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The Impact of Problem-based Learning Models on Social Studies Learning Outcomes and Critical Thinking Skills for Fifth Grade Elementary School Students

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ABSTRAK

Keterampilan berpikir kritis diperlukan dalam pembelajaran IPS, namun faktanya keterampilan berpikir kritis siswa di sekolah dasar belum optimal, sehingga berimbas pada hasil belajar siswa di bawah KKM. Penelitian ini bertujuan untuk menganalisis pengaruh model problem-based learning terhadap hasil belajar dan keterampilan berpikir kritis siswa. Jenis peenelitian ini yaitu penelitiam kuantitatif dengan tipe quasi eksperimen dan rancanggan yang di gunakan yaitu posttest only control group design. Populasi padaa penelitian ini adalah siswa kelas V SD. Random sampling diugunakan untuk menentapkan sampel, adapun jumlah sampel secara keseluruhan yaitu 68 siswa dari dua sekolah yang berbeda. Untuk menguji hipotesis digunakan analisis anava satu jalur dan manova. Hasil pengujian menunjukkan terdapat pengaruh model probelm based learning terhadap hasil belajar IPS dan keterampilan berpikir kritis siswa. Sehingga dapat disimpulkan bahwa model problem-based learning memiliki pengaruh yang signifikan untuk meningkatkan hasil belajar IPS dan keterampilan berpikir kritis siswa dibandingkan dengan menggunakan model pembelajaran konvensieonal. Implikasi penelitian ini diharapkan guru-guru dapat mengimplementasikan model problem based learning ini pada proses pembelajaran, sehingga dapat meningkatkan kemampuan siswa dalam memahami materi pelajaran dengan mudah ,cepat selama proses pembelajaran.

ABSTRACT

Critical thinking skills are needed in social studies learning, but the fact is that students' critical thinking skills in elementary schools are not optimal, so that it has an impact on student learning outcomes under the KKM. This study aims to analyze the effect of the problem-based learning model on learning outcomes and students' critical thinking skills. This type of research is quantitative research with a quasi-experimental and the design used is posttest only control group design. The population in this study were fifth grade elementary school students. Random sampling was used to determine the sample, while the total sample size was 68 students from two different schools. To test the hypothesis, one-way ANOVA and Manova analysis were used. The test results show that there is an effect of problem-based learning on social studies learning outcomes and students' critical thinking skills. So, it can be concluded that the problem-based learning has a significant effect on improving social studies learning outcomes and students' critical thinking skills compared to using conventional learning models. The implication of this research is that teachers are expected to be able to implement this problem-based learning model in the learning process, so that it can improve students' ability to understand subject matter easily and quickly during the learning process.

1. INTRODUCTION

Indonesian students learn social studies which refers to the integrated nature of the social sciences. So, the main characteristic of the subject is the nature of integration itself. The subject of study is called IPS in Indonesia. Social studies are an integrative study of human life in various dimensions of space and time and contains various activities. It is a study that is related to social life and its environment for the sake of education and the formation of social actors (Surahman & Mukminan, 2017). Basically, social science is a human's study and the world around them. The subject of the social studies study is about the

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relationship between humans, while the background of the study is real human life. However, it should be noted that, according to their level of knowledge, elementary school students have not been able to fully understand the breadth and depth of social problems. However, they can still be introduced to these problems. Through social studies learning process, students will get knowledge, skills, attitudes, and abilities to face life with its challenges (Rahmad, 2016). So that they are expected to be able to act and think rationally in solving the social problems that they face. It is time for critical thinking skills to be implemented in Indonesia's young generation because without the ability to think critically, Indonesia's young generation tends to accept information from all directions in its entirety without carrying out careful and wise thought processes in selecting the correct and most accurate information (Jufri, 2013; Suprayitno & Wahyudi, 2020). However, it was found that 86% of students' critical thinking skills were low and were at the less skilled and unskilled category (Rasmawan, 2017). In the 21st century, students' critical thinking skills need to be developed so that students can solve real-life problems in their real life. A thought process that aims to make a rational and directed decision in doing something is also called critical thinking (Ariani, 2020; Astiwi et al., 2020). Nowadays, curriculum 2013 is implemented in elementary school but, the teacher teachers have not fully implemented the learning syntax requested by the 2013 curriculum. It is very difficult for students to understand and accept the learning given by the teacher that day (Persada et al., 2020; Sari & Yuniastuti, 2018). Because teachers are reluctant to use innovative, creative learning models, and often applies conventional learning or lectures, as well as students are given assignments to be discussed by their parents and then collected by the teacher, this causes students become less active in learning (Alita et al., 2019; Bosica et al., 2021; Suari, 2018).

Next, the students thinking skills are not optimal which can impact on learning outcomes. It was found that the students' critical thinking of the 5th grade of the 2nd cluster in Negara sub-district was not optimal. It impacts the students' score of their mid semester test, especially in learning thematic and focused on social studies subjects. In addition, based on observations and interviews conducted, it was found that the ability of students to identify, understand problems, state problems in a simple form, find solutions to the given problems and draw conclusions are still very low. These problems certainly cannot be allowed, as for ways that can be done in developing students' critical thinking skills is through the application of effective learning models. The learning model that is considered effective in overcoming these problems is by applying a problem-based learning model. The model was chosen based on the finding by previous researchers regarding the effectiveness of the effect of the problem based learning model in overcoming learning problems in which it can stimulate critical thinking skills through a problem-based learning process, It also can also improve critical thinking skills in mathematics subjects (Hasibuan, 2014; Lestari & Dharma, 2022). In addition, the problem-based learning model can have a big influence on improving student learning outcomes (Aziz et al., 2015; Wartono et al., 2018). The problem-based learning model can be categorized as a student-centered and emphasizes collaboration in solving problems given by the teacher or encountered by students in everyday life under the guidance of a teacher or tutor (Dewi & Lestari, 2020; Wijnen et al., 2017). Basically, the principle of the problem-based learning model provides problems as an initial step in the learning process. The problems presented are problems that are often encountered in everyday life, because it can give influence in improving learning outcomes or student test results (Farisi et al., 2017; Izma & Kesuma, 2019). It is the time for the teacher to take his roles as a facilitator in finding the solution from the problem given by the teacher. It can help the students to students improve lifelong learning skills in an open, rational, reflective, critical and active learning mindset (Sintadewi et al., 2020; Windari, 2017). The purpose of this study was to analyze the effect of the problem based learning model on students' social studies learning outcomes and critical thinking skills of the 5th grade elementary school students, It was expected that this learning model can effectively increase students' activeness, critical thinking and their learning outcomes in the classroom as well as outside the classroom. It is needed to prepare students in facing their future global challenges.

2. METHOD

This study was a quasi-experimental study and a post-test only control group design was used in this study. In this study, the experimental group were treated by using problem-based learning model, while the control class was not given any treatment or continued to use the conventional learning model. The design analysis in this study used a one-way multivariate analysis of variance (Manova). Then, the generalization area of objects or subjects have certain qualities and characteristics which were determined by researchers to be studied and then drawn conclusions and it was called population (Sugiyono, 2017). The population in this study was all of the 5th grade students in Cluster II, Negara Sub-district. It was about 227 students. Some of the populations were taken and considered to be representative of the entire population. It was taken by using a certain technique called sampling

technique in determining the sample in the study (Agung, 2016). Random sampling technique then used to two schools as the experimental class, namely SDN 2 Lelateng with 34 students and SDN 3 Lelateng as the control class with 34 students. The total of all sample in this study were 64 students. The scheme of this research design could be seen in Figure 1.

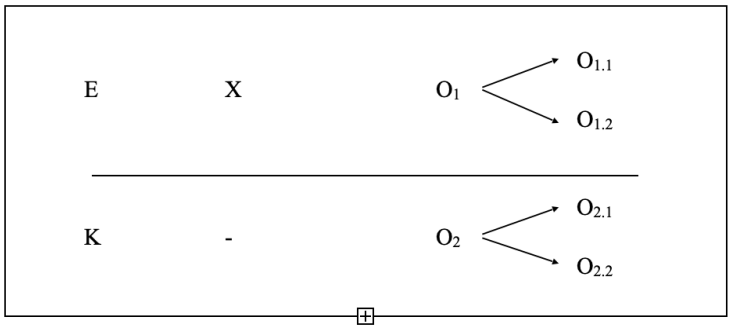

Figure 1. Research Scheme

Remarks:
E : The group of students who were taught by using problem-based learning model
K : The group of students who were taught by using conventional learning model
O1 : Post-test results of the experimental group
O1.1 : Post-test results of critical thinking skills in experimental group
O1.2 : Post-test results of learning outcomes in experimental group
O2 : Post test result of control group
O2.1 : Post test results of critical thinking skills in control group
O2.2 : Post test results of learning outcomes in control group

The instrument used in collecting data in this research was done by giving learning outcomes and critical thinking skills tests. In the preparation of learning outcomes tests was based on competencies, basic competencies and indicators contained in the curriculum. The form of the test used in the assessment of learning outcomes was a multiple-choice test with 4 answer choices, in which (1) if the answer is correct and (0) if the answer is wrong. Meanwhile to measure critical thinking skills, students were given an essay test because critical thinking skills contained analysis, synthesis, evaluation, reflection, and combinatorics indicators. Assessment ex-tended response became a rubric used to assess students' critical thinking skills. Expert judgment and instrument testing were conducted before the test as a measuring tool to get good quality. Then, the data obtained was analyzed with Anova A and Manova. Before testing the hypothesis data, assumption test was done to whether the data can be analyzed with parametric statistics or not, the assumption test includes normality test, homogeneity test of variance, linearity test and the significance of the regression direction, and test the correlation between the dependent variables.

3. RESULT AND DISCUSSION

Result

The results of descriptive research calculations (mean, median, mode, standard deviation, maximum value and minimum value) are presented in Table 1.

Table 1. Descriptive Analysis Results

		X1Y1	X1Y2	X2Y1	X2Y2
N	Valid.	34	34	34	34
	Missing.	34	34	34	34
Mean.		75.59	84.00	65.00	75.88
Median.		75.00	83.00	65.00	75.00
Mode.		70.00	77.00	70.00	73.00
Std. Deviation.		1.50	8.72	1.56	1.02
Minimum.		50.00	67.00	40.00	60.00
Maximum.		100.00	100.00	100.00	93.00

Sum.	2570.00	2856.00	2210.00	2580.00

Remarks:
X1Y1: The level of students' critical thinking skill who taught by using the problem-based learning model.
X1Y2: The students' learning outcomes who taught by using problem-based learning model.
X2Y1: The level of students' critical thinking skill who taught by using the conventional learning model.
X2Y2: The students' learning outcomes who taught by using conventional learning model.

The results of the research assumption test which include normality test, homogeneity test, and correlation test between variables.

Table 2. The Results of the Normality Test of Critical Thinking Skills

	Kolmogorov-Smirnov			Shapiro-Wilk		
	Statistic.	df.	Sig.	Statistic.	df.	Sig.
Experiment	0.146	34	0.068	0.935	34	0.056
Control	0.138	34	0.092	0.951	34	0.123

Based on the result normality test in Table 2, it was concluded that the value of critical thinking skills data of students in the experimental group and the control group was normally distributed because the value was more than 0.05.

Table 3. The Results of the Normality Test of Students' Social Studies Learning Outcomes

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic.	df.	Sig.	Statistic.	df.	Sig.
Experiment	0.113	34	0.200	0.968	34	0.378
Control	0.112	34	0.200	0.949	34	0.105

Based on the results of normality test in Table 3, it was be concluded that the data on the social studies learning outcomes of students in the experimental group and the control group were normally distributed because the value was more than 0.05.

Table 4. Homogeneity Test Results by Using Levene's

Variable.	F.	Df1.	Df2.	Sig.
Critical Thinking Skill	0.000	1	66	1000
Learning outcomes	0.1292	1	66	0.260

Based on the calculation result above, it seemed that that the variance between the experimental group and the control group was homogeneous, both critical thinking skills data and social studies learning outcomes data. After the assumption test was done, MANOVA hypothesis test was conducted to test whether there are differences in the dependent variable between different groups. It was done by using Pillai's Trace, Wilks' Lambda, Hotelling's Trace and Roy's Largest Root analysis as shown in Table 5 and Table 6.

Table 5. MANOVA Analysis Result

Effect.		Value.	F.	Hypothesis df.	Error df.	Sig.
Intercept	Pillai's Trace	0.997	9.714	2.000	65.000	0.000
	Wilk's Lambda	0.003	9.714	2.000	65.000	0.000
	Hotelling's Trace	298.886	9.714	2.000	65.000	0.000
	Roys's Largest Root	298.886	9.714	2.000	65.000	0.000
X	Pillai's Trace	0.212	8.767	2.000	65.000	0.000
	Wilk's Lambda	0.788	8.767	2.000	65.000	0.000
	Hotelling's Trace	0.270	8.767	2.000	65.000	0.000
	Roys's Largest Root	0.270	8.767	2.000	65.000	0.000

Table 6. Tests of Between-Subjects' Effects

Source	Dependent Variable	Type III Sum of Square	df	Mean Square	F	Sig.
Corrected Model	Y1	1905.882	1	1905.882	8.122	0.066
	Y2	1120.235	1	1120.235	12.344	0.001
Intercept	Y1	336005.882	1	336005.882	1.432	0.000
	Y2	434560.235	1	434560.235	4.789E	0.000
X	Y1	1905.882	1	1905.882	8.122	0.006
	Y2	1120.235	1	1120.235	12.344	0.001
Error	Y1	15488.235	66	234.670		
	Y2	5989.529	66	90.750		
Total	Y1	353400.000	68			
	Y2	441670.000	68			
Corrected Total	Y1	17394.118	67			
	Y2	7109.765	67			

Description: Y1= Critical thinking skill; Y2= Learning outcomes

Discussion

Empirically, the result of this analysis proved that the social studies learning outcomes and critical thinking skills of students who were taught by using problem-based learning model were higher than the students who were taught by using conventional learning models. It could be seen from the result of statistical values multivariate test of *Pillai's Trace, Wilks' Lambda, Hotelling's Trace, Roy's Largest Root* where respectively with F = 8.767, the significant value was 0,000. It proved that null hypothesis (H0) was rejected, therefore , the alternative hypothesis (H1) was accepted. The result stated that there was is a significant difference between the experimental group and the control group in improving learning outcomes and critical thinking skills. This finding was strengthened by the findings of previous research which stated that in the problem-based learning model students could improve learning outcomes by providing opportunities to process and find their own strategies, solutions and draw conclusions to the problems presented so that they were in line with the process of critical thinking skills (Carstensen et al., 2018; Lestari & Dewi, 2021). In addition, the problem-solving skills or abilities of students who were taught by using a problem-based learning model were better than students who were taught by using the problem-based learning model taught with conventional learning models (Saputro & Rahayu, 2020; Utami & Giarti, 2020). In line with this research, problem-based learning model could stimulate students' ability to think critically. Based on the discussion, it could be seen that problem-based learning model was able to improve student learning outcomes and critical thinking skills (Al-Fikry et al., 2018; Lidyawati et al., 2017; Rahmatia, 2020). Problem-based learning was an effective model and could be applied in the learning process. The implication of this research was that teachers were expected to be able to implement this problem-based learning model in the learning process, so that it could improve students' ability to understand subject matter easily and quickly during the learning process.

The learning model that is considered effective in overcoming these problems is by applying a problem-based learning model. The model was chosen based on the finding by previous researchers regarding the effectiveness of the effect of the problem based learning model in overcoming learning problems in which it can stimulate critical thinking skills through a problem-based learning process, It also can also improve critical thinking skills in mathematics subjects (Hasibuan, 2014; Lestari & Dharma, 2022). In addition, the problem-based learning model can have a big influence on improving student learning outcomes (Aziz et al., 2015; Wartono et al., 2018). The problem-based learning model can be categorized as a student-centered and emphasizes collaboration in solving problems given by the teacher or encountered by students in everyday life under the guidance of a teacher or tutor (Dewi & Lestari, 2020; Wijnen et al., 2017). Basically, the principle of the problem-based learning model provides problems as an initial step in the learning process. The problems presented are problems that are often encountered in everyday life, because it can give influence in improving learning outcomes or student test results (Farisi et al., 2017; Izma & Kesuma, 2019). It is the time for the teacher to take his roles as a facilitator in finding the solution from the problem given by the teacher. It can help the students to students improve lifelong learning skills in an open, rational, reflective, critical and active learning mindset (Sintadewi et al., 2020; Windari, 2017).

4. CONCLUSION

Based on the results of the research above, it could be concluded that the problem-based learning model gave positive influence and improve social studies learning outcomes as well as critical thinking skills of elementary school students. The average score before treatment and the average score after treatment was increased. It became the evidences of the effectiveness of the problem-based learning model.

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