

Effect of Thematic Learning Inquiry Method Based on Peer Assessment on Activity and Result Learning Student Grade IV

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Abstract

The purpose of this study was to analyze the influences of thematic learning of inquiry method based on peer assessment on activity and result of student learning of class IV. This type of research used true experimental with pretest-posttest control group design. The subjects of the study were fourth grade students of SD Negeri 01 Sidosari, Pekalongan. Based on the results of analysis of research data after getting treatment in the experimental class, and the control class was not treated with the prerequisite test of normality and homogeneity. The parametric statistic test used t-test analysis (one party) was obtained $t_{count} = 0,001 > t_{table} = 0,005$ and the result of student activity analysis obtained $t_{count} = 0,002 > t_{table} = 0,005$. Thus it can be concluded that inquiry method based on peer assessment has an effect on student activity and result of student learning. The suggestion of this study takes into account time allocation, attention to student activity, peer assessment based inquiry method is not only limited to thematic learning.

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INTRODUCTION

Along with the development of educational curriculum in Indonesia, the learning system applied follows the curriculum development direction. Implementation of the 2013 curriculum mandated in primary schools by applying integrated thematic learning. Transactional communication process involving teachers, students, media, teaching materials and other components so as to create an educational interaction process. The success of educational attainment depends on the learning process. Effective learning should be implemented for all subjects, including thematic learning. Thematic learning is an attempt to integrate knowledge, skills, values, and learning attitudes, as well as creative thinking using themes.

Thematic learning model is an integrated learning model that uses a thematic approach that involves several subjects to provide meaningful experiences to the students. Thematic learning model is a teaching and learning activity by combining the material of several subjects in one theme (Hernawan, 2007). Thematic learning is conducted in an inquiry to cultivate the ability to think, work, and be scientific and able to communicate it as an important aspect of Life Skills.

The opinion of Kizilaslan (2012) inquiry-based learning enhances students' critical thinking skills and helps students to act as scientists through using scientific methods while learning. Therefore, thematic learning emphasizes the provision of direct student learning experiences through the use and development of skills. The success of this inquiry-based laboratory unit may be due to both interesting contexts for students, and teaching methods ranging from guided to more open inquiry, scientific processes and attitudes to develop competence to explore and understand the natural surroundings scientifically. In the inquiry approach of learning becomes more child-centered, the process of learning through inquiry can shape and develop self-concept in the student self.

The results of interviews during this assessment system is still centered on teachers, meaning teachers who give students grades. As a result students are not accustomed to assess the shortcomings and advantages in learning. Therefore, a student appraisal system is needed, ie peer assessment. The assessment process includes gathering evidence of student achievement. The facts show that learning and assessment are still focused on cognitive activity only. The science approach to information science is the first and foremost choice for most teachers. Innovative assessment has not been fully practiced in higher education although its application is widespread (Zevenbergen, 2001). Students are expected to be active and scientific in the learning process. It needs an appraisal that is capable of covering the above criteria.

Peer assessment is an assessment of the students by other students, both formative reviews to provide feedback and summative (Bostock, 2000). Peer assessment is an assessment that has the advantages of other assessments, namely the assessment that directly involves students in the assessment process that was originally only done by the teacher. Through these activities, students are able to develop cooperation, criticize the process of learning outcomes of others, receive feedback or criticism from others (Zulharman, 2007). Peer assessment encourages students to have a sense of responsibility towards the learning process so that students can be independent. Demonstrating that based on survey responses, students' perspectives using positive peer assessment, overall, and the process did lead to the promotion of student learning (White, 2009).

Based on the results of the above studies, it is necessary to innovate the learning model that leads to the achievement of active, creative, scientific and fun learning. In the learning process needs to create a relationship of cooperation between groups, democracy in expressing opinions and have a sense of social responsibility. With this learning model, students are expected to have the opportunity to interact with each other so as to have a significant influence on the activity and scientific attitude of students in

learning as well as the acquisition of learning outcomes, both cognitive, affective and psychomotor optimal.

Observations conducted by interviewing techniques at SD N 01 Sidosari showed that. One, the learning tool on the learning of various energy sources has not used peer assessment based inquiry method. Two, the learning method used is still conventional. Three, teachers as learning centers (teacher center). Four, students are still passive in following the lesson marked by the frequency of asking a little. Five, the results of learning is still on the cognitive aspect has not covered three aspects, namely cognitive, affective and psychomotor. Based on the above description of the research problem formulation are: (1) Is there any influence of the activity of fourth grade students using inquiry method based on peer assessment. (2) Is there influence of student learning result using peer assessment inquiry based method. The purpose of the study (1) To analyze the effect of student activity in the application of thematic learning inquiry method based on peer assessment. (2) Analyzing the effect of student learning outcomes using inquiry method based on peer assessment.

METHODS

This type of research is true experimental with pretest-posttest control group design. This research was conducted in SD N 01 Sidosari, Pekalongan. The population in this study were all fourth grade students of SD Negeri Sidosari which amounted to 44 students, consisting of 22 students of grade IV A and 22 students of class IV B. Sampling in this study using cluster random sampling technique by setting two classes as a sample. Based on this method, this research is obtained by the result of the students of class IV A as the experimental class or class using peer assessment based inquiry method, the fourth grader B as the control class or the non peer assessment inquiry.

Data collection techniques in this study used tests, questionnaires, observations and documentation. Essay-essay test used to determine the achievement of competence

obtained by students after using inquiry method based on peer assessment. Questionnaire to uncover students' responses to the effectiveness of peer assessment. Observations were made to measure student activity. Documentation is intended to obtain data directly from the place of study.

Test The Results of Learning Hypotheses

The prerequisite test is performed as a basis for making statistical decisions to be used. Preparation test that is done include normality test and homogeneity test so that can be done by statistical parametric test. Differences test was conducted to know the experiment and control class has the average difference so that there is influence to the learning result by using peer assessment inquiry method. The significance level used in this hypothesis test is $\alpha = 0,05$. Test parametric statistical hypothesis with paired samples t-test with provision, H_0 not in reject if $t_{count} > t_{table}$ OR H_0 accepted if $t_{arithmetic} \leq t_{table}$.

Test The Student Activity Hypothesis

Preparation test that is done include normality test and homogeneity test so that can be done by statistical parametric test. Differences test was conducted to know the experiment and control class have difference average so that there is influence of student activity by using peer assessment inquiry method. The significance level used in this hypothesis test is $\alpha = 0,05$. Parametric statistics with independent samples t test with the provision that H_0 is not rejected if $t > t_{table}$ or H_0 is accepted if $t_{arithmetic} \leq t_{table}$.

RESULTS AND DISCUSSION

The average initial grade of the control class was 64.09 and the experimental class was 63.98. Before the two classes were given different studies conducted normality test, homogeneity test, and equality test average. Normality test results with PASW Statistics 18 software using kolmogorov-smirnov indicate that both classes are normally distributed. Homogeneity test results with PASW Statistics 18 software using levene statistics test indicate that both classes

have the same variance. The result of equality test with PASW Statistics 18 software using independent sample t test showed that both classes have the same average initial comprehension ability. It is known that the normality and homogeneity test is a prerequisite test with the result of pretest value of normal and homogeneous distribution, then based on the prerequisite test can be taken decision by using parametric statistic test.

The mean pretest grade of the experimental class (63.98) was lower than the control class (64.09) but the mean posttest score (76.25) was higher than the control class (67.39). This is influenced by the difference of learning treatment from both classes. The experimental class students use a peer-based inquiry-based inquiry method while the control class students use peer-based inquiry method.

Test-t Results of Student Learning

One-party test was used in this study to prove the hypothesis that the average application of peer assessment based inquiry method on learning outcomes in pretest and posttest data is different so that it influences student's learning outcomes.

After data of student learning result have been stated normal and homogenous distribution the next step is statistical decision making with parametric statistic test by using paired samples t-test. The result of analysis of research data after getting treatment in experimental class, with prerequisite test of normality and homogeneity done parametric statistic test using t-test analysis (one party) obtained $t_{\text{count}} = 0.000 > t_{\text{table}} = 0,005$.

The result of indication of indigo mean posttest learning outcomes between experimental group and control group in Figure 1.

The picture above shows that the average value of experimental class learning result is higher than control class. It can be concluded that the value of the students' learning outcomes in the experimental classroom learning using peer assessment based inquiry method is higher than that of the control class that does not use peer assessment inquiry method.

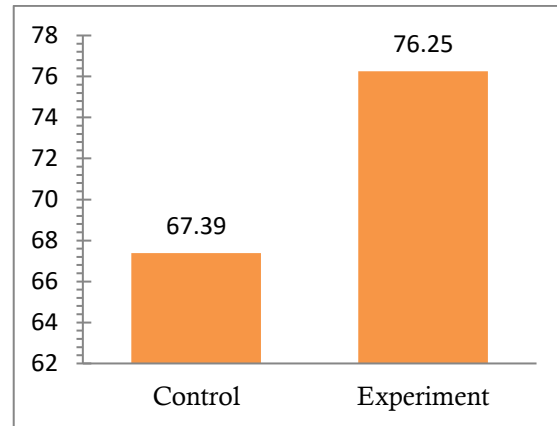


Figure 1. The Mean Value of Learning Achievement

Based on the results of the study that the data are normally distributed with the homogeneity of the same class variant and the same average equality test results as a requirement of parametric statistical decision making. Then it can be concluded that H_0 is rejected and H_a accepted with average student learning outcomes on thematic learning using inquiry method is higher so there are differences. This means that in the experimental class with thematic learning using inquiry method has an effect on student learning outcomes.

Student Activity Analysis

One-party test is used in this study to prove the hypothesis that the average application of peer assessment based inquiry method on student activity on posttest data there are differences so that influence on student activity.

After the student activity data have been declared normal and homogeneous distribution the next step is statistical decision making with parametric statistic test by using independent samples t-test. The result of analysis of research data after getting treatment in the experimental class, with the prerequisite test of normality and homogeneity parametric statistic test using t-test analysis (one party) obtained $t_{\text{count}} = 0,002 > t_{\text{table}} = 0,005$.

The result of comparison of mean score of learning result of posttest between experiment group and control group in Figure 2.

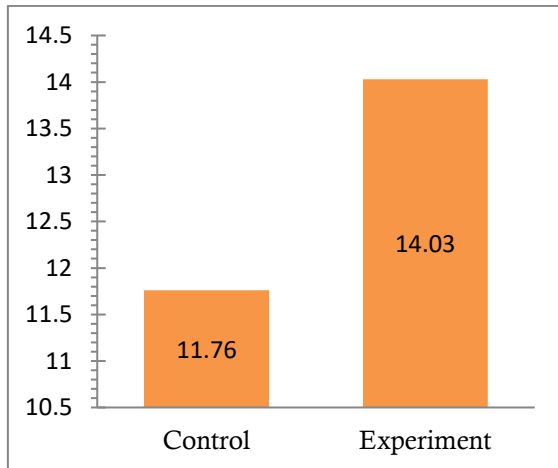


Figure 2. Comparison of The Mean Value of Learning Outcomes

The figure above shows that the average student activity score on the experimental class is higher than the control class. This means that students' activity scores in experimental class learning using peer assessment based inquiry method are higher than control class learning that does not use peer assessment based inquiry method. The experimental class activity scores fall into the high category, so it can be stated that using peer assessment based inquiry method makes the students more active in learning.

Based on the results of the study that the data are normally distributed with the homogeneity of the same class variant as a statistical parametric decision making requirements. Then it can be concluded that H_0 is rejected and H_a accepted with the average of student activity on thematic learning using inquiry method is higher so there are differences. This means that in the experimental class with thematic learning using inquiry method has an effect on student activity.

Differences in the assessment between the students through peer assessment can be caused by several things including: First, students have not experienced in implementing peer assessment, there are two different interpretation criteria and indicators of performance assessment rubric, this is also found in research conducted by Grez et al. (2012), the three factors of honesty or objectivity in the assessment.

In this peer assessment shows that students can assess objectively, students do not hesitate to give value in accordance with the performance of his group friends who do not perform their duties. This is in the opinion of Wenzel (2007) which states that students appreciate the opportunity given to assess their friends so that students are honest in assessing the performance of his friend. When the student lab is closer to the other students assessed, so students can better know the performance of students who are not visible.

Some students feel hesitant to give a bad value to their friends, usually to friends who are close students tend to provide greater value. Some research done by Wheeler et al. (2005) showed similar results, that there are students who are generous attitude by giving more value to their friends. This is according to Orsmond (2004) that one of the shortcomings of peer assessment is the result of students' assessment is strongly influenced by certain feelings that students feel toward other students both positive and negative, the positive feelings that is close to the friend can cause conspiracy among students

A sense of friendship between friends makes students subjective in judgment. However, the possibility of subjectivity arising has been anticipated by the teacher by dividing the assessment task on each student that is not known by the assessed student. Bostock statement (2000) that to minimize subjectivity in peer assessment can be done by way of anonymity. Another study conducted by Grez et al. (2012) found that there was a tendency for peer assessment to be greater than the teacher's assessment.

The objectivity element of assessment is also a matter of which can result in differences in student and teacher assessment results. The results of the students' assessment is strongly influenced by certain feelings towards other students both positive and negative and also the existence of competition among students (Bostock, 2000) is also a factor that determines the success of peer assessment. Peer assessment techniques can only be successful if there is mutual trust between students and teachers or between students and students. To create this, teachers must monitor the implementation of the

peer assessment in order to be effective and the validity of the assessment is justified. The effectiveness of peer assessment can be determined by looking at the following peer assessment effectiveness picture.

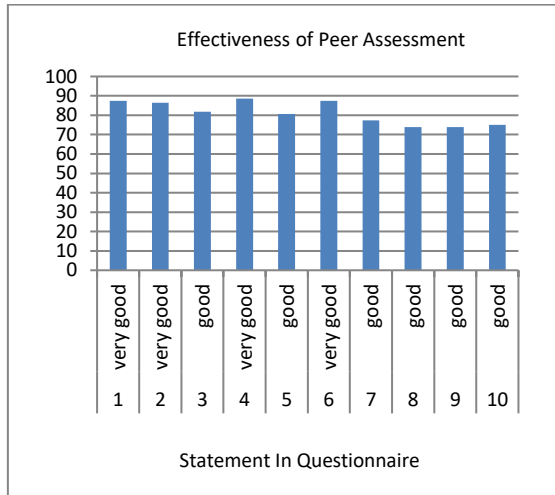


Figure 3. Effectiveness of Peer Assessment

Can be concluded in each of the statements contained in the questionnaire most of the students give good response. This means that overall students are well received in the application of peer assessment. From the results of this study peer assessment is effective to apply to learning activities and can to assess student practice performance in making waterwheels and windmills by students. Given its effectiveness, of course peer assessment can be applied to other lessons (Noonan & Duncan, 2005). These results reinforce the results of research that has been done before, (Wicaksono, 2016) self assessment, and peer Assessment on thematic learning class V SDN Arjowinangun 02 Malangxxx.

CONCLUSION

Based on the results of research that has been done, it can be concluded that the results of student learning in experimental groups or groups using inquiry-based peer assessment method has a higher average value than the results of student learning control class.

Based on the parametric statistical analysis there is a significant difference between the experimental class learning result on the pretest

and posttest data, so there is an influence between thematic learning using peer assessment based inquiry method with thematic learning which use no peer assessment inquiry method.

Student activity in experiment group is higher than student activity in control group. Based on the parametric statistical analysis there is a significant difference between the experimental class student activity in the experimental class data and, so there is an influence between thematic learning using peer assessment based inquiry method with thematic learning which use no peer assessment inquiry method.

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