The Effect of The Implementation of Problem-Based Learning (PBL) Learning Models on The Critical Thinking Ability of Students at SDN 1 Kalibaru On IPS Contents

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Abstract: In 21st century learning, students are required to have 4C competencies, namely Critical Thinking, Collaboration, Creative and Communication . The ability to think critically in elementary school students needs to be trained so that students have the ability to make decisions in dealing with problems. Problem-Based Learning (PBL) is an example of a learning model that directs students to participate directly in solving a simple problem. The purpose of this study was to determine whether or not the problem-based learning (PBL) learning model had an effect on students' critical thinking skills at SDN 1 Kalibaru on social studies content. This type of research is a quasi-experimental design using a non-equivalent control group design. In this design, it begins with giving a pretest to the two groups. And given a posttest at the end of the experimental and control groups to see changes for different actions. This research was conducted at SDN 1 Kalibarukulon with the research subjects, namely all students of class IVB who previously had homogeneity tests. Data collection techniques include observation, interviews, documentation and tests. The results showed that the posttest results of the control class were 70.2% while the experimental class was 81%. The results of the hypothesis test explain that the t-test value is 4.260, while the t-table value with df 44 is 2.015. The conclusion is that the Problem-Based Learning (PBL) learning model has an effect on improving students'.

Keywords: Problem-Based Learning (PBL) Learning Models, Critical Thinking Ability Of Students

Introduction

Education is an important aspect because education is able to bring progress to a country. One of the efforts to improve the quality of education is by adjusting the use of the learning model with the material to be delivered. Adjusting the use of the learning model aims so that students can develop their potential to the fullest. In 21st century learning, students are required to have 4C competencies, namely Critical Thinking, Collaboration, Creative and Communication. The ability to think critically in elementary school students needs to be trained so that students have the ability to make decisions in dealing with decision problems. This ability will be very useful when students enter a higher education level. Problem-Based Learning (PBL) is an example of a learning model that directs students to participate directly in solving a simple problem. The use of problems as learning materials for students aims to train the ability to solve problems independently and think critically, as well as build new knowledge that they have not encountered before.

Based on the results of interviews with researchers and class IV teachers, so far the learning model used is lectures and assignments. So that in the learning process the teacher is more active than students. Students who tend to be passive do not have the opportunity to practice their critical thinking skills. Adjustment of the learning model is an important thing that needs to be considered to train students' critical thinking skills. The purpose of this study was to determine whether or not the problem-based learning model had an effect on students' critical thinking skills at SDN 1 Kalibarukulon.

Literature Review

Learning models are rules that are systematically structured as a basis in the learning process for the achievement of learning objectives. The use of the PBL learning model directs students to learn through simple problems (Aini, et al, 2015: 2). Problem solving is a way of teaching by presenting real problems and the problem solving process is carried out by students.

The application of the learning model by providing examples of simple problems to students aims to develop the potential for thinking of students in the process of solving problems in the surrounding environment to the fullest. The PBL-based learning process students will practice evaluating, identifying, collecting information based on the data students have obtained. The atmosphere of the PBL learning class will be more active with discussions of exchanging opinions, debates, and controversies so that it can make students more enthusiastic about learning activities. According to Arends in (Saiful, 2017: 26) the following are PBL learning steps.

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	Table 1 PBL Steps
NO	PBL steps
1	Focus students on the problem
2	Organizational learners towards learning
3	Conduct investigations independently or in
	groups
4	Develop and present the work.
5	Analyze and evaluate the problem-solving
	process

According to Johnson, in (Prasetyo, 2020: 26) critical thinking is an activity that aims to expand understanding that is carried out with an open mind. Critical

thinking is a person's ability to conclude and consider a conclusion by making and gathering evidence. Students are required to have evidence for the conclusions that have been obtained. The way to improve critical thinking skills is by using appropriate learning models and giving critical assignments by utilizing story questions.

According to Ennis 1996 (in Elok, et al, 2015: 937) there are 12 aspects and indicators of critical thinking skills, namely.

Table 2 Indikator Berfikir Kritis				
No	Aspect	Indicator		
1	Simple	Understand the question		
	explanation	Analyze questions		
		Ask and answer questions		
2	Build basic	Consider the authenticity		
	skills	of the data sources		
		obtained		
		Considering an		
		observation result.		
		Indicator		
No	Aspect	Indicator		
<u>No</u> 3	Aspect Concluding	Indicator Consider the deduction		
<u>No</u> 3	Aspect Concluding	Indicator Consider the deduction results.		
<u>No</u> 3	Aspect Concluding	Indicator Consider the deduction results. Consider induction.		
<u>No</u> 3	Aspect Concluding	Indicator Consider the deduction results. Consider induction. Make and determine the		
<u>No</u> 3	Aspect Concluding	Indicator Consider the deduction results. Consider induction. Make and determine the results of considerations.		
<u>No</u> 3	Aspect Concluding Provide further	Indicator Consider the deduction results. Consider induction. Make and determine the results of considerations. Defines terms.		
<u>No</u> 3 4	Aspect Concluding Provide further explanation	Indicator Consider the deduction results. Consider induction. Make and determine the results of considerations. Defines terms. Identify assumptions		
<u>No</u> 3 4 5	Aspect Concluding Provide further explanation Set a strategy.	Indicator Consider the deduction results. Consider induction. Make and determine the results of considerations. Defines terms. Identify assumptions Decide on an action.		

Research Methods

This type of research is a quasi-experimental. Experimental research is research that studies the effect of one thing by changing the conditions of another thing (Arifin, 2011). The subjects of this study were 23 IVA grade students and 23 IVB students at SDN 1 Kalibaru Kulon

The design of this study was a non-equivalent control group design which consisted of two groups, namely the control group and the experimental group. To determine the control and experimental class, the researcher must perform a homogeneity test to determine whether the research subject is homogeneous or not. After doing the homogeneity test and the results are homogeneous, then the next step is to determine the control class and the experimental class using the lottery technique. Research subjects will be given questions pretest before treatment and questions posttest after treatment. The test instrument is in the form of 20 multiple choice questions that have been tested for validation and reliability.

In the control group, learning will be applied using a learning model that is usually applied by the teacher, namely the lecture and assignment methods. Whereas in the experimental group the learning model used was the Problem-Based Learning (PBL) learning model.

To measure students 'critical thinking skills, the test results of 20 multiple choice questions containing students' critical thinking indicators were analyzed by adding the scores obtained by each student and then converted into a percentage value based on each student's critical thinking indicator.

According to Purwanto (in Septiwi, 2017) the formula for finding a percentage value is:

$$NP = \frac{R}{SM} \times 100$$

Keterangan:

NP = percent value

R = score students

SM = ideal maximum score

100 = fixed number

The categories of student ability levels can be seen in the table below

Table 3	Student	Ability	Categories
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Score (%)	Category
81-100	Very Good
61-80	Good
41-60	Enough
21-40	Less
0-20	Very Less

References: Purwanto (in Septiwi,2017)

Results And Discussion

In the experimental class, student worksheets are given in the form of reading text which contains a problem related to the material to be studied and a table of how to solve the problem. Students work on worksheets independently. In the control class, the delivery of material by lecturing and giving assignments is in accordance with what is in the student book. After doing the learning, the control class and the experimental class were given posttest questions to work on. The following is a table of the results of the posttest scores based on the indicators of students' critical thinking abilities.

Table 4 Data on Posttest Results based on Critical Thinking

	Indicators			
Indicator	Control class		Experiment class	
	Perce ntage (%)	Categor y	Perce ntage (%)	Catego ry
Simple Description	85	Very good	95	Very good
Building Basic Skills	60	Enough	85	Very good
concluding	81	Very good	96	Very good
Provide Further Explanatio n	77	Good	95	Very good
Set a Strategy	76	Good	90	Very good
Average	75,8	Good	92,2	Very good

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The table above shows that, the average posttest score of the control class is 75.8%, with the highest percentage being the indicator number 1, which is a simple explanation. The lowest percentage is found in indicator number 2, which is building basic skills by 60%. The average posttest score in the experimental class was 92.2% in the "very good" category. The indicator that gets the highest percentage is in concluding activities at 96%.

The data that has been obtained will then be analyzed to determine the differences in a treatment. The t-test result shows that the t-test value is 4.260, while the t-test value with df 44 is 2.015. So it can be written the value of t > t table, 4,260> 2,015. Based on the decision-making results of hypothesis testing, if the value of t > t table then the null hypothesis (Ho) is rejected and the alternative hypothesis (Ha) is accepted. The conclusion is that there is a significant influence of the Problem-Based Learning model on students' critical thinking skills.

Conclusion

Based on the results of the research and data analysis that has been described, it can be concluded that the Problem-Based Learning model has an effect on the critical thinking skills of the fourth grade students of SDN 1 Kalibaru Kulon on social studies content. The results showed that the posttest mean score of the experimental class was 81.5 higher than the control class, namely 70.2.

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