



## The Effect of Problem Solving Method on Learning Outcomes of Elementary School Students

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**ABSTRACT:** This study aims to determine the difference in learning outcomes using the Problem Solving approach with classes that do not use the Problem Solving approach. This research uses quantitative approach by using quasi experimental method. This type of research is Nonequivalent Control Group Design with two groups, namely control group/class and experimental group/class. Both groups were given different treatments. The samples in this study were all Class V SDK Golo Mongkok which amounted to 40 students and were divided into two classes. Data collection techniques in the form of tests (pretest and posttest). The research instrument used is a test question. Data analysis used is Descriptive Statistics, Data Normality Test, Variance Homogeneity Test, Statistical Hypothesis. The results showed that the average learning outcomes of the experimental class were higher than the control class. Thus it can be concluded that the application of the problem solving method can improve student learning outcomes.

**KEYWORD:** Learning Outcomes, Problem Solving.

### INTRODUCTION

Education is an important key in the development of a nation and state. One of the success factors of the educational process depends on the teacher in creating and implementing the learning process in the classroom. Learning is essentially a process of regulating, organizing the environment around students so that it can foster and encourage students to carry out the learning process (Pane, 2017). Good learning is learning that is able to build good interactions between teachers and students and students with other students. This can be done by creating effective and fun learning and building children's enthusiasm for learning. Thematic learning is one of the integrated learning models or the 2013 curriculum that links several subjects with the intention of providing meaningful experiences for students as regulated in (Permendikbud Number 22 of 2016) concerning Process Standards. According to Rusman, (2013), thematic learning is an integrated learning model involving several subjects using a thematic approach to provide meaningful experiences for students.

Based on the results of observations in the field, namely SDK Golo Mongkok, researchers found several problems including low student learning outcomes, this is due to various things, including the low attitude of student participation in learning, thus causing other problems, namely students who are afraid to ask the teacher regarding ongoing learning, and students are nervous when they want to ask and answer teacher questions, resulting in more monotonous or teacher-centered learning. Based on this, the teacher is required to be good at creating a pleasant learning atmosphere for students so that students are again interested in participating in learning activities (Anggraeni, 2009).

Some previous researchers found various things that cause low student social studies learning outcomes, including teachers lacking mastery of the material, teachers are less creative in delivering the material, namely not applying innovative learning methods, learning carried out by teachers is still dominated by the use of lecture methods without variation, student involvement in learning is still lacking. Students are required to sit still and record what is conveyed by the teacher, so that the interaction between teachers and students is reduced and students become bored quickly. The teacher is still the center in all learning activities, besides that the teacher has not provided opportunities for students to think in groups, so that it has an impact on the learning outcomes obtained by students (Anggraeni (2011)., Sudrajat (2016)., Therefore the teacher must be able to apply learning methods that can increase the learning activeness of students so that it can have an influence on the learning outcomes obtained by students.

One of the learning methods that can improve student learning outcomes is the Problem Solving method. According to Shoimin (2014: 135) that Problem Solving is a learning method that focuses on teaching and problem solving skills followed by strengthening skills. When faced with a question, students can perform problem-solving skills to select and develop their responses. Not only by memorizing without thinking, problem solving skills expand the thinking process (Pepkin, 2004) The use of learning



methods that teach students in problem solving, especially problem solving in everyday life is still lacking. The application of these learning methods is very necessary to answer the needs of problem-solving skills that must be possessed by students. The problem solving learning method is useful for stimulating thinking in complex problem situations and making students more active in learning, helping students process information they already have and build student knowledge.

Problem Solving method is very suitable to be used in learning social studies, because through this method can involve students to play an active role in the learning process. Through the guidance of the teacher there will be active interaction in learning, so that students can understand a concept of material easily and more directed. Through the problem solving method is expected to facilitate understanding of the subject matter provided and later can enhance the quality of the learning process which in turn can improve student learning outcomes. Jusuf Djajadisastra, (1982).

This research is important to be carried out in the hope that the use of problem solving methods in the social studies learning process will attract students' interest in participating in learning activities so that it will improve student learning outcomes. The Problem Solving method is able to increase student motivation and achievement in learning. This method can be used as an alternative to create varied conditions in the learning process.

## METHODS

This research uses a quantitative approach using the quasi-experimental method. This type of research is Nonequivalent Control Group Design with two groups, namely the control group/class and the experimental group/class. The two groups/classes were given different treatments. In this design the two groups were each given a pretest and posttest.

The population in this study were all students at SDK Golo Mongkok. As for sampling in this study using Purposive Sampling Technique in class V SDK Golo Mongkok, on the grounds that the problem was found in class V and using saturated sampling. So, the sample in this study was all Class V SDK Golo Mongkok with a total of 40 students. The research instrument used was a test. The data analysis used is Descriptive Statistics, Data Normality Test, Variance Homogeneity Test, Statistical Hypothesis.

## RESEARCH RESULTS

The data analyzed by researchers in this study are data from instrument trials, and data from research results, namely posttests. This study aims to determine the difference in learning outcomes using the Problem Solving approach with classes that do not use the Problem Solving approach. The material used is "My Best Friend Environment" with Subtheme 1 "Humans and the Environment". Class V A as the experimental class and class V B as the control class.

### A. Statistical Description

The following is a statistical description of posttest data from research from both experimental and control classes using SPSS 16.

**Table 1. Experimental and Control class posttest data description table.**

#### Descriptive Statistics

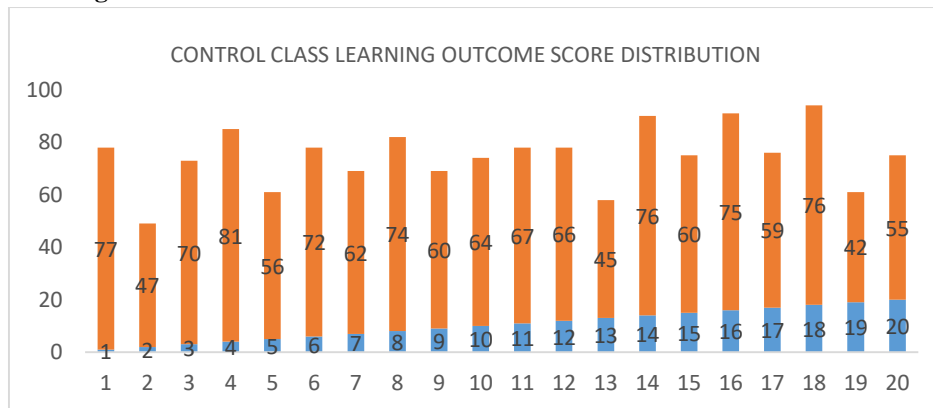
	N	Minimum	Maximum	Mean	Std. Deviation
Post Test Eksperimen	20	52	95	78.95	11.776
Post Test Kontrol	20	42	81	63.55	10.521
Valid N (listwise)	20				

The table above is a descriptive statistics table, which includes the minimum, maximum, mean and standard deviation values. The table is obtained from data or posstets values from experimental and control classes.

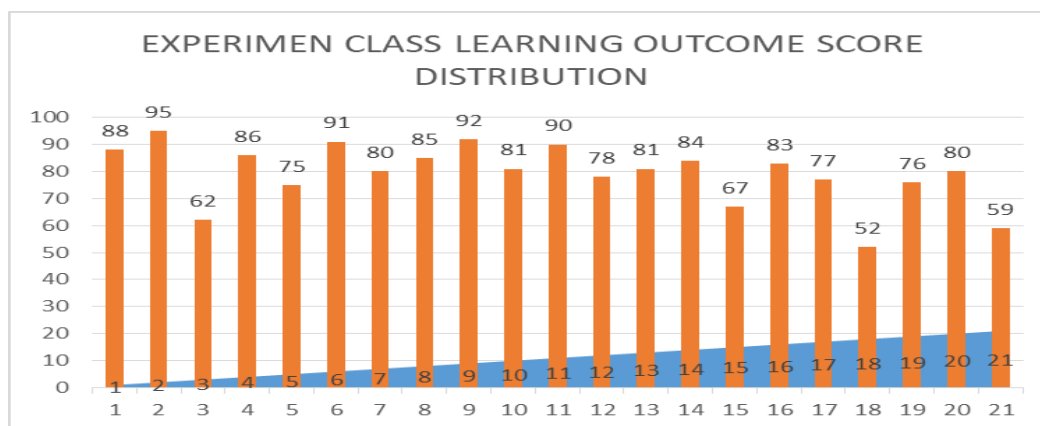
### B. Frequency Distribution

The following is a description of the posttest data of the Experiment class and Control class. The data is presented in a frequency distribution diagram

Frequency Distribution Diagram of Control Class Posttest Data



Seen from the frequency distribution table on the value and absolute frequency. The calculation is done using the help of Microsoft Excel.



In the diagram above, it is seen from the frequency distribution table on the value and absolute frequency. The calculation is done using the help of microsoft excel.

**C. Data Analysis**

The data tested in this study are posttest results. Before testing the hypothesis, what was done first was the analysis prerequisite test which included normality test and data homogeneity test using the help of SPSS 16.

**D. Normality Test of Posttest Data Results of Experimental and Control Classes.**

The data normality test in this study aims to determine whether the samples in the population are normally distributed or not. The following are the results of the normality test using SPSS 16.

**Normality test table of experimental and control data**

**Tests of Normality**

Kelas		Kolmogorov-Smirnov <sup>a</sup>		
		Statistic	Df	Sig.
Hasil Belajar Siswa	1	0.151	20	.200*
	2	0.179	20	0.095



In this study, the normality test used the help of SPSS. Experimental and Control class data is declared normally distributed if it is significantly greater than 0.05 or equal to 0.05. Based on the results of the above calculations, it is stated that the data is normally distributed because the significant value is more than 0.05

E. Homogeneity Test of Experiment and Control Posttest Data.

The following are the results of the Experiment and Control class Homogeneity test using SPSS.

**Experimental and Control class homogeneity test results**

**Test of Homogeneity of Variance**

		Levene Statistic	df1	df2	Sig.
Hasil Belajar Siswa	Based on Mean	0.107	1	38	0.745

Based on the table above, it is known that the significance value of the experimental and control class student learning outcomes variable is 0.745. Because the significance value is  $0.745 > 0.05$ , then as the basis for decision making in the homogeneity test above, it can be concluded that the variance of learning outcomes data in the experimental and control classes is the same or homogeneous.

**F. Hypothesis Test**

After testing normality and homogeneity, the next step is to determine the results of the hypothesis using the t test. the hypothesis proposed is:

H0 = There is no significant effect on improving student learning outcomes by using the problem solving method.

Ha = There is a significant effect on improving student learning outcomes by using the Problem Solving method.

**Data Hypothesis Test Table Using t-test**

**Independent Samples Test**

	Levene's Test for Equality of Variances		t-test for Equality of Means							
	F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference		
								Lower	Upper	
Hasil Belajar Siswa Equal variances assumed	0.107	0.745	4.361	38	.000	15.4	3.531	8.252	22.548	
Hasil Belajar Siswa Equal variances not assumed			4.361	37.527	.000	15.4	3.531	8.249	22.551	

Based on the table above, it is known that the significant value is  $0.00 < 0.05$ , so H0 is rejected and Ha is accepted or by comparing  $t_{count} > t_{table}$  with the calculation of  $t_{count} = 4.361$  and  $t_{table} = 1.685$  at a significant level  $\alpha = 0.05$  and degree df  $(20+20-2=38)$ , because  $t_{count} = 4,361 > t_{table} = 1.685$ , then the decision H0 is rejected and H1 is accepted, which means that there is a significant difference between student learning outcomes in classes that get learning by using problem solving methods with student learning outcomes using conventional approaches (lectures). This means that the learning outcomes in the experimental class are greater than the learning outcomes in the control class.



## B. Discussion of Research Results

The results of the Pretest and Posttest data analysis calculations of the experimental class and control class have differences in their learning outcomes. This can be seen from the results of the calculation of the Pretest and Posttest data analysis showing that the experimental class and control class have different learning outcomes. Data analysis of the two classes found that the average value of the learning outcomes of the experimental class was 78.95 while the average acquisition of the control class was 63.55, meaning that the experimental class had higher results on learning outcomes compared to the learning outcomes of control class students. Furthermore, based on the results of the calculation of posttest data analysis using the t-test for the experimental and control classes, it was found that the calculation results of  $t\text{-count} = 4.361$  and  $t\text{-table} = 1.685$  at a significant level of 5% or 0.05 and degrees of freedom  $20 + 20 - 2 = 38$ . Because  $t\text{-count} = 4.361$   $t\text{-table} = 1.685$ ,  $H_0$  is rejected and  $H_a$  is accepted, which means that the average learning outcomes of experimental class students are higher than the average learning outcomes of the control class, so it can be concluded that there is a significant difference between the learning outcomes of students in the class who get learning by using the problem solving method and the learning outcomes of students in the class who use a conventional approach only.

This is in line with the following studies. First, by Kristin (2016), on the use of problem solving for elementary school students. The results of data analysis show that the use of problem solving methods can increase the average student learning outcomes ranging from the lowest 9% to the highest 27% with an average of 17.8%. Second, the results of research from (Villela, 2013) Problem solving is a method that teaches problem solving by emphasizing the resolution of a problem by reasoning.

Shoimin (2017) explains that the Problem Solving method is a learning method that focuses on teaching and problem solving skills followed by strengthening skills. In the process of learning cooperation does not focus on students or teachers alone, but teachers and students are mutually responsible so that the learning process achieves maximum results. The Problem Solving method can help students in learning which will increase self-confidence because it involves students actively.

In this method, students are left to solve a problem themselves and the teacher only guides and facilitates. Students are required to play an active role, especially in expressing opinions, sharing opinions and discussing their opinions in order to find a solution or answer or conclusion to a problem that must be solved. Problem solving methods are more effective than conventional methods.

## CONCLUSION

Problem Solving is a learning method that focuses on learning activities and problem solving skills, and is followed by strengthening problem solving skills in everyday life. In its implementation, students are given the opportunity to solve a problem themselves and the teacher only guides and facilitates. So that students are required to play an active role, especially in expressing their opinions in order to find a solution or answer or conclusion to a problem that must be solved.

Based on the results of data analysis, it shows that the average learning outcomes of experimental class students are higher than the average learning outcomes of the control class, so it can be concluded that there is a significant difference between student learning outcomes in classes that get learning by using the Problem solving method with student learning outcomes in classes that use conventional approaches only. The author can conclude that the research results described earlier prove that the problem solving method has a significant effect on improving social studies learning outcomes for elementary school students.

## REFERENCES

1. Anggaraeni, Nurina. 2009. Improving Learning Outcomes Through the Application of Problem Solving. *Jakarta*.
2. Anggraeni, D. 2011. "Improving the Quality of Social Studies Learning Through Course Review Horay Type Cooperative Learning Model for Fourth Grade Students of SD Negeri 01 Semarang ". *Kreatif Kependidikan Dasar*, Volume 1 (2), 195
3. Djali. 2006. *Educational Psychology*. Jakarta: Bumi Aksara
4. Pepkin k.l. 2004. creative problem solving in math. <http://www.uh.edu/hti/cu/2004/v02/04.htm>
5. Kristin, F. 2016. Analysis of problem solving learning methods in improving learning outcomes of elementary school students. *Jurnal Pendidikan Dasar Perkhasa*, 2, (1), 90-98
6. Djajadisastra, Y. (1982). Methods of Teaching. *Bandung: Angkasa*
7. Pane, A., & Darwis Dasopang, M. (2017). Learning and Studying. *FITRAH: Jurnal Kajian Ilmu-Ilmu Keislaman*, (3) 2, 333.



8. Rusman. 2013. Learning Models. Developing Teacher Professionals. *Jakarta: Rajawali Pers.*
9. Shoimin, A. 2017. Innovative Learning Models in Curriculum 2013. *Yogyakarta: Ar-Ruzz media.*
10. Sudrajat.A. 2016. "Improving Social Studies Learning Outcomes About Technological Development Through the Take And Give Model for Grade IV Students of SDN Rawamangun 09 Pagi PuloGadung, East Jakarta. *Ilmiah PGSD,(10) 2. 40-42.*
11. Permendikbud Nomor 22 Tahun 2016. On Process Standards for Primary and Secondary Education. BN.2016/No.955, <https://jdih.kemdikbud.go.id/>
12. Villela, lucia maria aversa. (2013). Problem Solving Method. *Journal of Chemical Information and Modeling, 53 (9), 1689– 1699*

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