

Effect of Problem Based Learning Strategy Versus Expository Learning Strategy and Motivation Toward Student Achievement Lesson in Social Studies

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Abstract: The purpose of this study was to determine (1) whether there is any difference in learning achievement between students who learn to use problem-based learning strategy with the ones who use the expository teaching strategy on Social Studies, (2). whether there is any difference in learning achievement between the students who have high motivation to learn with those having low learning motivation in learning social sciences, (3) whether there is interaction between the use of the two strategies of learning (PBL and expository) and the level of learning motivation on student achievement in social sciences. This study used a 2x2 factorial design. Subjects of the study involved 64 elementary grade students, divided into two groups consisting of 32 students as experimental group and 32 students as control group. The study was conducted in Social Studies. Data collection is done directly at the time of the research activities carried out. Data analysis was performed through the stages (1) description of data, (2) Test assumptions, and (3) test research hypotheses, which was done by using ANOVA statistical analysis of two way (2x2). The results showed: 1) there are effect used learning strategies for learning achievement sig .002 <0.05 with problem-based learning strategies are more effective than expository strategy, based on the mean problem-based learning strategies has 70.80 and 67.63 for expository strategy. 2) there are effect with student motivation on student learning achievement where sig .000 > 0.05. 3) there is no interaction between the learning strategies and learning motivation on learning achievement, where the results of the analysis showed sig .096 > 0.05.

Keywords: problem based learning, expository strategies, motivation, student achievement.

Learning is an activity of educative value in which there is interaction between teachers students involving the components of goals/objectives, learning materials, process, and learning evaluation. The component of learning process should be more emphasized as through such process students are expected to experience change that is from not knowing to knowing, from not being able to being able. Success of learning essentially indicates success in gaining learning objectives and success in giving learning materials as well, and is shown directly in the possession of knowledge by the students. In elementary school level, learning success is still dominated by teacher's role in learning process. The more creative an elementary school teacher is the bigger is the chance of obtaining learning objectives as well competence in students.

Learning process for Social Science in elementary school has been so focused on mastery of as many units of materials as possible that the learning process becomes rigid and linear without giving space for students to be active and explorative. Learning signature is mostly shown by memorization culture rather than critical thinking. This has rendered students unable to apply basic concepts of Social Science materials in real life.

Social Science learning at school is influenced by the need of having satisfying final evaluation score. Not only affecting students' behavior i.e. only doing memorization, this has also impacted negatively on teacher's teaching method, school policy, and parents expectation, which is based only on quantitative scores. Teachers tend to approach the students in the ways of expository learning strategy, which comprises of one way lecturing and mastery of materials.

Social Science learning functions basically to improve knowledge, values, critical thinking, social sensitivity, social attitude, and student's social skill in observing and analyzing social phenomena in daily life, as well as to grow healthy pride and love on the development of Indonesian people from the past until today. Meanwhile, the objectives of Social Science learning at school is to make the students able to develop knowledge, values, critical thinking, social sensitivity, and social attitude as well as social skill that are useful for himself; and also to improve understanding on the development of Indonesian people from the past until today so that students are proud to be Indonesian. (Sapriya, 2007).

In improving the quality of Social Science learning in elementary school, perfection of learning that is essentially in conform to the objectives and nature of Social Science is needed. Social Science learning should create conditions where students can optimally develop their abilities to think and create. Creativity is developed in order to gain the opportunity to apply knowledge in solving problems that they face. Initial questions that teachers ask to determine how far students grasp and are able to explain concepts of Social Science based on their experiences. This can be a ground for teachers in sharing new experiences so that students understanding are in line with correct Social Science concepts.

One of relevant strategies in Social Science learning is Problem Based Learning (PBL). It is because 1) PBL encourages cooperation and finishing of the task collectively; 2) PBL encourages observation and dialogue with others so that students can conduct observation in phases based on the rules given; 3) PBL connects students in choosing investigations that enable them to make interpretations and explain a phenomenon and construct their understanding about the phenomenon at hand (Arends, 2012; Eggen & Kauchak, 2012). As Social Science requires cooperation, explaining phenomenon, and problem solving, therefore, PBL is suitable for such learning.

PBL is a suitable learning strategy for Social Science learning in elementary school, in which the strategy helps students to think critically and creatively, improve their social sensitivity as outlined by the objectives of Social Science (Eggen & Kauchak, 2012; Rusman, 2010; Tan, 2003). This strategy trains students to face and solve problem skillfully, increase knowledge and learning motivation, and stimulate the development of creative and holistic thinking, as in such learning process they are asked to do a lot of mental process by observing contextual problems from different context in order to find their solutions (Tan, 2009; Tan, 2003).

One of the components predicted to influence the outcome of Social Science learning is learning motivation. Basically, motivation can be used to understand and explain an individual's behavior, including one who is learning. Motivation in learning can grow desire and intention to have a meaningful learning (Santrock, 2011). Learning activities prepared by teachers are expected to suit the plan and desired objectives. One of the learning objectives is change in behavior i.e. student's scientific attitude and increase in learning achievement. A teacher should not neglect motivation factor that students have. Motivated students will be able to show their creativity intensively during learning in class. The characteristic role of motivation is growing students' desire and making them feel happy and enthusiastic to learn.

Motivation is ethimologically derived from the word 'motive' that can be defined as a moving power inside oneself to conduct certain activities in order to obtain his/her goals. Motivation can also be understood as series of efforts of providing certain conditions that make

someone want to do something including something he/she dislikes by avoiding/eradicating such feeling (Schunk, 2011; Santrock, 2011; Sardiman A.M, 2007). Motivation can be stimulated externally but motivation grows in oneself. In learning process, motivation is said to be the whole moving power inside students that initiates, maintains, and directs the learning process in order to achieve the objectives the students are aiming for.

The important roles of motivation in learning can be seen among others in (a) determining supporting factors that strengthen learning; (b) clarifying the objectives of learning ; (c) determining variety of control toward learning stimuli; (d) determine learning perserverance (Santrock, 2011; Slavin, 2006). Motivation comes into play as a learning enhancer when students are faced with a problem that has to be solved, a problem that can only be solved by reflecting on their own experiences. As an example, a student will solve a Social Science problem by the help of Indonesian map. Without the map, the student will not be able to solve the task. This will stimulate the student to find the map, if he/she does not have one. The effort of finding the Indonesian map is a kind of example of how motivation can enhance learning. From this illustration, it can be understood that something can be a learning enhancer for someone if he/she really has the motivation to learn something. In other words, motivation determines what kinds of objects in a student's environment can enhance learning. A teacher needs to understand this so that he/she can help the students in choosing factors or conditions that exist in student's surroundings as learning enhancers.

Expository learning strategy, usually called varied lecturing method, is a way of transferring learning learning materials through oral explanation that is accompanied by other learning methods even though only complementary in nature. In this strategi, learning materials are given directly by teachers while students are not obliged to find the materials themselves. Learning materials are in a certain way fixed. Because expository strategy only emphasizes on oral lecturing, it is named '*chalk and talk*'. This strategy assigns a teacher as the controller of the whole learning process and students as the receiver and listeners of whatever is presented by the teachers (Prayekti, 2016).

Learning with expository strategy is a *teacher centered* learning. In this strategy, teacher actively explains and details his/her learning materials. Dimiyati dan Mujiono (2009) says that learning through expository strategy is transferring knowledge, skill, and values to students. Teachers' important roles are i) arranging learning program; ii) giving correct information; iii) good facilities givers; iv) students supervisors in acquiring correct information; v) judges of information acquisition.

Furthermore, it is also explained that students' most important roles in expository learning are 1) seekers of correct information; 2) user of learning media and resources; 3) finishing tasks within the frame of learning evaluation (Eggen & Kauchak, 2012). Learning outcomes are evaluated by the width and quantity of knowledge, skills, and values that students have mastered. In general, the evaluation instrument is a standardized test or test made by the learners.

This research will prove the effect of PBL and expository learning strategies on learning achievement in Social Science subject viewed from students' learning motivation. The reason why these strategies are put into consideration is that based on the explanation above, the writer thinks that PBL in elementary Social Science can essentially help students to easily understand Social Science materials and to use their knowledge in real life. Besides, PBL can decrease teachers' dominance in learning, increase students participation, encourage students to ask, and train them to think critically, as well as increase their social sensitivity. In relation to existing elementary school curriculum, PBL has become strategic and important to students' mastery of basic competence in Social Science. Therefore, a Social Science teacher must master PBL strategy theoretically and practically. Unavoidably, PBL must also be scientifically studied and reviewed in research. Expository, on the other hand, is a conventional strategy that every one is accustomed to in Social Science learning. However, its implementation has not satisfied the

real standards of expository learning. This research experimented on both learning strategies in order to gain conclusion of the effect that each one has on students' learning achievement, which can eventually be a reference to elementary school teachers in designing Social Science materials.

The problems of this research are (1) Is there any difference in achievement between students learning through PBL and those who undergo expository learning process in Social Science learning in elementary schools in Kupang City? (2) Is there any difference in learning achievement between students with high learning motivation and students with low learning motivation in Social Science learning in elementary schools in Kupang City? (3) Is there any interaction between the use of the two learning strategies and learning motivation level on one hand and students' learning achievement in Social Science learning in elementary schools in Kupang City on the other hand?

The aim of this research is to (1) examine whether there is difference in learning achievement between students taught through PBL and those taught through expository in Social Science learning in elementary schools in Kupang City; (2) examine the difference of learning achievements between students with high learning motivation and students with low learning motivation in Social Science learning in elementary schools in Kupang City; (3) examine whether there is interaction between the use both learning strategies and learning motivation on one hand and students achievement in Social Science learning in elementary schools in Kupang city on the other hand.

RESEARCH METHOD

Research Design

This research uses quasi-experimental design. Quasi-experimental design is an experiment that is 'less' pure, as the researcher is not fully in control toward all variables that are suspected to influence the dependent variable (learning achievement) (Ardhana.1987; Tuckman, 1999).

Factorial design is used in this experiment. In this factorial design, there are two categories used is a 2x2 table design.

Table 1 Factorial Experiment 2x2

		Learning Strategy	
		<i>Problem Based Learning</i>	Expository
Learning Motivation	High (HLM)	Y ₁	Y ₂
	Low (LLM)	Y ₃	Y ₄

The experiment class that uses PBL will be compared with the control class that is taught in expository manner. Then, the comparison will be associated with students' learning motivation. In the experiment class, any change is observed i.e. the increase or decrease in students' understanding toward Social Science materials after the application of PBL and expository strategies.

Research Subjects

Subjects in this research are 64 semester two elementary schools students of Grade IV in the academic year of 2015/2016 that are divided into two even classes of experiment and control classes (32 students per class).

Research Variables

There are three research variables namely independent variables, dependent variable, and moderator variables. The independent variables are PBL and expository learning strategies; dependent variable is students' learning achievement; and the moderator variables are high and low learning motivation.

Research Procedure

Research procedure is a set of steps or phases that the researcher takes in completing the research, as follows:

1. Determining research subjects and divide them in Control Group (Cg) and Experiment Group (Eg).
2. Coordinate and develop PBL instruments in Social Science with teachers. The development of learning instruments for PBL includes development of indicator and learning objectives, instructional analysis, learning materials, lesson plans, learning tools, and learning evaluation system.
3. Identifying learning motivation and students learning achievement (pre-test); this is conducted by using test instruments as can be seen in the appendices.
4. Conducting experiment to Eg and maintain the groups' normality; the Eg is approached by PBL strategy while the Cg the expository strategy.
5. Conducting observation on treatment activities; it is done on activities starting from action planning until the implementation of the plan, both in Eg and Cg.
6. Identifying learning achievements of each students/group (pos-test).
7. Conducting Data Analysis and formulate research findings.

Data collection

Data collection technique is ways that can be used to collect data. There two techniques used in this research i.e. 1) test technique and 2) questionnaire technique. Test is used to collect Social Science learning achievement data. Documentary technique is used to acquire data of semesteral test results in order to examine the equality of Eg and Cg. Questionnaire technique is used to collect data about students' learning motivation.

Data Analysis

Analysis on data is conducted to answer research problems and test research hypotheses. In this research statistical analysis used are descriptive analysis and inferential-parametric statistical analysis. Descriptive analysis is conducted to obtain understanding of the object observed through existing data without any treatments whatsoever. There three hypotheses tested in this research, i.e.: (1) There is difference in Social Science learning achievement between students instructed with PBL and those with expository strategy in Grade IV students of GMIT Airnona II and GMIT Airnona I elementary schools; (2) There is difference in Social Science learning achievement between students with high learning motivation and students with low learning motivation in Grade Social Science students of GMIT Airnona II and GMIT Airnona I elementary schools; (3) There is interactive influence between learning strategies of PBL and expository and different learning motivation on students's learning motivation. These hypotheses are test by Two Way Analysis of Variance or ANAVA. Inferential statistical analysis is used to examine (1) normality of data spread using Kolmogorov-Smirnov dan

Shapiro-Wilk; and (2) homogeneity of variance between groups using *Levene's test of Equality of Error Variances*. Both analysis are conducted in SPSS version 17.

Research Hypotheses Test

A statistical analysis is usually used to examine whether a hypothesis is accepted or denied. The collected data are quantitative data, which means they must be analysed by statistical equation. Hypotheses test in this research uses two way ANAWA with F test on the significance level of 5% with the help SPSS.

FINDINGS AND DISCUSSION

Description of Pretest Result

Before given treatment, subjects are pretested in order to determine their initial abilities. The results show students' initial ability.

Table 2 Pretest Data Analysis

Statistics			
		Pretest of PBL Group	Pretest of Expository Group
N	Valid	32	32
	Missing	32	32
Mean		28.3750	25.9688
Std. Error of Mean		1.26184	1.15658
Std. Deviation		7.13804	6.54259
Variance		50.952	42.805
Minimum		14.00	11.00
Maximum		40.00	40.00

Based on the data in Table 4.4., *mean* pretest for the Eg is 28.37 with standard of deviation of 7.13, whereas for the Cg *mean* acquired 25.96 with the standard deviation of 6.54. However, these data cannot be used as a strong foundation for further research, so two independent sample t-test is necessary. The result of this test will show whether there is significant difference between the two classes.

Description of Data of Learning Achievement Posttest

It is found that the learning achievement posttest on both groups shows that the average of posttest result in Eg with high learning motivation is 74.35, with deviation standard of 5.08 and low learning motivation 67.25 with standard deviation of 3.25. Whereas the average score of Cg with high learning motivation is 72.86, with standard deviation of 3.11 and low learning motivation is 62.41 with standard deviation of 3.27.

If compared to the pretest result, there is increase in average scores of students in Eg i.e. 43.32, while students in Cg 41,15.

Analysis Condition Test

In order to test the hypotheses, all researched variables are test using two way ANOVA (Two Way Analysis of Variance). Before it is done, analysis condition test is conducted, comprising of normality test and variance homogeneity test.

Research Hypotheses Test

Hypotheses test is a procdure that is done to determine whether the hypotheses proposed earlier are accepted or refused. The analysis condition test has shown that it is feasible to conduct test on the hypotheses . Therefore, further test can be continued. To be more clear, pay attention to the following table.

Table 3 Two Way Anova

Tests of Between-Subjects Effects					
Dependent Variable: Students' Learning Achievement posttest					
Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	1555.349 ^a	3	518.450	34.010	.000
Intercept	296192.800	1	296192.800	1.943E4	.000
Learning Strategy	154.400	1	154.400	10.128	.002
Learning_Motivation	1190.675	1	1190.675	78.107	.000
Learning Strategy* Learning_Motivation	43.487	1	43.487	2.853	.096
Error	914.651	60	15.244		
Total	311606.000	64			
Corrected Total	2470.000	63			
a. R Squared = .630 (Adjusted R Squared = .611)					

Effect test between subjects is used to see the influence of independent variables and dependent variable and their interactions. This test is conducted to prove the hypotheses of this research. Based on the data in Table 4.9, hypotheses based analysis is as follows:

The Effect of Learning Strategies on Social Science Learning Objectives

Based on the results, it can be seen that the average score of students learning in PBL setting is 28.3750 at pretest and becomes 71.6875 at posttest, which means that there is increase of 43.3125. Whereas, the average score of students of expository group is 25.9688 at pretest and becomes 67.1250 at posttest—there is increase of 41.1562. These numbers is then analysed with variance analysis showing $F=10.128$ with $p=.002$ ($p<0.05$). Therefore, it can be said that PBL strategy gives better effect than expository strategy on Social Science learning achievement.

Based on that fact, theoretically PBL strategy has more positive effect on increasing students learning achievement in Social Science learning than expository strategy does. PBL

strategy in classroom means learning is conducted by giving students chances to discuss problems, think critically, and solve problems based on determined indicators. This is in line with previous research by De Grave, Boishuizen dan Schmidt (1996) stating that there is cognitive improvement in students in problem analysis step of PBL.

The explanation research result above affirms that PBL can better influence learning outcomes compared with expository learning strategy. This finding is also in conform to various opinions on the use of PBL in learning activities, among others is Newby, (2000) who proposes that the excellence of PBL is : (1) improve understanding and retention as students are obliged to solve daily living problems by implementing theories and practices; (2) involve high level of learning; (3) give students opportunity to study from mistakes; and (4) build responsibility in students so that they can learn to thinks freely. Through PBL, students have the opportunity to conduct problem based praxis, self evaluation, group skills, critical thinking, and oral and written communication as well.

Based on the review, a statement is made that is if a learning in conducted a la PBL learning outcomes as seen in students' learning achievement will increase, especially in understading abstract and problem based concepts. Therefore, in order for the students to increase their learning achievement, learning design should be problem based so that it can answer students' need of increasing their learning achievement.

The Effect of Learning Motivation Level on Social Science Learning Achievement

Results show that students who have high learning motivation acquire the gap of 8.77 from students with low level of learning motivation. Analysis shows that the average learning outcomes of students with high level motivation is 73.60, whereas students with low learning motivation 64.83. These numbers are then analysed by variance analysis test, showing that *F count* of students' learning motivation is 78.10 with *p-value* 0.00. If this significance value is compared to probability value of 0.05, it is lower (*p-value* < 0.05) so it can be concluded that there is difference in learning achievement between students with high learning motivation and those with low learning motivation. In other words, students having high learning motivation will have better learning achievement than those with low level of motivation.

This proves that students with high learning motivation and low learning motivation have different learning achievements. This condition shows that grouping the students based on high-low level of learning motivation is sufficiently effective to see the influence of certain learning model.

Based on that, it can be theoretically discussed that students with high learning motivation have achievement driven energy i.e. mastering, organizing social and physical environment, overcoming obstacles, and maintaining high learning quality, competing with excellence standards. The excellence standards can be others' achievements but can also be their own previous achievements or perfection of the task at hand.

Learning outcome in their various forms besides influenced by the method variable, are also influence by condition variable, i.e. students's characteristics and subject's characteristics (Degeng, 1999). Students' characteristics are individual aspects or qualities such as talent, interest, motivation, goal orientation, intelligence, acquired learning outcomes, and so on that influence process and results of learning.

The explanation above affirms that if learning is conducted by putting into consideration students' motivation, learning achievement will increase especially in receiving, thinking, processing and storing information, solving problems, and making learning activities dynamic and fun. Therefore, in order for the learning outcomes to increase in the forms of knowledge,

attitude, and skill, it is important to design learning instruments by taking into account students' learning motivation.

Interaction between Learning Strategies and Learning Motivation on Social Science Learning Achievement

Based on analysis and description of data, it is concluded that there is not any interaction between the learning strategies and learning motivation on Social Science learning achievement. This is proved in hypotheses test that results in accepting H_0 in the significance level of $\alpha=0.05$. From Table 4.9., it can be seen that *F count* value of interaction statistical test acquires 2.853 with significance value of 0.096. This significance value is bigger than 0.05 ($.096 > 0.05$), so it can be concluded that there is not any interaction between the learning strategies and learning motivation viewed from students' learning achievement.

Such result is cumulative contribution. The cumulative contribution is not as big as either learning strategies variable contribution or learning motivation variable if analyzed partially. This is because interaction between learning strategies and learning motivation can influence differently in different individuals, or in other words, combined contributions of learning strategies and learning motivation do not give different effect on each individual student. This result is also supported by earlier research that was conducted by Tegeh (2010) indicating that there is no significant interactive effect of learning models and learning motivation on students' learning achievement. Additionally, a research by Mufidah (2012) on the influence of learning strategies and learning motivation on Grade V elementary school students' understanding of Social Science materials shows that there is not any interaction between the use of learning strategies and learning motivation.

Insignificance of interaction between learning strategies and learning motivation on the scores of students' learning achievement as found by this research is suspectedly caused by (1) students characteristic of being accustomed to 'drill' pattern and memorization; (2) characteristics of subject; (3) characteristic and behavior of teachers in learning (Huitt's model), and (4) the period of research that was not longer.

PBL's excellence can be seen from its ability to increase students' knowledge while at the same time encourage problem based skill development, critical thinking, collaboration, independent learning, communication, improve motivation and students' learning activity, as well as making learning active and enjoyable.

CONCLUSION

Based on the findings and discussions above, the conclusions can be drawn as follows: 1) There is difference in learning achievement between students taught in the PBL setting and those taught in expository setting, with significance value of 5%, $F= 10.128$, $p = 0,002$, which is below 5% or 0,05 ($p < 0.05$). Therefore, it can be said that Social Science learning with PBL strategy produces better learning achievement than expository strategy; 2) There is difference in learning achievement between students with high level of learning motivation and those with low level of learning motivation, with significance level of 5%, $F= 78.107$ is acquired and $p = 0,00$, which is below 0.05 ($p < 0.05$). Therefore, it can be concluded that students who have high level of learning motivation achieve better than students with low level motivation; 3)

There is not any interaction between learning strategies (PBL and expository) and learning motivation on students' learning achievement, with the significance level of 5%, $F = 2.853$ and $p = 0.096$, which is bigger than 0,05 ($p < 0,05$). It is, however, descriptively found that

even with high or low level of learning motivation, PBL still scores better than when students study in expository setting.

Suggestions

Based on the conclusion above, suggestions are formulated as follows: (1) Learning achievement results, both in quality and quantity, is effectively influence by learning strategy. Therefore, teachers must absolutely posses the ability of choosing and applying appropriate learning strategy must. The development of teacher's ability, skill, and creativity in choosing and implementing learning strategies should always be conducted both independently and institutionally. (2) Correct implementation of PBL requires support of certain prerequisites, such as teachers' ability and students' preparedness as well as learning situation and condition that enables learning process that is characterized by problem based learning. Therefore, it is necessary to take into consideration students' condition in choosing and implementing learning activities. (3) There is no significant interaction between PBL learning strategy and learning motivation toward students learning achievement. But, this does not mean that there is not any influence at all. Descriptive data show that this is true. Both variables should be considered in choosing and implementing learning activities. It means that the choice of learning strategy must be one that can improve students' learning motivation and be based on students' characteristics and conditions that haven't been answered by this research. (4) The findings of this research can be made use by learning practitioners in developing learning activities that not only is able to increase learning outcomes but is also able to improve other abilities that students have, such as communicating, grouping and solving problems, and improve their characters as well. (5) Based on the findings of this research, it is important that further research into this matter be conducted in the form of learning component development that aims to wholly improve students' learning achievement, especially in Social Science. (6) The findings of this research can be acted upon by conducting research on learning activities that is oriented not only in improving knowledge but also in developing students' other abilities, such as communicating, grouping, solving problems. (7) The findings of this research can be acted upon by conducting further research on the use of Problem Based Learning strategy in other subjects, as well as in profession level of education.

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