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The Influence of the Problem-Based Learning Model Against on the Activity and Critical Thinking Skill Students of Grade V Elementary School

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Abstract

The study aims to increase the activity and critical thinking skills of class V students through for the application of the *Problem Based Learning* model. The research approach used is quantitative with *pre-experimental* design type, and design research using *Nonequivalent Control Group Design*. The research location in Pajaran 01 Elementary School and Pajaran 05 Elementary School, Saradan District, Madiun Regency. The subject in this study was all students of class V Elementary School Pajaran 01 and Pajaran Elementary School 05 district of Madiun Semester II year lesson 2018/2019 with the number of students each class of 25 students. The research subject is taken from two different schools because it is not a parallel class but has the same qualifications. Data collection techniques using observation and test. Data collection instruments using observation sheets of student activity and test sheets of critical thinking skills. Data is analyzed through the validity test, reliability test, normality test, homogeneity test, and hypothesis test (*t-test*). The results showed that students ' activities showed that the value of the experimental class T_{count} 4,762 > from the control class of Tcount 3,456, while the students' critical thinking skills there is a significant influence indicated by Experimental class T_{count} 12,643 > of the control class results T_{count} 10,342 (df 23) and the value sig. (2-failed) 0.000 < 0.005. So, Ho is rejected and Ha is accepted. Then it can be concluded that the influence of the application of the *Problem Based Learning* model of activity and skills of critical thinking students of grade V in Elementary School Pajaran 01 Saradan Madiun.

Keywords: Problem Based Learning Model, Activity, Critical Thinking Skills

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Introduction

Teachers have a very important role to help learners develop their potential. In developing the potential of students teachers must adapt to the abilities, talents, interests, and characteristics of learners. In the learning process, especially the social studies are still lacking in accordance with the learning theory and the characteristics of learners, often the learning used by teachers emphasizes the cognitive aspect or memorization. Teachers convey teaching materials only using lecture and learning methods that are centered on the teacher without regard to the knowledge that students possess so that the teaching materials received by learners are only abstract. Students are only able to memorize concepts and are less able to use the concept in everyday life to solve problems related to the concepts that students already have. The cause of this is because some students have good memorization rates but are unable to understand abstract knowledge. Teachers are expected to facilitate students to participate in activities that are not merely encouraging to remind the names of figures, dates, and places but rather to encourage critical thinking (Gunansyah, 2015, p. 70).

Various stimuli can be used to introduce a variety of social and natural phenomena in elementary school children, through video views, pictures, newspaper articles, and live observation activities. Gunansyah (2015, p. 1) suggests recognizing and understanding a phenomenon or event intended as an attempt to explore and develop a number of fundamental potentials that are owned by the child, including potential curiosity, a sense of view Reality, a sense of want to find and taste. The learning of social sciences in schools has also not sought to implement and familiarize with the experience of values in democratic life, social societal by involving students and school communities in a variety of classroom and school activities. In addition, the learning of social sciences emphasizes aspects of knowledge, facts, and concepts of memorization (Gunawan, 2011, p. 62). Teachers ' learning is often still done conventionally by the teacher, who is still a teacher-centered, although the teacher has been following the socialization of the 2013 curriculum. In teacher-class learning is only on teacher books, and students are only working on the questions in the student's book. Teachers do not relate theories to student social life, students are not given the opportunity to construct their own knowledge, consequently learning becomes less meaningful.

From an observation of the learning process of social sciences at Pajaran State Elementary School 01 on social issues in the local environment is still dominated by the method of lecture and assignment. In addition to the fact found in the teaching and learning process in class V in Pajaran 01 Elementary School, both teachers and students are included (1) The study is still conventional despite implementing the 2013 curriculum, (2) Social sciences learning activities have not attributed the material to the student's learning experience, (3) Learning that is still centered on the teacher-centered, (4) Students are less active, (5) Low learning outcomes on social sciences, (6) Students are not trained to be able to find and solve problems critically. The cause of these problems is because in the learning process the students are more dominant listening, less active so that students are less able to associate the concept of learning with the students ' experience and make learning meaningless.

Based on preliminary study results on students ' critical thinking tests conducted at Pajaran 01 Elementary School on the V class samples of the material social problems in the local environment there are 30% of students who are able to think critically, this can be known from All students in grade V 30% of students who are able to answer the test of critical thinking skills are given. It shows that learners' critical thinking skills in understanding material social issues in the local environment are still low.

The skills of critical thinking are rationally thought (absurd) and focus on the beliefs and decisions made (Ennis, 2011). Meanwhile, according to Fisher (2015, p. 5) "Critical thinking is that mode of thinking, about any subject, content or problem in which the Thinker improves the addition of their thinking by skillfully taking charge of the structures inherent in thinking and imposing Intellectual standards upon them". This means that critical thinking is a way of thinking about any subject, content or problem where a thinker enhances the quality of their thinking by wisely taking over the structure inherent in thinking and implementing standards Intellectually on them. To assess the correctness of a person's opinion based on scientific truths and knowledge, students need to be equipped with the ability of critical thinking, so that students can face challenges and solve problems in their daily lives.

If critical thinking skills have been trained in elementary school, the benefits will be felt by learners when they are at a higher level of education. If students ' skills in problem-solving and decision-making have been trained at the elementary school level then students will be better prepared and able to be cognitive when given more complex problems at higher education levels. Individual success in mastering the fundamentals of thinking skills at the developmental stage of middle-age children. This means that individual academic success at a higher level of education is determined by its success in academic activities or learning at the basic level of education. Learning activities are all activities undertaken in order to achieve the learning objectives. Students are active in physical and mental learning in the form of reasoning, finding links to one another, communicating ideas/ideas, submitting the right form of representation, and using it all to Solve the problem (Ahmadi, 2010, p. 30). The conditions of the learning process in grade V students at Pajaran 01 Elementary School are still less stimulating students to be actively involved so that students are less self-reliant, even more, likely to be passive, flirt and talk with their friends during the learning process.

Based on the results of interviews there are still many teachers in elementary school who have not yet followed the socialization of curriculum 2013 but must have implemented the curriculum 2013 in his school. After walking one to two months of learning in the early semester of the new teacher followed the socialization of curriculum 2013, because the socialization of the curriculum 2013 conducted gradually and application of the 2013 curriculum is also applied gradually school. The constraints in schools were when they had to implement the 2013 curriculum at school, but the teacher's books and student books were not yet subsidized by the Government. The late arrival of books, requiring schools to take the initiative to buy student books and book students themselves with very limited numbers, because the school does not have a sufficient budget to buy students books to The entire number of students. Although the socialization of the 2013 curriculum has been followed by teachers, there are still many teachers who lack learning devices, learning processes, and assessments in the 2013 curriculum.

In connection with the above problems, the effort to improve the quality of social learning process needs to be done, so that learning can be re-centered on students (student-centered), students' activities are increasing and students can practice Thinking critically. Teachers must give students the opportunity to participate actively in learning by presenting real problems to students. This is done to increase students ' activities to learn directly, students construct their own knowledge so that students become more understanding of the materials learned and student learning outcomes will also increase.

One of the efforts to improve student activity and critical thinking in social sciences is to implement the *Problem-based Learning* model or problem-based learning (hereinafter abbreviated Using the term *Problem-based Learning*). Teachers can develop his teaching model as an effort to embed good character to students. When re-examining the standards of social sciences subjects in the curriculum 2006, it has been demanded that students have the ability or skills of critical and logical thinking to solve problems and can apply the theory of Yaang Learned in everyday life. The PBL learning Model is expected to develop the students ' cognitive abilities especially the skills to solve problems to help them construct their knowledge. Students can learn how to contract a problem, organize problems and investigate problems, distinguish opinions and facts, collect and analyze data, compile facts, construct problem-solving argumentation, work Individuals and groups in solving problems. Through these dimensions, students are equipped with responsibilities from an early age to be able to investigate problems.

The implementation of the *Problem-Based Learning* model aims to provide opportunities and freedom to the students to investigate the real problems in his life (Huda, 2013, p. 272) and also develop thinking skills in solving problems (Rusman, 2012, p. 238). In implementing the *Problem-Based Learning* model, students work on authentic issues with the intention of structuring their own knowledge, developing Inquiry and higher-level thinking skills, and developing self-reliance and confident (Trianto, 2007, p. 68). The advantages of this model are to help improve the development of learning skills in an open, reflective, critical, and active learning Mindset (Rusman, 2012, p. 230).

Learning by using the problem-based learning Model can be used as an alternative to learning in elementary schools in an effort to develop students ' critical thinking skills. But in applying this

learning need to pay attention to the steps of learning so that the implementation of learning can be done well. Implementation of the learning will be done well if supported by media learning and teachers in teaching. Therefore prepare well and mature so that students can engage actively in learning. In addition, teachers also need to keep the classroom in good condition, so that all students can follow the learning well.

Problem-Based Learning models can facilitate students to communicate, workgroups and solve problems. Reviewed from the psychological aspect, this *Problem-Based Learning* model is standardized to cognitive psychology that assumes that learning is a process of behavioral change because of the knowledge gained through experience. Learning not only memorized a number of facts but the conscious effort that individuals made with his environment by self-constructing his knowledge. *Problem Based Learning* model is very suitable to be implemented because the learning process starts from the closest environment with the students who used as an entrance to study social sciences.

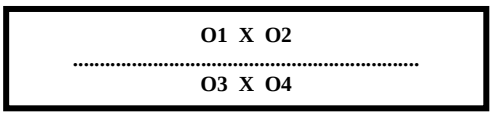
Several research studies have proven the success of *Problem-Based Learning* models in increasing student activity and critical thinking. The research results of Pebriana and Disman (2017) show that there is an increase in critical thinking skills in students whose studies use a higher problem-based learning model than students who study it using conventional learning. This is because problem-based learning is a strategy that begins with facing students on real-life (authentic) issues, so students are required to think critically and place students as a problem solver so that students become Skilled in critical thinking. The results of the Argaw, Haile, Ayalew, and Kuma Research (2016) showed that *Problem-Based Learning* as a more effective teaching method for the physics topic was chosen compared to conventional teaching methods. *Problem-Based Learning* is a good alternative teaching method to improve students ' academic achievements. As such, students need to develop social skills in order to be active in group discussions and to conduct independent learning.

Based on the explanation above, researchers are interested to conduct a study titled " The Influence Of The *Problem-Based Learning* Model Against On The Activity And Critical Thinking Skill Students Of Grade V Elementary School ".

Method

The research approach used is quantitative. The type of research to be implemented is experimental research, as it aims to measure the influence of free variables, namely the influence of the application of the *Problem Based Learning* (X) model of bonded variables, i.e. student activity (Y1) and skills Critical Thinking (Y2). The main purpose in experimental research is to seek the influence of educational activity on the student's behavior and to test the hypothesis of whether the influence is compared to another act (Darmawan, 2013, p. 226).

The research draft used in this study is with *Nonequivalent Control Group Design* methods. The class of an experiment is a class that is given a treat (X). In experimental classes, learning with the *Problem Based Learning* model is applied. While the control class is a class that is not given treatment. In this class, the control applies conventional learning (without treatment). The experimental class in this research is the grade V students of Pajaran Elementary School 01 and who became the control class namely the first grade V student Pajaran 05 Elementary School. Both the experimental class and the control class were given a pretest to determine the initial state of the group. Posttest is then performed after treatment is given. This research draft is described as follows:



The subject in this study was all students of class V Elementary School Pajaran 01 and Pajaran Elementary School 05 district of Madiun Semester II year lesson 2018/2019 with the number of students each class of 25 students. The research subject is taken from two different schools because it is not a parallel class but has the same qualifications. This research was conducted in Pajaran 01

Elementary School and Pajaran 05 Elementary School, Saradan District, Madiun Regency. Consideration as a research place because these schools have the same qualifications, classes that have the same facilities and learning room conditions, and classes that have students with equal abilities. The time of study took place in April in the even semester of lesson 2017/2018.

The data collection techniques used are observations and tests. The research instruments used are observation sheets and test sheets. This observation sheet will be given to the observer. The task of the observation is to observe and assess whether during treatment is done in both the control class and the experiment already in accordance with the syntax of the lesson or not, and in the treatment whether the *Problem Based Learning* model With the experimental strategy has been running well or not. The test is used to measure the critical thinking skills of students in the elementary school Pajaran level 01 Saradan Madiun using the questions of the descriptions and questions of multiple choice. The question form is about the description with a total of 10 items, and a question of double choice of 10 items. This test is for obtaining pretests and posttest data, to determine the difference in experimental classes and control classes. Control classes using conventional learning. And experiment classes with the *Problem Based Learning* model. To measure the initial students ' ability before learning begins using Pretest. As for measuring the ability of students after the learning process measured using postest. The data analysis techniques used are related to a quantitative approach that is the validity test, reliability test, normality test, homogeneity test, and hypothesis test (*t-test*).

Result

The collection of data in this study was obtained by conducting experiments, with the use of *Nonequivalent Control Group Design*. The experiment class is a class that is given a treat (X). In experimental classes, there was learning with the *Problem Based Learning* model. While the control class is a class that is not given treatment. In this class, the control applies conventional learning (without treatment). The experimental class in this research is the grade V students of Pajaran Elementary School 01 and who became the control class namely the first grade V student Pajaran 05 Elementary School. In the data retrieval, both the experimental class and the control class are given a pretest to know the initial state of the group. Posttest is then performed after treatment is given.

As for the components of research instruments conducted validation test first, such as the validation sheet test the critical Thinking skills of students (pretest and posttest), while for the observation sheet teacher activity and students do not need to be tested Validation but more adapted to the indicator alone is related to the implementation of the *Problem Based Learning* model.

Therefore, before conducting the research, researchers conducted preliminary observations on the class of controls and experiments to observe the activities and skills of students' critical thinking in learning. After gaining from the early observations, the students' critical thinking activities and skills have not increased, so many students are passive and have not been able to think critically in the learning process. Because of this, researchers know the problems that teachers face in learning.

Test Result Validity Of Critical Thinking Skills

To know the validity of the critical thinking skills used formula correlation product moment from Pearson by using the *SPSS 24.0 for Windows* application. The study tested the validity of 25 control classes and 25 experimental classes of research samples and processed data. With the provisions of R_{table} 0.3051, N = 25. The rule of decision is at a significant level of 0.05 if $R_{count} > R_{table}$ means valid and if $R_{count} < R_{table}$ means invalid. The result of the validity analysis of the item of multiple choice and the description with the formula of product moment correlation is shown in the table below:

Table 4.1 Validity Test Result Multiple Choice Questions Critical Thinking Skills

Item Questions		**R_{count}**		**R_{table}**	**Description**
		Pretest	***Posttest***		
Question 1	*PearsonCorrelation*	0,465	0,793	0,3051	Valid
Question 2	*PearsonCorrelation*	0,646	0,719	0,3051	Valid
Question 3	*PearsonCorrelation*	0,556	0,867	0,3051	Valid
Question 4	*PearsonCorrelation*	0,778	0,788	0,3051	Valid
Question 5	*PearsonCorrelation*	0,875	0,888	0,3051	Valid
Question 6	*PearsonCorrelation*	0,557	0,657	0,3051	Valid
Question 7	*PearsonCorrelation*	0,576	0,589	0,3051	Valid
Question 8	*PearsonCorrelation*	0,644	0,742	0,3051	Valid
Question 9	*PearsonCorrelation*	0,436	0,475	0,3051	Valid
Question 10	*PearsonCorrelation*	0,654	1	0,3051	Valid

Source: secondary data proceed, 2017

Table 4.2 Validity Test Result Essay Questions Critical Thinking Skills

Item Questions		**R_{count}**		**R_{table}**	**Description**
		Pretest	***Posttest***		
Question 1	*PearsonCorrelation*	0,743	0,775	0,3051	Valid
Question 2	*PearsonCorrelation*	0,749	0,764	0,3051	Valid
Question 3	*PearsonCorrelation*	0,837	0,863	0,3051	Valid
Question 4	*PearsonCorrelation*	0,446	0,678	0,3051	Valid
Question 5	*PearsonCorrelation*	0,674	0,884	0,3051	Valid
Question 6	*PearsonCorrelation*	0,473	0,488	0,3051	Valid
Question 7	*PearsonCorrelation*	0,664	1	0,3051	Valid
Question 8	*PearsonCorrelation*	0,463	0,674	0,3051	Valid
Question 9	*PearsonCorrelation*	0,575	0,598	0,3051	Valid
Question 10	*PearsonCorrelation*	0,564	1	0,3051	Valid

Source: secondary data proceed, 2017

Based on the validity test in tables 4.1 and 4.2 above, out of 10 items of multiple choice and 10 questions, the description is said to be valid on tested critical thinking skills. The instrument about the students ' critical thinking skills resulted in a colerration value of more than 0.3051, hence it qualifies that $R_{count} > R_{table}$. So, all items of critical thinking skills are considered valid and the next stage is reliability test.

2. Results Of The Reliability Test Of Critical Thinking Skills

To analyze data critical thinking skills are used to help SPSS 24.0 for Windows by using Cronbach's Alpha formula. Here below is the result of the description of test instrument validity analysis of critical thinking skills by using Cronbach's Alpha formula:

Table 4.3 Results Of Reliability Test Problem Of Critical Thinking Skills

Reliability Statistics

Alpha Cronbach's			**N of Items**
	Pretest	***Posttest***	
Multiple Choice and Essay	.829	.846	20

Source: secondary data proceed, 2017

Based on the results in table 4.3 above, it can be known for *Alpha Cronbach's* value on the control class and the experimental classes for variable critical thinking skills have a value greater than 0.70.

Then the instrument can be concluded on critical thinking skills is reliable, which means it is worth using in research.

The Data obtained in this research from the observation results of students' activities conducted before and during treatment with the application of the *Problem Based Learning* model, while test students' critical thinking skills measured during pretests and posttest. The results of the description include students' activities and students ' critical thinking skills, and researchers can describe below:

1. Student Activity observations

Observations of student activity in the control class and experiment classes when pretests and posttest are performed with an observation sheet of student activity. Observation of student activity during pretests (before treatment), while Posttest is performed on the control class when applying with conventional models and experiment classes when applying with the *Problem Based Learning* model. The observation Data in the control class and the experiment class as the first pretest-posttest must be counted for the value interval, making it easier for researchers to determine the total number of frequencies. Then the results of observation of student activity can be seen below:

Table 4.4 Student Activity Control Classroom Percentage Data

Final Score	Percentage (%)	Number Of Students		Criteria
		Pretest	**Posttest**	
1-5	21%-40%	-	-	Not Good
6-10	41%-60%	21	-	Good Enough
11-15	61%-80%	4	22	Good
16-20	81%-100%	-	3	Very Good

Source: secondary data proceed, 2017

According to the 4.4 table, show that students' activity in the control class when pretests there are 21 students who get a score of 6-10, and 4 students who get a score of 11-15, while posttest there are 22 students who get a score of 11-15, and 3 students who get score 16-20.

Based on the above description, the value of the activity when pretests have not reached the criteria of submission, but when given posttest in learning using conventional models the value is increased with the criteria "good" and reached The school's predefined criteria is 75.

Table 4.5 Student Activity Experiment Class percentage Data

Final Score	Percentage (%)	Number Of Students		Criteria
		Pretest	**Posttest**	
1-5	21%-40%	-	-	Not Good
6-10	41%-60%	13	-	Good Enough
11-15	61%-80%	6	3	Good
16-20	81%-100%	6	22	Very Good

Source: secondary data proceed, 2017

According to the 4.5 table, indicating that students' activity in the experiment class when pretests there are 13 students who get a score of 6-10, there are 6 students who score 11-15, and 3 students who get a score of 16-20, while posttest there are 3 students who get Score 11-15, and 22 students who get the score 16-20.

Based on the above description, the value of the activity when pretests have not reached the criterion but after the treatment with the application of the *Problem Based Learning* model and given posttest its value increased with the criteria " It is excellent, so exceeding the standard criteria of the school's determination is 75.

2. Observation result of student critical thinking skills

The research results for the students' critical thinking skills are obtained from the pretest and posttest results. The purpose of this activity is to measure students ' critical thinking skills by using the

Problem Based Learning model. The following are the test results of students' critical Thinking skills:

Table 4.7 Data Percentage Of Student Critical Thinking Skills Control

Interval values	Frequency		Percentage	
	Pretest	***Posttest***	***Pretest***	***Posttest***
25 - 30	-	-	-	-
35 - 40	19	-	85%	-
45 - 50	-	-	-	-
55 – 60	6	-	15%	-
65 – 70	-	6	-	15%
75 – 80	-	9	-	40%
85 – 90	-	7	-	30%
95 - 100	-	3	-	5%
Total	25	25	100%	100%

Source: secondary data proceed, 2017

In table 4.7 shows that students ' critical thinking skills when pretests are there are 25 students who get scores with a range of 25-70 so that many students who do not reach the prescribed criteria are 75. When posttest there are 6 students who get the value with a range of 65-70 while earning value with a range of 75-100 that there are 19 students. Therefore, proven value of students ' critical thinking skills when pretests have not reached the criterion of submission, but after given learning with conventional methods and given posttest its value increased with the criterion "good".

As for comparing the results between the control class and the experimental class, here are the description of the experiment class results:

Table 4.9 Data Percentage Of Student Critical Thinking Skills Experiment

Interval Values	Frequency		Percentage	
	Pretest	***Posttest***	***Pretest***	***Posttest***
25 - 30	-	-	-	-
35 - 40	15	-	55%	-
45 - 50	-	-	-	-
55 – 60	10	-	45%	-
65 – 70	-	3	-	5%
75 – 80	-	8	-	40%
85 – 90	-	6	-	15%
95 - 100	-	8	-	40%
Total	25	25	100%	100%

Source: secondary data proceed, 2017

In table 4.9 shows that students ' critical thinking skills when pretests are there are 25 students who get scores with a range of 25-70 so that many students who do not reach the prescribed criteria are 75. When posttest there are 3 students who get a value with a range of 65-70 while earning value with a range of 75-100 that there are 22 students. Therefore, proven value of students ' critical thinking skills when pretests have not reached the criteria of submission, but after being given treatment with the application of the *Problem Based Learning* model and given posttest value greatly increased with the criteria "excellent", and exceeds the standard value of the criterion of the submission of 75.

Test Normality

The description of the test result normality is in the table below:

Table 4.10 Test result normality

Variable	Class	Significance
Activity *(Pretest)*	Experiment	0.094
Activity *(Posttest)*		0.270
Activity *(Pretest)*	Control	0.083
Activity *(Posttest)*		0.200
Critical Thinking Skills *(Pretest)*	Experiment	0.088
Critical Thinking Skills *(Posttest)*		0.234
Critical Thinking Skills *(Pretest)*	Control	0.086
Critical Thinking Skills *(Pretest)*		0.202

Source: secondary data proceed, 2017

Table 4.10 above is the description of test results normality by using the help of SPSS 24.0 for Windows Kolmogorov-Smirnov with a significance of 0.05. In the activity variable student value significance class experiments on pretests get a value of 0094 > 0.05, whereas for student activity variables value significance on posttest get a value of 0.270 > 0.05, so it can be stated that Both variables are distributed normally. As for the test results normality of student activity for the control class shows the significant value on the pretests gets a value of 0.083 > 0.05, while for the student activity variable value significance on Posttest gets the value 0.200 > 0.05, this indicates that the value is a normal distribution. While the variable of critical thinking skills on the experimental class is as follows: at pretests get a value of 0.088 > 0.05, while for a variable student's critical thinking skills value significance on the posttest gets the value 0234 > 0.05, so it can be stated that both variables are distributed normally. However for the test result, normality control class critical thinking skills show the significant value of the pretests to get a value of 0.086 > 0.05, and for the variable students critical thinking skills value significance on posttest Get the value 0.202 > 0.05, this indicates that the value is a normal distribution.

Test Homogeneity

A test of homogeneity is used to test the similarity of variances between two groups that are homogeneous or not. In the test of homogeneity, researchers use *SPSS 24.0 for Windows* program with the test technique one-way ANOVA at a level of significance 0.05. The reason for using *one way ANOVA* test is to facilitate the analysis of several different samples with the smallest risk of error and *one way ANOVA* test is relatively easy to modify and can be developed for various forms of experimentation easier and complicated Large and small quantities. As for the test results homogeneity activity and critical thinking skills can be seen in the table's description below:

Table 4.11 Test Result Of The Homogeneity Of Student Activity Controls And Experiments

Variable	Levene Statistic	df_1	df_2	Sig.
Control				
Activity *(pretest)*	1,000	2	25	0,334
Activity *(posttest)*	1,194	2	25	0,354
Experiment				
Activity *(pretest)*	1,000	2	25	0,387
Activity *(posttest)*	1,194	2	25	0,396

Table 4.12 Test Result Homogeneity Control Class And Experimental Students Critical Thinking Skills

Variable	Levene Statistic	df1	df2	Sig.
Control				
Critical Thinking Skills (pretest)	1.072	2	25	0,304
Critical Thinking Skills (posttest)	1.090	2	25	0,313
Experiment				
Critical Thinking Skills (pretest)	1.035	2	25	0,336
Critical Thinking Skills (posttest)	1.098	2	25	0,378

Source: secondary data proceed, 2017

Based on the above description, it shows that the results of each activity variable and the critical thinking skills derive more than the significance of 0.05. It can then be withdrawn that both homogeneous variances (Ho rejected) and test analysis requirements have been fulfilled.

Hypothesis Test

A. Student Activity Hypothesis Testing Results

This hypothesis test uses the *Independent Sample T-Test* which aims to determine whether or not the influence of the *Problem-Based Learning* model on the experiment class than the control class with conventional learning on student activities Class V on material social issues in the local environment. Then the hypothesis results can be seen in table 4.13 below:

Table 4.13 Testing Results Of The Experiment Class Student Activity Hypothesis

Group Statistics

	Pretest-Posttest	N	Mean	Std. Deviation	Std. Error Mean
Activity	Posttest	25	8.01	2.034	.325
	Pretest	25	6.31	1.630	.263

Table 4.13 Test Results In The Activity Of The Student Experiment Class

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
Activity	Equal variances assumed	2.034	.134	**4.762**	50
	Equal variances not assumed			4.762	66.664

Source: secondary data proceed, 2017

The results of the analysis in table 4.13 showed that the activity T_{count} value is 4,762. Based on the results of the analysis of Independent test samples obtained T_{count} (4,762) < T_{table} (2,080) with df 23 at significance level 0.05. So, Ho is rejected and Ha is accepted. It can be concluded that there is a significant influence from the application of the *Problem Based Learning* model to the activity of class V students on material social problems in the local environment between before treatment (pretest) and after treatment (posttest).

Table 4.14 Test Result Hypothesis Of Student Activity Control Class

Group Statistics

	Pretest-Posttest	N	Mean	Std. Deviation	Std. Error Mean
Activity	Posttest	25	6.31	1.022	.243
	Pretest	25	6.12	1.004	.215

Table 4.14 Test Result Hypothesis Of Student Activity Control Class

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
Activity	Equal variances assumed	1.205	.121	**3.456**	50
	Equal variances not assumed			3.456	45.678

Source: secondary data proceed, 2017

The results of the analysis in the 4.14 table indicate that the student activity value of the control class is 3,456. Based on the results of the analysis of *Independent Samples T-Test* obtained T_{count} (3,456) < T_{table} (2,080) with df 23 at significance level 0.05. So, Ho is rejected and Ha is accepted, so there was a difference in student activity before treatment.

Thus, from the above acquisition, in the class of experiments and control classes in the hypothesis testing it can be concluded that there is a significant influence on students' activities in the experiment class better by applying a *Problem Based Learning* model that shows T_{count} 4.762 (df 23) > T_{table} 2.080 (df 23) and the value of sig. (2-failed) 0.000 < 0.005, compared to the control class by applying conventional learning that shows T_{count} 3.456 (df 23) > T_{table} 2.080 (df 23) and The value of sig. (2-failed) 0.000 < 0.005. This proved to be the experimental class of T_{count} 4.762 > from the control class of T_{count} 3.456 which shows from the hypothesis testing that the activity of students following learning by using models *Problem Based Learning* experienced a better improvement.

B. Testing Results Of Student Critical Thinking Skills Hypothesis

This hypothesis test uses the *Independent Samples T-Test* which aims to determine whether or not the influence of the *Problem Based Learning* model on the experimental class than the control class with conventional learning of the skills critical thinking class V students on material social issues in the local environment. Then the hypothesis results can be seen in table 4.15 below:

Table 4.15 Test Result Hypotheses For Experimental Class Students' Critical Thinking Skills

Group Statistics

	Pretest & Posttest	N	Mean	Std. Deviation	Std. Error Mean
Critical Thinking Skills	Posttest	25	39.48	13.748	2.548
	Pretest	25	31.74	10.967	1.496

Table 4.15 Results Hypothesis Testing The Critical Thinking Skills Of Students Of Experimental Classes

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
Critical Thinking Skills	Equal variances assumed	1.079	.206	12.643	50
	Equal variances not assumed			12.643	72.134

Source: secondary data proceed, 2017

The results of the analysis in table 4.15 showed that T_{count} value of students' critical thinking skills amounted to 12.643. Based on the results of the analysis of Independent test samples obtained T_{count} (12.643) < T_{table} (2.080) with df 23 at significance level 0.05. So, Ho is rejected and Ha is accepted. It can be concluded that there is a significant influence from the application of the *Problem Based Learning* model to the critical thinking skills of class V students on the material social problems in the local environment between before treatment (pretest) and after treatment (posttest).

Table 4.16 Results Hypothesis Testing Hypocritical Thinking Students Control Classes

Group Statistics					
	Pretest & Posttest	N	Mean	Std. Deviation	Std. Error Mean
Critical Thinking Skills	Posttest	25	29.43	12.647	1.293
	Pretest	25	29.12	10.024	1.210

Table 4.16 Results Hypothesis Testing Hypocritical Thinking Students Control Classes

Independent Samples Test					
		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
Critical Thinking Skills	Equal variances assumed	1.043	.201	**10.342**	50
	Equal variances not assumed			10.342	52.642

The results of the analysis on table 4.16 showed that T_{count} value of students' critical thinking skills in the control class amounted to 10,342. Based on the results of the analysis of *Independent samples T-Test* obtained T_{count} (10,342) < T_{table} (2,080) with df 23 at significance level 0.05. So, Ho is rejected and Ha is accepted, so there was a difference in students' critical thinking skills before treatment.

Thus, from the above acquisition, in experimental classes and control classes in the hypothesis testing it can be concluded that there is a significant influence on students' critical thinking skills in the experiment class better by applying models *Problem Based Learning* that shows T_{count} 12,643 (df 23) > T_{table} 2,080 (df 23) and the value of sig. (2-failed) 0.000 < 0.005, compared to the control class by applying a conventional learning that shows T_{count} 10,342 (df 23) > T_{table} 2,080 (df 23) and the value of sig. (2-failed) 0.000 < 0.005. It is proven experimental class results T_{count} 12,643 > of the control class results of T_{count} 10,342 which shows from the hypothesis testing that the critical thinking skills of students who follow Learning by using the *Problem Based Learning* model experienced a better improvement.

Discussion

A. Influence Of Model *Problem Based Learning* On Student Activity

This research aims to determine if there is any influence on the *Problem Based Learning* model of student activity. This is in line with what Sarofah describes (2015, p. 27) Learning activities that are very important to students, as they provide opportunities for students to come into contact with the objects being learned as wide as possible because thereby The process of knowledge construction is going to be better. Activity indicators used include: orientating problems with students, organizing students to learn, guiding independently/group investigations, developing and presenting work, analyzing and evaluating processes Troubleshooting. Observation of students' activities carried out prior to treatment and during the learning process using the *Problem Based Learning* model.

Based on the analysis of the results presented in chapter IV, the discussion of this chapter will discuss related to the results of the research and focus on the findings obtained justification between findings with theoretical studies. In the description of table 4.10, you can know that both groups tested are groups of students using the *Problem Based Learning* model and groups that use only conventional learning models using Curriculum 2013. From the table's description, the student activity variables of the class significance value experiments on pretests get a value of 0094 > 0.05, whereas for student activity variables the significance value on posttest gets the value 0270 > 0.05, so it can be stated that both variables are distributed normally. As for the test results normality of student activity for the control class shows the significant value on the pretests gets a value of 0083 > 0.05, while for the student activity variable value significance on posttest gets the value 0200 > 0.05, this indicates that the value is a normal distribution.

Based on the 4.11 table observation results, the results of each activity variable gain more than the

equivalent significance of 0.05. It can then be withdrawn that both homogeneous variances (Ho is rejected) and test analysis requirements have been fulfilled.

Based on observations from the 4.6 table shows that student activity in the control class when pretests there are 21 students who get a score of 6-10, and 4 students who get a score of 11-15, while posttest there are 22 students who get a score of 11-15, and 3 students Who got the score 16-20. Then the value of the activity when Pretests has not reached the criteria of the submission, but when given posttest in learning using a conventional model of value is increased with the criteria "good" and achieve the criteria of the complete submission Determined by the school is 75. As for the 4.5 table, shows that students' activities in the experiment class when pretests there are 13 students who get a score of 6-10, there are 6 students who got a score of 11-15, and 3 students who get a score of 16-20, while posttest there are 3 students Get a score of 11-15, and 22 students are getting a score of 16-20.

Based on the above description, the value of the activity when pretest hasn't reached the submission criteria, but after being given treatment with the implementation of the *Problem Based Learning* model and given posttest its value increased with the criteria "excellent", Exceeding the standard criteria of the submission has been determined by the school is 75.

The description of the 4.13 table shows that the activity T_{count} value is 4,762. Based on the results of the analysis of Independent test samples obtained T_{count} value (4,762) < T_{table} (2,080) with df 23 at significance level 0.05. So, Ho was rejected and Ha accepted. It can be concluded that there is a significant influence from the application of the problem-based learning model to the activity of class V students on material social problems in the local environment between before treatment (pretest) and after treatment (posttest). While in table 4.14 shows that the student activity value of T_{count} in the control class is 3,456. Based on the results of the analysis of Independent samples T-Test obtained T_{count} value (3,456) < T_{table} (2,080) with df 23 at significance level 0.05. So, Ho is rejected and Ha is accepted, so there was a difference in student activity before treatment. This proved the experimental class of T_{count} 4,762 > from the control class of T_{count} 3,456 which shows from the hypothesis testing that the activity of students who follow the learning by using the learning model of *Problem Based Learning* experienced better improvement

The influence of the *Problem Based Learning* model of student activity in the experimental class is in line with the research conducted by Grigg and Lewis (2018) that this *Problem Based Learning* model becomes an alternative to improving the activity Invite students to be more active in learning.

From the results of the research above in relation to the model of *Problem-Based Learning*, there is a significant influence of students' activity in the change between classes using the *Problem Based Learning* model in comparing classes that use only Conventional learning models.

The findings were also supported by research related to the *Problem Based Learning* model conducted by Akinoglu, Ozkardes and Tandogan in the year 2017 under the title "The Effects of Problem-Based Active Learning in Science Education on Students' Academic Achievement, Attitude and Concept Learning "that the *Problem-Based Learning* model is very appropriate or used as a learning model to improve performance, even the activity of students in the classroom. The equation that exists in this study is that the same has a free variable that is a *Problem Based Learning* model while the difference is that the previous research also measures student achievement, while the study does not measure student achievement. But both of these studies show good results and have an influence on experimental classes.

Based on previous research and theory studies, it greatly strengthened the research that there could be a significant influence on the implementation of the problem-based learning model on the activities of students between Pretest and After treatment (posttest).

B. Influence Of *Problem Based Learning* Model On Students' Critical Thinking Skills

The research aims to determine if there is an influence on the *Problem Based Learning* model of students' critical thinking skills. critical thinking ability is a process to think rationally to be able to fit a problem or cause. In the learning process, students are given questions to test their critical thinking skills. Indicators of critical thinking skills used include: focusing questions, analyzing arguments, asking and answering questions, consider whether the source is trustworthy or not, observing and

considering the report observes, inducing and considering induction results, creating and determining consideration results, determining an action, interacting with others. This test of critical thinking ability contains a question in the form of multiple choice and description as many as 10 items each question with a view to measuring students' critical thinking skills. The test is done twice, first at the time of pretests and the second test is posttest. This test relates to material social issues in the local environment. In the case of the pretests test aims to know the initial condition of students before given the material social problems in the local environment. As for posttest aims to know the understanding and ability of students after given the material social problems in the local environment.

Based on the analysis of the results presented in chapter IV, the discussion of this chapter will discuss related to the results of the research and focus on the findings obtained justification between findings with theoretical studies. In the description of table 4.14, it is known that both groups were tested, which are groups of students using the *Problem Based Learning* model and groups that use only conventional learning models using the 2013 curriculum. From the table's description derived value significance for test results normality variable critical thinking skills in the experimental class are as follows: at pretests get a value of 0.088 > 0.05, while for variables critical thinking skills students value significance on posttest get a value of 0.234 > 0.05, so it can be stated that both variables are distributed normally. However for the test result, normality control class critical thinking skills show the significant value of the pretests to get a value of 0.086 > 0.05, and for the variable students critical thinking skills value significance on posttest Get the value 0.202 > 0.05, this indicates that the value is a normal distribution.

Based on the 4.15 table observation results, the variable results of the critical thinking skills gained more than the equivalent of 0.05 significance. It can then be withdrawn that both homogeneous variances (Ho rejected) and test analysis requirements have been fulfilled. Based on observations from the 4.8 table shows that the mean of student learning (pretest) is in the experimental class of 50.2 and for the value (posttest) of 85.5. So, Ho rejected and Ha accepted, there was a distinction of students' critical thinking skills on the experimental class before being given treatment, in other words, the nil hypothesis (Ho) is rejected.

The description in the 4.6 table shows that the average student critical thinking skill value (pretest) in the control class is 55.2 and for value (posttest) of 80.5. Whereas in tables 4.15 and 4.16 for the results of the *Independent Sample T-Test* on the influence of the students' critical thinking skills gained from the experimental class results and the control class can be concluded that there is a significant influence on Students ' critical thinking skills in the experimental class are better by applying a *Problem Based Learning* model that shows T_{count} 12.643 (df 23) > T_{table} 2.080 (df 23) and the value of sig. (2-failed) 0.000 < 0.005, compared to the control class by implementing Of the contemporary learning that shows T_{count} 10.342 (df 23) > T_{table} 2.080 (df 23) and the value of sig. (2-failed) 0.000 < 0.005. This proved experimental class results T_{count} 12.643 > from the control class results T_{count} 10.342 which shows of hypothesis testing that the critical thinking skills of students following learning by using the *Problem Based Learning* model experienced a better improvement.

Other advocates supporting this study relate to theories or components that have been met by students in the learning process based on the critical thinking theory presented by Ennis (1985, p. 39) with the acronym FRISCO: focus, reason, inference, situation, clarity, and overview, this description has been filled by students.

From the description and opinion that strengthened above, it can be concluded that the *Problem Based Learning* model has a significant influence related to the students ' critical thinking skills. Critical thinking is also focused in the sense of not only thinking, but we think about something we want to think about. Finally, unlike problem-solving, critical thinking content is a belief or motive that you want to be tested more precisely.

The findings were also supported by research conducted by Ikman, Hasnawati, and Rezky in the year 2016 under the title "Effect of *Problem Based Learning* Models of Critical Thinking Ability Students on The Early Mathematics Ability". This research has in common the skills of critical thinking, as well as this research both show good results. Results show that there is an increase in critical thinking skills in students who study using the problem-based learning model higher than the students who are

learning using conventional studies. This is because the *Problem-Based Learning* model is a strategy that begins with facing students on real-life issues (authentic) or simulated issues, so students are required to think critically and place students as problem-solving So that students become skilled in critical thinking. Therefore, this study both showed good and successful research results. Based on previous research and theory studies, it greatly strengthened the research that there could be significant influence from the application of the problem-based learning model to the students' critical thinking skills between before treatment (pretest) and after treatment (posttest). So, after the treatment of students obtained the value above the submission standard ≥ 75.

Conclusion

Based on the discussion of the research results that have been displayed, it was concluded that: the results of the analysis of the *Independent Sample T-Test* were obtained T_{count} value (3.456) < T_{table} (2.080) with df 23 at significance level 0.05. So, Ho is rejected and Ha is accepted, so there was a difference in student activity before treatment. This proved the experimental class of T_{count} 4.762 > from the control class of T_{count} 3.456 which shows from the hypothesis testing that there is an influence on the application of the Problem Based Learning model of the students' activities of social problems in the local environment in class V students of Pajaran Elementary School 01 Saradan Madiun. The average value of students' critical thinking skills (pretest) in the control class is 55.2 and for the value (posttest) of 80.5. As for the results of the *Independent Sample T-Test* on the influence of students' critical thinking skills gained from the experimental class results and the control class can be concluded that there is a significant influence on the thinking skills Students in the experimental class are better by applying a *Problem Based Learning* model that shows T_{count} 12.643 (df 23) > T_{table} 2.080 (df 23) and the value of sig. (2-Failed) 0.000 < 0.005, compared to the control class by applying learning the conference which shows T_{count}10.342 (df 23) > T_{table} 2.080 (df 23) and the value of sig. (2-failed) 0.000 < 0.005. This proved to be the experimental class of results of T_{count} 12.643 > from the control class of the results of T_{count}10. 342 indicating that there is an influence implementation of the *Problem Based Learning* model of students' critical thinking skills of social problems in the local environment in class V students of the Elementary School Pajaran 01 Saradan Madiun.

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