been achieved by students. Thus, this learning outcome is a reflection of the efforts and investment of

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students while undergoing and following a learning process, which is expected to lead to better progress and improvement in various aspects of life.

According to Moore (Ricardo & Meilani, 2017), there are three domains of learning outcome indicators, namely: the cognitive domain, the effective domain, and the psychomotor domain. The learning outcome indicators according to Straus, Tetroe, & Graham (Ricardo & Meilani, 2017) are: 1. The cognitive domain focuses on how students gain academic knowledge through learning methods and conveying information. 2. The effective domain is related to attitudes, values, beliefs which play an important role in changing behavior. 3. Psychomotor domain, skills and self-development which are used in skill performance and practice in developing skill mastery.

From the description above, it can be concluded that learning outcome indicators cover three main domains: cognitive, effective, and psychomotor. 1. The cognitive domain emphasizes the acquisition of academic knowledge through learning methods and conveying information. 2. The effective domain pays attention to attitudes, values and beliefs that influence changes in student behavior. Meanwhile, 3. the psychomotor domain highlights skill development and self-mastery in practical performance and skill development.

The results of initial observations were carried out by researchers at SD 3 Kalirejo on Saturday, March 16. Researchers found a problem that occurred during the learning process, namely during the learning process carried out by science subject teachers, in providing teaching, the learning model applied still tended to be conventional, namely using lecture and question and answer methods, without using variations in adequate learning such as using innovative learning models. As a result of conventional learning, learning becomes less interesting for students, which can be seen from some students who look sleepy or even fall asleep during learning. This indicates a lack of student involvement in the learning process.

There is a need for learning innovation as a solution to improve the quality of learning (Firdayanti et al., 2021). Therefore, a teacher must be able to choose a learning model that makes students active and creative, namely by using an effective learning model in teaching to maintain student interest and involvement during learning. Selection of models in learning needs to be done as an effort to attract students' interest in learning, because the variety of models used by a teacher will make the presentation of material in learning more interesting (Zarita et al., 2015: 98). Especially for science learning, science learning requires students to understand in detail because science learning is a learning that connects the environment around students with the existing material. Science is one of the main important subjects in the curriculum in Indonesia, including at elementary school level. Science lessons are subjects that are often considered too difficult for most students, whether from elementary school level to middle school level (Rifai, 2020).

The problem-based learning model is a learning model that can be used in learning. This learning model is a learning model that involves students in learning. The problem-based learning model is learning that is delivered by presenting a problem, asking questions, facilitating investigations, and opening dialogue (Rahmatia & Fitria, 2020: 2686). According to (Rifai, 2020: 2141) the problem-based learning (PBL) learning model is a learning approach that emphasizes giving real problems to students to be resolved and resolved both individually and in groups, the aim is to develop the critical thinking skills of the participants. educate. The Problem Based Learning model is a learning model that can enable students to understand the material through discoveries or be guided by problems so that students are faced with a problem to be solved during the learning process (Annisa et al., 2021). Meanwhile, according to Nurul Hikmah & Eka Putri Atjo (2023), the Problem Based Learning (PBL) learning model is a model of learning that will expose students to problems related to the real world. Apart from that, in its application the problem-based learning model has steps in its application as stated by Sani (2015) Mintarsih and Termedi (2017), including: 1) Orienting students to problems, 2) Orienting students to learn, 3) Guiding individual investigations or groups, 4) Developing and presenting work results, 5) Analyzing and evaluating the problem-solving process.

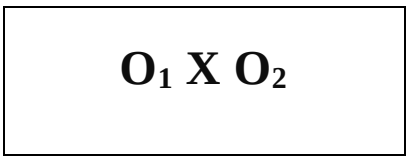
From the explanation of the problem-based learning model from the experts above, it can be concluded that the problem-based learning model is a learning model that involves students in a problem and encourages them to be able to solve existing problems. This learning model is very helpful in creating learning that will involve students in learning, which can improve their critical thinking processes so that they can improve their learning outcomes.

This is based on previous research conducted by Murdani et al., (2022) with the title "The Influence of the Problem Based Learning Model and Motivation on Student Learning Outcomes." The results of this research indicate that the use of the Problem Based Learning model and motivation can improve student learning outcomes. Apart from that, research from Ade Dian Silvia et al., (2023) with the title "The Influence of the Problem Based Learning Model on Science Learning Outcomes for Class IV Students at Gayamsari 02 State Elementary School" shows the findings from the research that has been carried out, namely the average pretest score. of 58.6 and a posttest score of 80.68. The findings of this research support the conclusion that Problem Based Learning is an effective approach in improving student learning in the field of science. Meanwhile, research conducted by Syahrir D. et al., (2023) with the research title "Improving Social Studies Learning Outcomes for Elementary School Students in Each Class Using the Problem Based Learning Model" resulted in results showing that the problem-based learning model was able to improve learning outcomes. students from a low of 8.9% to an average increase of 30%. This shows that this problem-based learning model is very effective in improving social studies learning outcomes for elementary school students.

Based on the explanation in previous research above, it can be concluded that the problem-based learning model can improve student learning outcomes. This problem-based learning model is considered very suitable and effective for use in efforts to improve and improve student learning outcomes, especially in Natural Sciences subjects.
As for the background description above, researchers are interested in conducting research on the influence of the problem-based learning model on student learning outcomes with the title "The Influence of the Problem Based Learning Model on the Learning Outcomes of Class IV Students at SD 3 Kalirejo on Living Creatures and the Environment."

2. Methodology

The type used in this research is experimental research, namely research carried out to find the effect of certain treatments on others under controlled conditions (Nurilah et al., 2023). This research was carried out at SD 3 Kalirejo, Undaan District, Kudus Regency. The sample in this study was all fourth-grade students at SD 3 Kalirejo, totaling 22 students with 7 male students and 15 female students.
The form of experiment used in this research is Pre-Experimental with a One Group Pretest-Posttest Design. "One group pretest-posttest design is an experiment that is applied to one group only without a comparison group" (Nuryanti, 2019: 44). The following is a picture of the One Group Pretest-Posttest Design research design.



O1 = pretest action (before given treatment)

O2 = posttest action (after given treatment)

X = treatment given

Figure 1: One group pretest-posttest design modle

In this study, research subjects will be given a pretest first before being given treatment (O1), then the subjects will be given treatment or treatment (X). After being given treatment, a post test or final test is given to determine the effects of the treatment (O2).

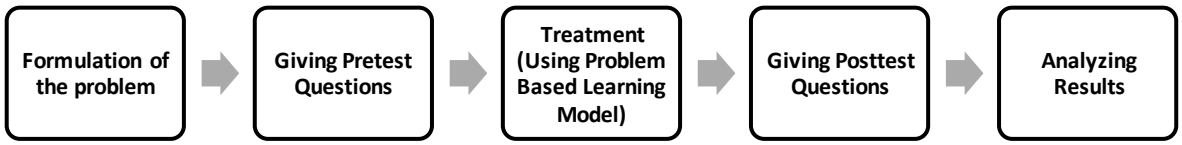


Figure 2: Research Procedure

The data analysis technique used in this research is to carry out a Normality Test first to find out whether the data obtained is normally distributed or not. After carrying out the Normality Test, the test results show that the data obtained shows normal data, then the next step will be continued with the Paired T Test which aims to determine the difference in average results before and after being given treatment using the problem-based learning model. The hypothesis in this research is whether there are differences in student learning outcomes or not after implementing the problem-based learning model.

3. Results And Discussion

This research aims to determine whether there is an influence of the Problem Based Learning model on the learning outcomes of class IV students at SD 3 Kalirejo regarding living things and their environment. The data from this research was obtained from test results consisting of multiple-choice questions with a total of 20 questions, which were carried out at the beginning (pretest) and the end (posttest) after the researcher had treated the experimental class by providing a Problem Based Learning learning model. The following are details of the research data obtained and the researchers will describe them as follows.

3.1 The Meaning of The Calculation Results

The following are the results of calculating the mean from the pretest and posttest in science learning in class IV which can be seen in table 1.

Table 1: Mean Calculation Results

	PRE-TEST	POST TEST
Mean	56.5000	69.5000
N	20	20
Std. Deviation	8.75094	6.46855

It can be seen from table 1 above, showing that the results of the pre-test data analysis produced a mean = 56.5000 and a standard deviation that showed a figure of 8.75094. Meanwhile, the results obtained from the post-test were with a mean = 69.5000 and a standard deviation which showed a figure of 6.46855. This shows that the average value produced in the pre-test and post-test can be said to have changed. It can be concluded that there is an influence of the Problem Based Learning learning model on the learning outcomes of class IV students at SD 3 Kalirejo on the subject of living things and their environment.

3.2 Data normality

Next, the researcher continued by carrying out a prerequisite test, namely by carrying out a normality test using the Shapiro-wilk test because the Shapiro-wilk test was carried out on small samples, namely on samples with a total of under 30 samples (Ine Rahayu Purnamaningsih, 2021). This normality test is carried out with the aim of finding out whether the data that has been collected is normally distributed or not. The criteria for this normality test are if the significance value is > 0.05 then the data that has been collected can be said to be normal, whereas if the significance value is <0.05 then the data is considered abnormal data.

Table 2: Test Results Data Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
PRE-TEST	.168	20	.141	.971	20	.766
POST TEST	.231	20	.007	.931	20	.163

Based on table 2, the normality test results above show that the significance value in the pre-test is 0.766 and the significance value in the post-test is 0.163. These results indicate that the data above can be said to be normally distributed. If the significance value is greater than 0.05 then the data is normally distributed. In the normality test results, the pre-test value was 0.766 > 0.05 and the post-test value was 0.163 > 0.05.

3.3 Paired T Test

As for the paired sample t test, the basis for making decisions is if the sig. (2-tailed) < 0.05, then there is a significant difference between learning outcomes in pretest and posttest data, then if the sig. (2-tailed) > 0.05, so there is no significant difference between learning outcomes in pretest and posttest data.

Table 3 *Paired Sample Test*

		Paired Differences							
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	PRE-TEST - POST TEST	-13.00000	10.31095	2.30560	-17.82568	-8.17432	-5.638	19	.000

Based on table 3, the paired sample t test results show that the sig. (2-tailed) of 0.000. The significance result is <0.05, which means that there is a significant difference between learning outcomes in the pretest and posttest data. So from the table of paired sample t test results above it can be concluded that there is a difference between the average students' pre-test and post-test scores. This shows that the problem-based learning model has a significant influence on the learning outcomes of class IV students at SD 3 Kalirejo regarding living things and their environment.

4. Conclusion

The results of this research indicate that there is an influence of the Problem Based Learning model on the science learning outcomes of class IV students at SD 3 Kalirejo before and after treatment. Based on the pre-test results, namely before being given treatment, the average student score was 56.5000, which shows that the score is still below the KKM. After being given treatment, the results of the post-test scores showed an average of 69.5000, which shows an increase in scores compared to the scores before being given treatment. The difference in pre-test and post-test results reflects an increase in the average score.

Based on the results of the paired sample t-test, the significance value (2-tailed) is 0.000. Because this significance value is <0.05, then based on the decision made, namely if the sig. (2-tailed) < 0.05, then there is a significant difference between learning outcomes in pretest and posttest data, if the sig. (2-tailed) > 0.05, so there is no significant difference between learning outcomes in pretest and posttest data.

From these results it can be concluded that there is a significant difference between the average pre-test and post-test scores of students. This shows that there is a positive influence of the Problem Based Learning model on the learning outcomes of class IV students regarding living things and their environment.

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