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The Influence of PBL On Student Learning Outcomes in Social Science Subjects at Grade IV

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Abstract

The success of achieving learning outcomes according to the value of completeness in the teaching and learning process indicates that students can absorb the knowledge they have gained well. To find out that student learning outcomes are achieved optimally, it is necessary to have a learning model that can be associated with the curriculum, teachers, students, and teaching materials in the learning system that makes learning outcomes can be achieved optimally. To improve the learning outcomes of grade IV students in the Independent Curriculum Science lessons, teachers must be able to use a learning model that supports or develops 4C skills in 21st-century learning. The 4C skills in the 21st century for these students relate to the independent curriculum because the independent curriculum will adjust to 21st-century learning, and the model that can develop these 4C skills is one using the Problem-Based Learning (PBL) learning model. This study aims to determine the results of the influence of the Problem-Based Learning (PBL) model on student learning outcomes in social science subjects at grade IV of SDN PARI 2. This type of research method uses a quantitative approach, with a Pre-Experimental design in the form of One Group Pretest-Posttest; this design form has one group. This study significantly influences student learning outcomes before and after being given treatment. This is shown based on the data from the paired sample t-test results on the data of the pretest and post-test results; it can be seen that the average score (mean) of 58,750 was obtained. The standard deviation is 13,229, and Sig. (2-tailed) is 0.000, then Ho is rejected, and Ha is accepted.

Keywords: Influence, PBL Learning Model, learning outcomes, IPAS

INTRODUCTION

To achieve student learning outcomes in science lessons, a teacher must be able to create a good learning atmosphere and learning process for students so that student learning outcomes can be achieved optimally. This determines how a teacher in the teaching and learning process knows the measuring tools/indicators that students can understand the material taught well. To improve the learning outcomes of grade IV students in science lessons, teachers must be able to use a learning model that supports or develops 4C skills in 21st-century learning. 21st-century learning itself has its own characteristics and uniqueness, where learning carried out in educational institutions must focus on 4C skills. These students' 4C skills in the 21st century are related to the independent curriculum because the independent curriculum will adjust to 21st-century learning. The model that can develop these 4C skills uses the Problem-Based Learning (PBL) learning model because in 21st-century learning, especially in the independent curriculum, students learn the material through examples, applications, and real-world experience both inside and outside the school. For these demands to be implemented as part of the implementation of the independent curriculum, it is necessary to involve the use of models in an appropriate, sustainable, and affordable manner. Based on the researcher's observation through the observation of grade IV at SDN PARI 2, this science subject was only enforced last year (2023). This is new and makes social science learning in the classroom less optimal due to the lack of teacher preparation. The learning model that is carried out is not appropriate, but it is still teacher-centred. It is hoped that applying the Problem-Based Learning model in this

learning can improve students' critical thinking skills so that 21st-century skills, a demand that children must possess, can be met.

The purpose of the problem-based learning model is to improve the ability to apply concepts to real new problems, the integration of the concept of High Order Thinking Skills (HOTs), namely for the development of critical thinking skills, problem-solving skills and actively develop the desire to learn by directing self-learning and skills. Learning independence can be developed when students collaborate to identify information, strategies, and relevant learning resources to solve problems.

Learning outcomes are the abilities that students have after they receive a learning experience in the learning process. Learning achievement is the result obtained after participating in learning activities. Learning achievement is usually expressed in numbers, symbols, letters or sentences. The learning outcomes obtained by students are different because they depend on each individual and the factors that influence them. Nurdyansyah & Fitriani (2018). In learning or instructional activities, teachers usually set learning goals. According to Sudjana (2011), learning outcomes are the abilities that students have after receiving learning experiences. In obtaining learning outcomes, each learning process has factors that impact student learning outcomes, Nabillah & Abadi (2019). Learning outcomes are a better level of mental development when compared to when they have not learned. The level of mental development refers to the types of learning outcomes, namely the cognitive, affective, and psychometric aspects of Audie (2019). Learning outcomes are the results obtained by students after they carry out learning and learning experience activities, a form of learning behavior usually manifested in the form of changes, habits, skills, attitudes, understandings and skills.

For this reason, a teacher must be able to use a learning model that supports students' 4C skills in 21st-century learning to know the learning outcomes, one of which is with the learning model (PBL). According to Rahmani *et al.* (2021), the learning model and method used by a teacher will affect the learning process carried out by students, in addition to the different characteristics of each student. Education in the 21st century is related to new problems that exist in the real world. The P.B.L. approach is concerned with using intelligence from within individuals in a group of people or environment to solve problems that are meaningful, relevant, and contextual (Rusman & Pd, 2012). According to Suyadi, the Problem-Based Learning (PBL) model is a learning model whose learning activities are centred on daily tasks or problems, relevant and presented in one context (Sari *et al.* (2020). The steps to implement the PBL method consist of five main steps in the learning process, namely: 1) Orientation of students to problems, 2) Organizing students to learn, 3) Guiding individual and group investigations, 4) Developing and presenting the results of the work, 5) Analyzing and evaluating the Mendesain (2011) problem-solving process.

Problem-Based Learning is a learning model that focuses on the root of the problem and solves the problem and a strategy that uses real-world problems as a context for students to learn about critical thinking and skills for problem-solving, as well as to acquire essential knowledge and concepts from the subject. This Problem-Based learning model will be used in social studies content science lessons in grade IV SDN PARI 2. According to Rahmani *et al.* (2021), Social Sciences (IPS) is a subject identified as a memorisation subject, considering the broad and comprehensive object of study and related to each other. Social studies is a science around us, starting from past events or events, the environment in which we live and its

implications for efforts to meet needs, interactions between individuals in a place, and many more aspects included in the study of social studies.

METHOD

This type of research method uses a quantitative approach, with a Pre-Experimental design in the form of One Group Pretest-Postest design. According to (Sugiono, 2021), the design form of One Group Pretest-Postest Design is that there is one group. In the One-Group Pretest-Posttest Design, there is a pre-test to find out the initial situation, after which a final test is given to find out the Problem-Based Learning learning model on student learning outcomes after being given treatment or treatment.

The subjects in this study are grade IV students at SDN PARI 2, Mandalawangi District, Pandeglang Regency, Semester II of the 2023/2024 school year, with a total population of 153 students and a sample of 16 students. The researcher took this place of research because grade IV of SDN PARI 2 only uses the independent curriculum and, in the learning process, still uses conventional learning, and the student learning outcome score is low. The researcher chose SDN PARI 2 as the experimental site because of the observation results based on the student's abilities obtained from the classroom teacher's explanation. The explanation obtained in the form of daily learning results of students has a value below the KKM, and the place of this research is also because, in grade IV, SDN PARI 2 only uses the independent curriculum. In the learning process, conventional learning is still used. Therefore, researchers want to try the Problem-Based Learning (PBL) learning model to increase the value of learning outcomes worldwide.

Research Design

$$O_1 \; x \; O_2$$

(Sugiyono, 2021)

In this pattern, the group is given a pre-test and a post-test, but only the post-test is treated so that the design is as follows:

Table 1. Research Design

Class	*Pre-test*	treatment	*Post-test*
IV	O_1	X	O_2

Description:
O1: Pre-test score before being given treatment
O2: Post-test score after being given treatment
X: Treatment given

Based on Table 1, the pretest and posttest results were obtained through the data collection using test instruments in the form of essay questions, totalling 5 items. The question instruments consist of natural resources in the region and various landscapes. The data obtained specifically for the data question instrument is then processed descriptively and continued with the normality and homogeneity test. Then, the data will be analyzed using the T-test with the SPSS V. 22 program. The following is descriptive data on the results of the pretest and posttest that were carried out in grade IV of SDN PARI 2

Table 3 Descriptive Statistics

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Pre Test	16	10	60	27.19	17.124
Post Test	16	70	100	85.94	12.412
Valid N (listwise)	16				

Based on Table 3 above, it can be concluded that the smallest values of the pretest and post-test are 10 and 70, while the most significant values of the pretest and post-test are 70 and 100. The standard deviation for the pretest is 17,124, while the standard deviation for the post-test is 12,412. The research of the children was continued with a normality and homogeneity test. The normality test was carried out to determine whether the data from the pretest and posttest results were normally distributed with a significance of α (0.05). The reference for decision-making is that if the value of Sig. > is 0.05, then H0 is accepted, and the data is usually distributed, while if the value of Sig. < is 0.05, then Ha is rejected, and the data is abnormally distributed.

Table 4 Results of the Normality Test

Tests of Normality				
		Kolmogorov-Smirnov[a]		
	Class IV	Statistic	Df	Sig.
Student learning outcomes	Pre Test	.176	16	.200*
	Pos Test	.184	16	.151

Based on Table 4, the normality test data for all pretest and post-test data shows that indigo sig. Kolmogorov-Smirnov is 0.200 > 0.05, so the conclusion of this distribution is declared normal so that researchers can continue the homogeneity test. The homogeneity test is used to determine whether several population variants are identical. The similarity test of two variances is used to test whether the data distribution is homogeneous by comparing the two variances. If two or more data groups have the same variance, then the homogeneity test does not need to be carried out anymore because the data is already considered homogeneous. The basis for the decision to take is if the Significance value (Sig) is Based on Mean > 0.05, then the data is homogeneous. At the same time, if the Significance (Sig) value is Based on Mean < 0.05, then the research data is not homogeneous.

The homogeneity test data shows that the value of sig is known. Based on the Mean 3.06 > 0.05, it can be concluded that the data variants are the same or homogeneous. Furthermore, in the hypothesis test, the researcher used a comparative test or paired sample t-test, which aimed to see if there was an influence between the results of the pretest and post-test on the Effect of the Problem-Based Learning Learning Model on Learning Outcomes. The decision-making provision is that if the value of Sig. (2-tailed) < 0.05, then H0 is rejected, and there is an influence if the Sig. (2-tailed) value > 0.05, then Ha is accepted, and there is no influence.

Table 5. Hypothesis Test Results

Paired Samples Test									
		Paired Differences							
				Std. Error Mean	95% Confidence Interval of the Difference				Sig. (2-tailed)
		Mean	Std. Deviation		Lower	Upper	t	df	
Pair 1	Pre Test - Pos Test	-58.750	13.229	3.307	-65.799	-51.701	-17.764	15	.000

From the table above, the researcher can conclude that the hypothesis test uses the t-test. (2 tailed) is 0.000 < 0.005, then Ho is rejected, and Ha is accepted; the conclusion is that there is a significant influence before and after the problem-based learning model is carried out, judging from the learning outcomes of students in class IV IPAS learning Semester II of the 2023/2024 Academic Year.

RESULTS AND DISCUSSION

The following are the results of several percentage calculations, hypothesis tests, and t-tests to determine the Effect of Problem-Based Learning Models on Student Learning Outcomes in Social Science subjects in grade IV SDN PARI 2. This study uses the Problem-Based Learning learning model on student learning outcomes that have the following learning process:

1) Student orientation to the problem, namely at the beginning of Problem-Based Learning learning, the teacher communicates the learning objectives, builds a positive attitude towards the education, the objectives of the science class IV teaching of my Region and its Natural Resources material, namely: 1) Students can mention the natural resources in the area where 2) Students can correlate geographical influences with natural resources in their area of residence, 3) Students can name wise ways to utilize the natural resources in the area where they live.
2) Organizing students to learn on the Problem-based learning model requires teachers to develop collaboration skills among students and help them investigate problems together. Teachers also help students plan their investigation and reporting tasks. At this stage, students are divided into groups and asked to listen to the video the teacher gave to investigate the problem together.
3) Accompanying individual/group experiences, teachers will assist students in carrying out investigations individually and in groups by collecting data, explaining, and providing solutions; at this stage, teachers monitor students as they solve problems in learning.
4) The final result of the PBL learning model is developing and presenting the work, which can be reported. The final report contains information about the problem situation, the purpose of problem-solving, and alternative problem-solving, which can be written reports, computer programs, or presentations. At this stage, students present the results in the form of written reports about the natural resources sub-material obtained.
5) In analysing and evaluating the problem-solving process in this phase, the teacher guides students to help analyse and assess the students' thinking process in investigating a problem and the intellectual ability used.

After making observations based on the learning process above, the results of several percentage calculations, normality tests, t-tests and average scores to determine the influence of applying the Problem-Based Learning Learning Model on student learning outcomes in

science and science subjects. The results of the normality test are based on calculations using SPSS V. 22. Based on the significance value of the pretest, the sig value is (0.200) > 0.05 and the Posttest value, the sig. (0.151) > 0.05. Then, Ha is accepted so that the data can be distributed normally. The results of the normality test using Kolmogorov Smirnov show that the pretest and posttest values have a standard data distribution. The t-test results were used to test whether the average score before and after the treatment was given and whether there was a significant effect. Based on the count value of the SPSS result of 17,764 and table, a value of 2,131 was obtained so that the table> table, H0 was rejected, then Ha was accepted, and the result of a significant value, namely the considerable value was less than 0.05, namely Sig. (2-tailed) (0.000) < 0.05, so H0 was rejected, and then Ha was accepted, which means there was a difference before and after the treatment was given.

Based on the description of the research results described above, the research that has been carried out with the title The Influence of the Problem-Based Learning learning model on learning outcomes in Science subjects grade IV at SDN PARI 2 is said to be able to improve student learning outcomes by conducting treatment using a problem-based model. This research certainly encountered obstacles in the field; the obstacle was the absence of comparators in other classes who did not apply the Problem-Based Learning learning model in science lessons in learning. The researcher only used one class as a sample due to the limitations of students in the school. So, to overcome these obstacles, the researcher uses the One-Group Pretest-Posttest Design method, which only uses one class as a research sample.

CONCLUSION

Based on the analysis of the data that has been carried out, it can be seen that when the Problem-Based Learning (PBL) learning model is carried out, this greatly influences the learning outcomes of grade IV students at SDN PARI 2. This can be seen from the average learning outcomes of students before using the Problem-Based Learning learning model, namely the average pretest of 27.19 and the average posttest score of 85.94, as well as the data of cognitive test scores of all students reaching and exceeding KKM value. In the calculation of the hypothesis test in the paired sample t-test using SPSS V. 22, there is an influence of the Problem-Based Learning (PBL) learning model on the learning outcomes of students in science and science subjects in grade IV at SDN PARI 2 with a significance value of 0.000<0.05 sig (2-tailed), then Ha is accepted.

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