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The Effect of Problem Based Learning Model on Students Learning Achievement (A Quasi Experimental on The Subject of Economics)

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***Abstract**: The purpose of this study was to determine the effect of learning model is based on the problem (Problem based Learning) towards improving student learning outcomes (Quasi-Experimental Study in class XI social Sciences state senior high school 1 Saparua). This type of research is an experimental study with research design non Equivalent control group. The technique of collecting data using several methods such as questionnaires, observations and tests to measure learning outcomes. Data analysis using quantitative analysis using different test (t-test). Based on the results of data analysis can be concluded that there is a significant difference in student outcomes between experimental class control class after using model based problem (Problem Based Learning) this is evidenced by the results v_{alue} greater than t_{table} that is equal to 6.994> 1.99 and p Value-0.000 <0.05, H0: $\mu 1 = \mu 2$ rejected. This shows that the learning process using the learning model based on the problem to improve learning outcomes.*

***Keywords**: Problem Based Learning Model, Learning Outcomes*

I. Introduction

Education is one way to fix, improve the quality of life. With education a person can increase the potential in him. However, education is not only meant for personal development alone but also at the root of a country's development. National education goals clearly indicate towards the achievement of the ideals of formal education in order to realize the ideal dignified Indonesian civilization. The role of educational institutions is very important to help the formation of a potential resource. Education through formal institutions is a very appropriate way to improve the quality of learning undertaken by teachers in order to achieve learning goals. Guru is an element in the learning process are required to have skills in all matters relating to the implementation of classroom teaching to become professional teachers and competent in their fields. According Sardiman (2004: 165), a competent teacher is a teacher who is able to manage teaching and learning program. Manage here has a broad meaning which relates to how a teacher is able to master the basic skills taught, such as opening and closing the lesson, explaining, using media, asking questions, providing reinforcement, and so forth, as well as how teachers implementing the strategy.

Teachers as personnel occupy a strategic position in the development of human resources required to continue to follow the development of new concepts in the world of education. In operational frontline teachers is that you can directly take measures to improve student learning outcomes through the learning process. Teachers should be able to design learning interesting and not boring for students. Teachers play an important role for the success of the students even as good as any served curriculum, facilities and infrastructure are met, but when the teacher is not qualified then the learning process is not said to be good. An ideal teacher will be able to act and think critically in performing their duties in a professional and be able to find an alternative that should be taken in the learning process in order to achieve the purpose of learning itself.

In interviews with the economics teacher in class XI Social Sciences state senior high school 1 Saparua that the learning activities carried out are still centred on the teacher. The teacher uses only conventional learning model and students only passively accept what is taught by the teacher. Teachers did not master the learning model is varied so that the learning process goes in one direction. This resulted in a lack of student participation in learning activities. They tend to be quiet when the teacher asked about the material presented. The dominant learning activities carried out in the learning process is to listen and take notes. The learning process of this kind is clearly less encouraging learners to think and creativity. This causes low learning ability of students, especially on economic subjects. In addition, students also prefer to solve problems or tasks assigned by the teacher alone, more students to be individuals in completing its tasks. Based on this it takes effort to enable students to exchange ideas and support each other in the learning process.

The learning process is very impact on student learning outcomes. Watson (2002: 208) defines a learning outcome as 'being something that students can do now that they could not do it previously- a change in people as a result of a learning experience'. Learning outcomes offer a means by the attention can be focused on

the actual achievements of students and this represents a more realistic and genuine measure of the value of education than measures of teaching input (Maher, 2004). Learning outcomes is a product of the learning process in which covers two aspects: cognitive and affective outcomes ((Lizzio et al., 2002).

Based on the data obtained from the learning outcomes that the teacher is seen that there are many test results are not complete because it is below the value specified minimum completeness criteria 70. Where the school is 32 students of class XI IPS that follows the replay, only 10 students were declared complete and 22 students did not complete because not yet reached the minimum completeness criteria (KKM) set the school. Noting the above issues that the teacher concerned is still frequently use conventional learning models, conventional model certainly not a mistake but when continuously used then students feel bored and will have an impact on student learning outcomes. Therefore search, select and sort the models of learning that excites needs to be done by the teacher.

By looking at the above it seems necessary to change the way students learn in the learning process and the interaction between students and teachers, so that the more expensive the learning activities of students. In addition, the flow of the learning process does not have to come from the teacher to the students, each student can also teach other students. PBL Learning deviates from more conventional strategies by restructuring traditional teacher-student interactions toward active, self-directed learning by the student (Stepien and Gallagher; Torp& Sage, 1998; Savery& Duffy, 1994;, 1993; Birch, 1986). Problem-based learning (PBL) is Considered a student-centred learning approach in the which inspired students to apply critical thinking through simulated problems in order to study complicated multifaceted, and practical problems that may have or not have standard answers (Huang & Wang, 2012).

According Arends (1997) teaching by problem is a learning approach where students work on authentic problems with a view to construct their own knowledge, inquiry and to develop higher level thinking skills, develop independence and confidence. According to Barrows (2002), the key components of PBL are (1) unresolved, ill-structured problems that will generate multiple thoughts about the cause and solution, (2) a student-centred approach in which students determine what they need to learn, (3) teachers serve as facilitators and tutors, and (4) problems are authentic and reflect professional practice. Barrows (1996) Also Suggests that learning in a PBL environment should be integrated from a wide range of disciplines or subjects such that students study and integrate information from diverse disciplines that Might relate to understanding and solving a particular problem. In short, is a PBL approach to learning in which students work together to find solutions to complex problems (Ferreira &Trudel, 2012).

In PBL, teachers coach students with suggestions for further study or inquiry but do not assign predetermined learning activities. Instead, students pursue solutions Reviews their own problems by clarifying a problem, posing Necessary questions, researching Reviews These questions, and producing a product that displays Generally Reviews their thinking. These activities are conducted in collaborative learning groups that solve the same problem often indifferent ways and arrive at different answers (Mergendoller, J. R, et al: 2006).

Based on the above background, the problems in this study is whether the learning model based on the problem (Problem Based Learning) effect on improving student learning outcomes in class XI Social Sciences state senior high school 1 Saparua.

II. Research Method

The research design used in this research was Quasi Experimental or quasi-experimental, because in reality difficult to get the control group used for the study. The research design used in this research that "no equivalent control group pre-test post-test Design" where this design involved two groups were compared, the experimental group and the control group. The population in this study were all students of class XI Social Sciences state senior high school 1 Saparua. Number of class XI senior high school 1 Saparua were 7 classes with 239 students enrolled.

Data analysis techniques used in this research is descriptive quantitative by using different test average or formula t-test. These statistical tests used to analyze the hypothesis of the two data sets either pairs or free. T test (*independent sample test*) in this study is used to examine differences in learning outcomes of students who use the learning model based on the problem (*Problem Based Instruction*) and students who use conventional learning models.

III. Findings

As noted in the introductory chapter that this study aims to look at improving student learning outcomes that get economic learning using learning model based on the problem (*Problem Based Learning*) and who received conventional learning. To determine the ability of students before and after learning by using learning model based on the problem (*Problem Based Learning*) conducted the initial test and final test. Test questions multiple choice used to measure learning outcomes. Problem is given relating to the subject of the post to general ledger Services Company.

In this research study subjects consisted of two classes of class XI Social sciences 2 as an experimental class and class XI Social sciences1 as the control class. The treatment happens in these two different classes, the experimental class were treated by using model based problem (*Problem Based Learning*) while the control class using conventional learning models. He began learning activities, performed a pre-test activities for both classes using the same matter. Besides pre-test post-test activities carried out are also conducted at the end of study using pre-test questions. In analyzing the results of these experiments, the t-test is done to see significant differences between the test results of the experimental class and control class, which includes a homogeneous test and test hypotheses. The following is a description of the research data as follows.

Analysis of the initial test (*pre-test*) experimental class and control class

Early tests (*pre-test*) student learning outcomes given to the experimental class and control class before treatment. Protest is given in the form of multiple choice as many as 20 items. The description of the learning outcomes of students in the experimental class and control are presented in table 3.1 below:

Table 3.1 Student Results At pre-test

Pre-test					
Class	N	Mean	Std. Deviation	Minimum	Maximum
Experiment	32	5.5312	1.41386	3.00	9.00
Control	32	5.5000	1.43684	3.00	9.00

Based on the analysis in Table 3.1 above is clear that the general picture of the average pre-test score for the experimental class and control class has no difference in the amount of 0.0312. With the same number of students for both classes of as many as 32 students shows that the minimum and maximum values of the experimental class and control class as great. Prior to test hypotheses of pre-test data is known, it is necessary to test the normality and homogeneity of data to determine the types of statistical tests performed to analyze the data of the pre-test.

Normality Test

Prior to test hypotheses of pre-test data is known, needs to normality test data to determine the type of statistical tests performed to analyze the data pre-test. Pre-test data normality test results for an experimental class and control class can be seen in table 3.2 as follows:

Table 3.2 Normality tests

Tests of Normality							
	Control	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	Df	Sig.	Statistic	Df	Sig.
Pre-test	Experiment	.146	32	.079	.951	32	.153
	Control	.136	32	.139	.947	32	.122
Source: the results if the data							

Based on the calculation pre-test data normality test experimental group, concluded that the normally distributed data visible on the Shapiro-Wilk normality test (SW) also produces a p-value of 0.153> 0.05. then H0 is accepted. This means that the null hypothesis that the pre-test scores in the experimental class or classes of learning gained by learning model based on the normal distribution problems. The same was seen in the control class or classes that derive conventional learning, where the Shapiro-Wilk normality test (WK) also produces 0.122 p-values> 0.05. This means zero hypothes is accepted. From these results it can be concluded pre-test scores of student learning outcomes for the experimental and control classes derived from normal distributed population.

Test Homogeneity

Homogeneity of variance test data. To test the data pre-test these two classes together or not. The test results for data homogeneity pre-test the experimental class and control are as follows:

Table 3.3 Test Homogeneity

Test of Homogeneity of Variances			
Levene Statistic	df1	df2	Sig.
.025	1	62	.874

Result of analysis SPSS 16.00 in table 3.3 shows that test the data homogeneity pre-test learning outcomes generates sig. by 0874. The homogeneity test results can be concluded that the value pre-test experimental class and control class has a homogeneous result. This is evident from the sig value for 0874> 0.05, it can be stated homogeneous. It can be concluded that the hypothesis test continued using t-test.

Hypothesis Testing

Having in mind that the data in the two groups of students were normally distributed and homogeneous, hypothesis test.

1. Test the learning outcomes of students in the experimental class pre-test the control class

Calculation of the t-test was conducted to test the first hypothesises that "there is no significant difference between the students' learning outcomes with a control class experimental class at initial measurement (pre-test). To more clearly seen the test results as follows:

Table 3.4 Differences Pre-test Test Results

Group Statistics					
	Control	N	Mean	Std. Deviation	Std. Error Mean
Pre-test	Experiment	32	5.5312	1.41386	.24994
	Control	32	5.5000	1.43684	.25400

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
Pre-test	Equal variances assumed	.025	.874	.088	62	.930	.03125	.35635	-.68108	.74358
	Equal variances not assumed			.088	61.984	.930	.03125	.35635	-.68109	.74359

Based on the analysis of SPSS 16:00 in table 3.4 shows that the value t_value of 0.88 with degrees of freedom for 62 or t_table 1.999 and p-value (two-tailed) of 0.930. From the analysis it can be seen that the value is smaller than t_table or -1999 <0.88 <1.999 and p-value of 0.930> 0.05, then H0: $\mu 1 = \mu 2$ accepted. The conclusion that the average score of pre-test the experimental class and control class as great, or the first hypothesis is accepted that there is no significant difference between the students' learning outcomes with a control class experimental class at initial measurement.

2. Test post-test learning outcomes of students in the experimental class with grade control.

Final test (post-test) student learning outcomes given to the experimental class and control class after the end of the learning process. Problem posts granted remain the same with a given problem on the pre-test given before the learning process, namely 20 items. The results of data processing post-test for the experimental class and control class can be seen in the following table:

Table 3.5: Data post-test experimental class and control class

Class	N	Mean	Std. Deviation	Minimum	Maximum
Experiment	32	15.5625	1.26841	14.00	19.00
Control	32	12.9375	1.70270	10.00	18.00

Based on table 3.5 above that in general the average score post-test for the experimental class and control class is 2.6250. Through the above table it can be seen that the minimum and maximum values of the post-test results for grade control is lower than the minimum value of the experimental class. Calculation of t-test to test the hypothesis that the two "there are differences in student learning outcomes in grade students experiment with control class at the final measurement (post-test) is as follows:

Table 3.6: Test Result Differences post-test Class Experiment and Control

Group Statistics					
	Class	N	Mean	Std. Deviation	Std. Error Mean
Post-test	Experiment	32	15.5625	1.26841	.22423
	Control	32	12.9375	1.70270	.30100

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
Post-test	Equal variances assumed	1.624	.207	6.994	62	.000	2.62500	.37534	1.87471	3.37529
	Equal variances not assumed			6.994	57.305	.000	2.62500	.37534	1.87349	3.37651

The results of the analysis by SPSS 16:00 in Table 3.6 shows that the value $_{count}$ of 6994 with a degree of freedom for 62 or t_{table} 1.999 and p-value (two-tailed) of 0.000. Based on the results of the analysis showed that t_{count} greater than t_{table} or 6,994> 1.99 and p-value of 0.000 are less than 0.05, then H0: $\mu 1 = \mu 2$ rejected. It can be concluded that the average scores on the post-test experimental class and control class is not as great or it can be said that the hypothesis is accepted that there are significant differences between students' learning outcomes with the experimental class control class at the final measurement (post-test).

3. Test difference in improving student learning outcomes in experimental class control class.

Test the hypothesis that the latter will analyze improving student learning outcomes that are subjected to learning by problem (Problem Based Learning) with untreated or who use conventional learning in teaching economics at State senior high school 1 Saparua. Improving student learning outcomes calculated using the formula Gain normalized data pre-test and post-test experimental class and control class. Comparison of the results of the calculation of the gain improving student learning outcomes experimental class and control class is as follows.

Table 3.7: The **average value of pre-test, post-test and gain the experimental class and control**

Statistic	Experiment class			control class		
	Pre-test	Post-test	Gain	Pre-test	Post-test	Gain
the amount of data	32	32	32	32	32	32
Average	27,7	77,8	0,69	64,7	27,5	0,5

Based on table 3.7, the average was 27.5 pre-test and post-test averages of 64.7 in the control class. These results showed no improvement in the result before doing the model of problem-based learning that is equal to 37.2 and normalized gain value that is equal to 0.5. Based on these results it can be concluded that in the control group experienced an increase in the medium category.

Results for the average pre-test and post-test for the experimental class was 27.7 and 77.8. These results showed no increase learning outcomes after application of Problem Based Learning model of the experimental class is 50.1 and normalized gain value of 0.7, so it can be concluded that the experimental class experienced a significant increase in learning outcomes. In accordance with the known value of the gain normalized experimental class at the high category of the control class. For more details can be seen in Table 3.8 below:

Table 3.8: Test Value Gain normalized On Two Classes

No.	Gain Score	experiment		Note	Control		Note
		F	%		F	%	
1.	g> 0,7	21	66	High	2	6	High
2	0,3 < g ≤ 0,7	11	34	Medium	28	88	Medium
3	g < 0,3	-	-	Low	2	6	Low
Amount		32	100		32	100	

Based on Table 3.8 it can be concluded that the experimental class students who scored gains with a high category as many as 21 students, the category of being as many as 11 students and no students who score at the low category, for the control class as much as two students who scored the gain in the high category, 28 students in the moderate category and 2 people in the low category.

Based on the above results, the results showed that an increase in student learning outcomes in treatment of experimental class learning model is based on the problem (*Problem Based Learning*) and grade control using conventional learning models.

Observations

The observations were made to see the activities of students and teachers in learning, interaction between students and teachers in the learning and interaction among students in learning by using learning model based on the problem (*Problem Based Learning*). Data from observation of activities of students and teachers during the learning process using the learning model based on the problem (*Problem Based Learning*) is as follows:

Activities Teacher

Results of teacher activity observation to look at the application of the use of the learning model based on the problem (*Problem Based Learning*) in the learning process can be explained as follows:

Based on observations of teacher activity in economic learning using learning model based on problem (*problem based learning*) can be seen that at this stage of the preparation of teachers able to carry out these activities well that the teacher has been carrying out a greeting, check the readiness of students (*the students condition*) prayer, attendance and do the pre-test, giving apperception, providing motivation to the students and teachers prepare classroom setting for learning, but in this stage it appears that the teacher did not prepare physically and mentally.

At the core activities that include the implementation of measures based learning problems (*Problem Based Learning*) performed very well where all the steps are carried out by the teacher starts from explaining the purpose of learning, logistics required, motivating students active, and solve the problem, the teacher in learning helps students define and organize learning tasks related to the problem, and to encourage students to collect information and expression to get an explanation and problem solving. Besides teachers help students prepare presentations and student work in the form of a report. The final step of the core activities of teachers to help evaluate the problem-solving process.

Then in stage use learning model is based on the problem (*Problem Based Learning*) teachers can implement this stage very well, it was seen from all the measures which have been implemented by teachers, starting from the submission of questions or issues, focusing on the linkages between disciplines, investigation authentic as well as produce/work, and the final step of this activity are students cooperate with each other, or a small group.

At the next stage the teachers have implemented the use of language with excellent views of teachers using spoken language orally and smoothly, using written language is good and right and the teacher can convey the message to the appropriate style.

Closing stages of this activity that teachers can implement this step with the overall very good, starting from the accuracy teachers timely end to learning as well as provide a conclusion at the end of the lesson.

Student activity

The results of students' observation activity seen from the attitude of students in the learning process the teacher can be explained as follows:

Based on observations activity of students in the learning economy by using model based problem (*Problem Based Learning*) students can carry out the learning activities, students have to listen to the direction of the teacher carefully, have a sense of responsibility in the tasks, establish communication within a group so as to reveal ideas / new ideas, and then the students were able to maintain or ideas put forward group.

Students in the learning process is able to express their opinions and respond to other students' opinions, and students have high motivation in learning, it is seen in the ability to listen to the information from the other groups. In addition, students have the ability to find solutions to solve the problem by connecting and giving examples of problems with surrounding phenomenon.

Students in the delivery of opinion they were able to respect the opinion of fellow group and the other groups as well use the time properly and actively participate concludes the discussion group, but the activities of students have not been able to utilize the resources and media well in learning to talk

The results of the questionnaire

The questionnaire about students' responses to the learning model based on the problem (*Problem Based Learning*) intends to determine the perception of students and teachers to the learning model based on the problem (*Problem Based Learning*).

The results of the questionnaire responses of students to the learning model based on the problem (*Problem Based Learning*).

There are 10 items of questions were answered by the students. After the questionnaires distributed to students, such as the results obtained in the following table.

Table 3.9: Results Questionnaire Responses of Students Problem Based Learning Model (Problem Based Learning)

NO.	Statement	Answer											
		SA		A		I		DS		SDS			
		F	%	F	%	F	%	F	%	F	%		%
1.	This learning model is a new learning model for you	26	81,25	4	12,5	2	6,25	0	0	0	0	32	100
2.	Usage Problem Based Learning model (Problem Based Learning), giving it easy for you in the learning process.	25	78,12	3	9,38	2	6,25	2	6,25	0	0	32	100
3.	Problem Based Learning Model (Problem Based Learning) can change the rigid and boring learning in the classroom.	23	71,88	6	18,75	2	6,25	1	3,12	0	0	32	100
4.	The learning model is based on the problem (Problem Based Learning) makes you more active role	28	87,5	3	9,38	1	3,12	0	0	0	0	32	100
5.	This learning model using the problems that stem from your real life environment	29	90,62	3	9,38	0	0	0	0	0	0	32	100
6.	Application of this model provides convenience to you in learning activities	23	71,88	6	18,75	2	6,25	1	3,12	0	0	32	100
7.	With this model, you easily understand the material they have learned.	20	62,5	9	28,13	2	6,25	1	3,12	0	0	32	100
8.	Problem Based Learning Model (Problem Based Learning) makes you more eager to learn, so you can improve your learning outcomes.	27	84,38	2	6,25	2	6,25	1	3,12	0	0	32	100
9	Problem Based Learning Model (Problem Based Learning) makes you more active in the learning process.	30	93,75	2	6,25	0	0	0	0	0	0	32	100
10	This model gives you a chance to think critically in groups to solve problems.	22	68,75	7	21,88	2	6,25	1	3,12	0	0	32	100

SA : Strongly agree
A : Agree
I : Indecision
DS : Disagree
SDS : Strongly disagree

Based on the results in Table 3.9 on the responses of students to use learning model based on the problem (Problem Based Learning) in the learning economy, it can be described that the learning model based issues are new models of learning for students this is evidenced by the answers to the most dominant as many as 81, 25%, the learning model based on the problem to provide convenience for the students in the learning process with evidence of the most dominant as much as 78.12%.

The learning model is based on the problem (Problem Based Learning) may change the way students learn a rigid and boring it is attested by the most value is 71.88%, this model also makes students more a more active role in the learning process it is seen from the most dominant answer as much as 87.5%, and the given problem stems from the real life of students in their environment, according to the answers most immediate is 90.62%.

The application of this model to provide convenience to the student in learning activities is seen from the results of the most dominant as much as 71.88%. This learning model make it easier for students to understand the material studied, this statement is evidenced by the most dominant response of 62.5%, in addition to the learning model based problems make students more enthusiastic about learning, so that students can improve their learning outcomes, this is evidenced by the best answer is 84.38.

The learning model is based on a matter of making students more active in the learning process, it is evident from the answers as much as 93.75%, and this model also provides an opportunity for students to think critically in groups to solve the problems, this is evidenced by the answer the most dominant as much as 68.75%.

The results of the questionnaire responses of teachers to the learning model based on the problem (*Problem Based Learning*)

Questionnaires about the response of teachers to use problem-based learning models (*Problem Based Learning*).

Table 3.10: Results Teacher Questionnaire Responses of Problem Based Learning Model (Problem Based Learning)

No	Statement	Answer				
		SA	A	I	DS	SDS
1	The learning model is based on the problem (Problem Based Learning) is a learning model that you have never applied to the learning process.	✓				
2	With a model based on the problem (Problem Based Learning), giving it easy for learners to receive learning		✓			
3	The learning model is based on the problem (Problem Based Learning) creates interaction between students and teachers	✓				
4	Based learning model (Problem Based Instruction), enables the delivery of material.	✓				
5	The learning model is based on the problem (Problem Based Learning). Using a problem that stems from real life students in their environment.	✓				
6	Learning by problems (Problem Based Learning) to provide convenience for students receiving learning.	✓				
7	This learning model to help improve student learning outcomes.	✓				
8	With the implementation of new learning model like this, the teacher can observe student work well in improving student learning outcomes.	✓				
9	Problem Based Learning Model (*Problem Based Learning*) to make students more active in the learning process.	✓				
10	The learning model directs learners to work together in completing a given problem and can collate the problem solving.	✓				

Based on the table 4:12 the results of questionnaires regarding the responses of subject teachers to use learning model is based on the problem (*Problem Based Learning*), stated that this learning model is a model of learning for the first time used by teachers, this model also makes it easy for the participants learners in accepting the teaching, other than that this model creates interaction between students and teachers.

The learning model is based on the problem makes it easy for teachers in the delivery of content and use problems stemming from the real life of students in their environment so as to facilitate the learning of students in receiving the delivered teacher. This has an impact on improving student learning outcomes.

The application of this new learning model as a teacher can observe student work well in improving student learning outcomes. This model also makes students more active in the learning process so that lead students to work well together in completing a given problem so that it can prepare the results of troubleshooting.

IV. Discussion

The research was conducted in two classes, namely class XI-social science 2 is 32 people by using model based problem (*Problem Based Learning*) while the XI class social science 1 consists of 32 people using a conventional model.

The first hypothesis (there is no difference between the results of student learning outcomes pre-test experimental class control class)

In the preparation phase before the delivery of material and treatment occur in the experimental class and control class, first performed the initial tests (pre-test) to determine the initial ability of students, based on research results obtained by the average value pre-test experimental class is equal to 5.312 and the average value of pre-test grade control is 5,500. These results indicate that the experimental class and control class is not that much difference, amounting to 0.0312. This is due to the absence of the treatment given.

Furthermore, based on the value (pre-test) was conducted testing normality, showed that the experimental class and control class came from normally distributed population, followed by the homogeneity test in order to assess the results of pre-test experimental class and control class has the ability homogeneous. The first hypothesis testing showed that ty_{coon} smaller than $t_{\_table}$ or 0.88 and $P_{\_value}$ of 0.930> 0.05, then H0: $\mu 1 = \mu 2$ accepted. From these results stating that there was no significant difference between the experimental class and control class at the beginning of the measurement (pre-test). The conclusion that the average score of pre-test the experimental class and control at large, or the first hypothesis is accepted that there are no significant differences in student learning outcomes between the control class and experimental class at initial measurement (*pre-test*).

Hypotheses to two (there are differences between the results of student learning outcomes post-test experimental class and control class).

In the calculation of the average value post-test experimental class is better than the control class, with a difference of 2.6250 the difference is caused by the experimental class had applied learning model based on problem (problem based learning). After analysis by using t-test formula, note that the value t_{count} 6.994 and p-value of 0.000 value less than 0.05, then h0: $\mu 1 = \mu 2$ rejected. It can be concluded that the average scores post-test the experimental class and control class is not as great or it can be said that the second hypothesis is accepted that there are significant differences between student learning outcomes experimental class and control class at the end of the measurement (post-test). Means that there are differences in learning outcomes of students who use the learning model based on the problem (*Problem Based Learning*) with conventional models.

Hypotheses to three (there are significant differences between the results of students in the class who received treatment of problem-based learning model Learning with the class using conventional learning models)

There are significant differences between the use of learning model is based on the problem (*Problem Based Learning*) in the experimental class learning model that is usually performed by teachers, the conventional learning model in the control class. This can be seen from the calculation of the gain in the experimental class of 0.7 or higher are in the category of 0.5 while the control class or middle category. From this description shows that there are differences significant increase in learning outcomes between the experimental class and control class.

Improving student learning outcomes are also strengthened by the observation of teachers (*observer*) on the activities of teachers and students, teachers can apply the learning model based on problem (*problem based instruction*) well and also be seen from the activities of students in participating in the learning process shown participation of students actively participating in convey ideas/new idea, and it maintains the proposed group. Furthermore, based on the results of the questionnaire showed a good attitude in the learning process, it is seen from the answers given on the questionnaire teachers that learning model based on the problem (*Problem Based Learning*) can make it easier for students to receive learning and creating interaction among students and teachers, while the students' responses to questionnaires show that students are more active in the learning process.

According to the results of observation in the use of learning model is based on the problem (*Problem Based Learning*) obvious that this learning model, is an approach to learning that is used to stimulate students' thinking in a situation that is oriented to real-world problems, including learning. It is as proposed by Arends (1997) is a matter of learning where students work in an authentic manner so that they can construct their own knowledge, prepare an invention (*inquiry*), higher level thinking skills and develop independence and self-confident nature.

In addition this model trains students to be able to present their ideas, as well as trained students to dare to show its findings, to argue and communicate to the other party through the learning activities that are expected to empower the student to become an independent individual, and is able to cope with any problems in life later on. In the implementation of learning, students are in demand are actively involved in the learning process through group discussion where the intelligence of students to solve problems is meaningful and contextual. Along with that, there is an increasing encountered from the first testing grade control and test both the experimental class.

Discussion of all three hypotheses above shows that the learning model based on the problem (*Problem Based Learning*) are applied in class XI social Sciences 2 state senior high school 1 Saparua, effect on improving student learning outcomes.

V. Conclusions and Recommendations

Conclusion

Based on the analysis and discussion of all phases of the study, researchers concluded that in general learning model based on the problem (*Problem Based Learning*) is applied in class XI state senior high school 1 Saparua effectively to improve student learning outcomes. The conclusions obtained by researchers as follows:

a) Before the given treatment (*treatment*) experimental class student learning outcomes is still lacking because the value pre-test average value of 5.5, and there was no significant difference between the experimental and control classes before learning to do treatments.
b) After treatment or treatment there is a difference in student learning outcomes between experimental classes using learning model is based on a problem with the control class that uses conventional learning model.
c) There are significant differences between the results of student learning using problem-based learning model learning the experimental class with students who use conventional model the control class.

Recommendations

1. Based on these results, the advice given is as follows:
   To the school, should continually provide motivation for teachers to apply various approaches and models of learning in the learning process.
2. Expected for teachers in order to use the learning model must be adapted to the characteristics of students and learning materials.
3. For economics teacher, learning model of problem-based learning can be used by teachers in the learning process in order to improve student learning outcomes.

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