

The Influence of The Problem-Based Learning Model Assisted by Zoom Meeting on Student Learning Outcomes

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Abstract. Learning outcomes are the ability to obtain thoughts from the knowledge gained. The online or distance learning system makes students increasingly constrained by access to knowledge so that one way is to change the pattern of learning models. Problem-based learning is a learning model that wants to be applied at this time to improve student learning outcomes in goods and services, so that a zoom meeting application is also needed to help students regain their knowledge as a virtual medium. This quantitative research uses quasi-experimental research methods using a non-equivalent design. This research was carried out at SD Muhammadiyah, Sorong City. The population in this study was 60 students in this class IV. The sample was 30 students in the IVA class and 30 IVB class. Data collection techniques use learning outcomes tests, observations and doctination. Data analysis used was an independent sample t test (t test) with a significant level of 0.05 assisted by SPSS 25. The results obtained an increase in the average score in the class given treatment with the PBL (Problem Based Learning) learning model assisted by zoom meetings on learning outcomes.

INTRODUCTION

The science that examines social science disciplines regarding social, economic and cultural relations is social studies learning. It is important to have knowledge in social science education that is taught in schools (1). purpose of social studies learning is to educate a community's life based on good moral and ethical values and can uphold the nation's cultural values and also aims to form students who have the knowledge, national insight, skills, social ethics, and high social character (2–4). Social studies carried out both in basic education and in higher education do not emphasize the theoretical aspects of science, but the practical aspects in studying, studying symptoms, and social problems of society, whose weight and breadth are adjusted to their respective levels of education. By learning about the surrounding environment and the social environment through social studies learning at school, it is possible to apply it to everyday life (5). Humans are social creatures and need other humans around them, therefore, as social beings, they must be able to provide positive things in their environment

Learning is a process of achieving the knowledge gained to change human behavior to be good and beneficial to others. Success in the learning process can affect the future. This makes students aware of academic support and encourages them to get good grade (6). Learning media that does not contain problem-solving skills will hinder the achievement of student competence (7). However, seeing the poor learning conditions, the first time it was discovered in China, it caused the implementation of a work from home policy, so that all levels of education from basic to high schools must also carry out online learning in order to prevent the spread of the Covid-19 virus. Distance learning is a type of teaching and learning that allows the delivery of teaching materials to students using the internet, intranet, network media or another computer (8). In distance learning, based on observations and facts that researchers know, there are teachers who only give assignments / homework to students, such as doing questions in books or

doing questions made by the teacher himself. Then the participants also find it difficult to understand something caused by accuracy during this pandemic. So it feels very difficult to develop their knowledge skills so that student learning outcomes are not carried out optimally. Even though students need a ability or skill in finding ideas and solving problems.

Learning outcomes are patterns, deeds, values, understandings, attitudes, appreciations and skills. According to Bloom, learning outcomes include cognitive, affective and psychomotor. "Learning outcomes are the abilities that a student has after he or she receives his learning experience." From this explanation, it can be interpreted that learning outcomes are the result of the learning process experienced by students, measured by students' abilities according to their learning experience (8,9) Learning outcomes are all the consequences that can occur and be used as indicators.

The survey, conducted by educational institution PISA through the U-Report channel consisting of SMS, WhatsApp, and Facebook Messenger, received more than 4,000 responses from students in 34 provinces. Student learning outcomes have decreased during their distance learning. The percentage of lack of learning experienced while studying from home, 58 percent of students said they lacked guidance from teachers while 42 percent cited poor internet access. If distance learning continues, more than half (62 percent) say they need help in both mentoring and adequate internet access. "When this country started easing restrictions, it is very important to prioritize children's learning whether in school or remotely,". It is concluded from the statement above that students' knowledge is very limited due to distance or online learning caused by two-way interactions that are not carried out directly so that the learning outcomes obtained decrease(10)

The children who have felt the most about school closures are one of them elementary school students, and we know from previous crises that the longer they have not attended school, the less likely they are to return to having the knowledge gained. related to distance or online education during the Covid-19 pandemic. The results of the survey showed that 95% of students experienced many problems in participating in online learning during the corona pandemic. SMRC Public Policy Manager Tati D. Wardi said the survey was attended by respondents with an age range of 17 years and above. Of these, as many as 5% admitted that they were still in school or college. As many as 87% of the total respondents said they did online learning, while those who did not learn amounted to 13% (11)

The solution to the problems described above is the selection of a student-centered learning model. In PBL (Problem Based Learning), students are asked to solve a real problem which will later produce a problem solving in learning independently. Furthermore, PBL (Problem Based Learning) presents various problematic situations that are authentic and have meaning to students, which can serve as a stepping stone for carrying out investigation activities and investigations of (12). From the description above, it is concluded that PBL (problem-free learning) can foster the development of students' knowledge, attitudes, and skills such as creativity, motivation, interests, responsibilities, cooperation, socializing, and being able to solve their own problems (13,14)

PBL (Problem Based Learning) is a learning model using authentic (real) problems as a context for students to solve problems and think critically to gain knowledge and learn to make decisions. Authentic problems become the starting point in PBL (Problem Based Learning) learning, thus encouraging students to collect information and data in solving problems. PBL (Problem Based Learning) has five basic characteristics in its learning. First, PBL (Problem Based Learning) is problem-based learning. Second, PBL (Problem Based Learning) is about solving problems and directing students to find solutions to problems faced on a daily basis. Third, the PBL (Problem Based Learning) model is student-centered learning. Fourth, the PBL (Problem Based Learning) model is independent learning. Fifth, the PBL (Problem Based Learning) model is reflective, so students can identify problems, gather important information, and find alternative solutions to problem solving through group discussions (7,15)

The Problem Based Learning (PBL) model is a learning model with a learning approach where students work on authentic problems(16,17), so that students can compile their own knowledge, develop higher thinking skills, bathe students, and increase student confidence. In this learning the student is faced with a problem, then performs problem solving, through which the student is required to learn with more basic thinking skills to a higher level in order to solve the problems he faces independently and confidently.(1,18–20)

This PBL (Problem Based Learning) approach prioritizes the learning process where the teacher's task must focus on helping students achieve Sumantri's self-directing skills in problem-based learning the teacher plays the role of a problem presenter, questioner, holding a dialogue, helping to find problems and as a facilitator(21,22). In addition, the teacher prepares support and encouragement that can improve the intellectuality of students. Problem-based learning can only occur if the teacher can create an open classroom environment and guide the exchange of ideas. Problem-based learning can also increase the growth and development of student learning activities, both individually and in groups.(9,23)

Zoom meeting application is a virtual video service application that can be accessed using cellphones, computers and other software devices. In distance learning, teachers and students need information technology that

collects so that learning continues, one example is "zoom meetings. The zoom meeting application is an online communication media that can be used in meetings, learning and virtual videos to connect more people in one frame (24) it can be concluded that zoom meetings are virtual learning media that is very useful for everyone, especially for students in improving learning even though it is carried out online or remotely (16,17,25,26)

According to research conducted by Irfandi Idris, there is a significant influence of PBL (Problem Based Learning) assisted by zoom meetings on student learning outcomes, testing from the "paired t-test analysis test, namely the value (sig.) is less than 0.05 (sig. < 0.05) which is 0.000. So that H0 is rejected and H1 is accepted, which means that the use of the PBL (Problem Based Learning) influence model is better in improving student learning outcomes. The thing that distinguishes the study of Lailiya and Ririn is in the population, samples and teaching materials. Based on the problems with the decomposition, the intention of the study is to look at those that affect the variables.

METHODS

The research used in the research is quantitative research. This research model is a quasi-experiment. The form of pseudo-experimental design in this study is a non-equivalent control group. The specific form of the design is described in the following table.

Tabel 1. Desain nonequivalent control group

Group	Pretest	Perlakuan	Posttest
Eksperimen	O_1	×	O_2
Kontrol	O_3		O_4

(Sumber: Sukardi 2012:26)

Information:

O_1 : Pre-test kelompok eksperimen.

O_2 : Post-test kelompok eksperimen.

O_3 : Pre-test kelompok kontrol.

O_4 : Post-test kelompok kontrol.

X : Perlakuan pada kelompok eksperimen".

The population in this study was class IV of SD Muhammadiyah Kota Sorong, namely class IVA and class IVB as many as 60 students. In this study, the IVA class is a control class while class IVB is a class used by experiments, using random sampling techniques. The samples in this study were 30 in the IVA class and 30 students in the IVB class. The types of instruments used in this study are written tests and documentation. The written test in this study looked at the knowledge indicators of learning outcomes. Previously, test instruments passed validity and reliability testing. The validity test is used in research with a relationship formula using the cronbach alpha formula. The technique is from analyzing the data from this study quantitatively, then the depiction of the data obtained comes from several things that support, on the statistics of the data obtained. Before performing inferential statistical calculations, there is a requirement for analysis testing, namely the "normality test. In normality testing, the data were tested using liliefors or kolmogorov-smirnov tests on SPSS. After the requirement test is carried out, it is continued by calculating the hypothesis test with the t test, which is an independent t-test using the separated variance formula. In this study, researchers used the help of SPSS version 25 to perform calculations.

RESULTS AND DISCUSSIONS

The results of this data study are the results of student learning using the PBL (Problem Based Learning) model assisted by zoom meetings against experimental groups and conventional learning in the control group. The determination of the quality of the research variables can be determined from the average value of each variable converted into a likert scale. The following is a likert scale table on learning outcomes.

Tabel 2. Score Interval Likert Scale Learning Outcomes

Score Interval	Categori
85-100	High
75 – 84	Medium
0- 74	Small

Based on the table above, it shows that the interval of learning outcomes scores ranging from 85-100 has a "high" category and score intervals ranging from 0-74 belong to the "sufficient" category. The results showed that the highest score obtained by students in the Control class was 79.61 the lowest score was 46.35 while the highest score obtained by the experimental class was 90.71 the lowest score was 67.50. To be clear, Descriptive the results of calculating the average value of the experimental class and control class table 2 below:

Tabel 3. Descriptive Statistics Learning Outcomes Pretest Posttest Control and Experiments

Data	Class	Eksperimen		Control Class		
		P	P	P	Post	
		retest	osttest	retest	test	
Score High		6	8	8	95	
		6	6	6	75	
Score Small		2	4	6	75	
		6	9	0	79.6	
Mean		6	9	4	79.6	
		7.5	0.71	6.35	1	
Medi		5	8	4	73	
		0	3	4	73	
Mod		4	8	4	73	
		7	0	0	7.93	
Stan		9	8.	7.	7.93	
		.69	55	59		

Based on the table above, it is known that the mean of the pretest of the experimental group was 67.5 while the mean of the posttest was 90.71. While the mean of the pretest of the control group is 46.35 while the mean of the control group is 79.61. In testing requirements, namely the normality test using the implementation liliefors test by looking at the study from table 4.

Tabel 4. Uji Normalitas Class Kontrol and Eksperimen

Class	N	l_{hitung}	l_{tabel}	Information
Pretes Eks		0,0854		59.80
Posttes Eks		0,149		84.70

Pretest	30	0,158	0,1614	60.70
Kontrol				
Posttes		0.109		69.93
Kontrol				

Based on the calculation results of the normality test with a significance level (α) = 5% or 0.05 above, it can be seen that Lhitung in the experimental class pretest was 0.854, while the Lhitung in the experimental class posttest was 0.149. If you look at the pretest results of the control class, Lhitung = 0.158, while the calculation results in the control class show that the Lhitung = 0.109. Thus, the pretest posttest of the experimental class using PBL (Problem Based Learning) is assisted by zoom meeting and control classes with Ltabel = 0.1614 indicates that the data is normally distributed, because all results Lhitung < L_{table}.

In the next stage, after testing the requirements of the analysis and calculation of the data of the normal or homogeneous statement, with the phase to test its implementation with the aim of seeing what affects the use of the model with the ability to think(27), the level of signification is 5% or 0.05. Below is the calculation of the t test in table 4 assisted by SPSS version 25.

Table 5 Test (T)

Sample	Number of students	Standard Deviation	Standard Deviation	D	t-count	t-table
Experiment	30	3.733	59.94	7	2.8	2.0
Control	30	1.132	53.74	9	95	62

Based on the calculation results of the independent t-test assisted by SPSS version 25, when viewed from the decision rules, namely a significant value (2-tailed) < 0.05 with a statement if it affects when viewed from the calculation results in table 4 above, "significantly smaller than 0.05, namely 0.000 < 0.05. Thus, it can be stated that there is an influence of PBL (Problem Based Learning) assisted by Zoom meetings on student learning outcomes of goods and services in grade IV SD Muhammadiyah, Sorong City.

Based on the results of the description above, it is clear that the use of PBL (Problem Based Learning) assisted by Zoom meetings makes learning activities student-centered to solve a problem. In PBL (Problem Based Learning), students not only listen and pay attention but are also directly involved in learning(2,6,28) This model is able to improve students' abilities by involving them to solve a problem both in learning and daily life. This learning model comes from a collection of student ideas as another way to solve a real problem, so that students can plunge directly into the learning process. In contrast to learning that uses conventional models, students with restrictions pay attention to an acquired(5).

CONCLUSION

Based on the results of data processing, it is concluded that the PBL (Problem Based Learning) learning model assisted by Zoom meetings affects student learning outcomes. This is shown from the average score of the students who applied the learning model. From the results of hypothesis testing, it also shows that the PBL (Problem Based Learning) learning model has an influence on the acceptance of $H_a > H_0$ which shows a figure of 2,895 > 2,062, so it can be said that H_0 was rejected and H_a was accepted. Thus, the application of the Problem Based Learning learning model assisted by Zoom meetings is considered successful in improving student learning outcomes. For this reason, the Problem Based Learning learning model is able to influence learning outcomes for students so that this model can be used by teachers in PBM (Teaching and Learning Process) activities or learning to create a new learning atmosphere

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