The Influence of Cooperative Learning Model Type Group Investigation Toward Results of Learning Science Materials of Students

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Abstract: Student learning outcomes are still low due to the use of learning models that are less varied. Therefore, researchers apply the cooperative learning model type group investigation in learning science. This study aims to describe the influence of the cooperative learning model type group investigation on the learning outcomes of science materials in the fifth grade students of SDN 1 Banjarejo. This type of research used is quasi-experimental design with nonequivalent control group design. The sample of this research is the VB class SDN 1 Banjarejo experimental class and class V SDN 1 Banjarejo as the control class. Data collection techniques for learning outcomes use multiple choice tests and descriptions. Learning outcomes data were analyzed by independent t-test and gain test. The results of the analysis of the pretest data showed that there was no difference in the average pretest score between the two samples. The results of posttest data analysis showed that there were differences in the average posttest scores of the experimental and control classes, with the difference in the average experimental class being higher at 5.50. Large increase in the average normalized gain in the experimental class by 0.41 (medium), while in the control class by 0.29 (low). These results provide the conclusion that the cooperative learning model type group investigation has a significant and positive influence on science learning outcomes in elementary students.
Keywords: cooperative learning model type group investigation, learning outcomes, science

INTRODUCTION

Education is one of the factors that determine the quality of life of the nation (Ariadi, Renda, & Rati, 2014). Education is very important, because without education it is difficult for humans to develop and even to live underdeveloped (Muliyantini & Parmiti, 2017). Education is also an important means to improve the quality of human resources in ensuring the sustainable development of a nation (Dewi, Manuaba, & Suniasih, 2018).

One of the improvements in quality human resources can be done by improving the quality of science education (Ariadi et al., 2014). Natural Sciences deals with how to find out about nature systematically, so that science is not only mastering a collection of knowledge in the form of

facts, concepts, or principles, but also a process of discovery (Rizal, 2014). At the elementary school level, it is hoped that there will be an emphasis on learning science, environment, technology, and society which is directed towards learning experiences to design and create works through the application of science concepts (Yamin & Karmila, 2020).

The quality of education in Indonesia is still far behind compared to other countries in the world (Ariadi et al., 2014). The learning process of science in elementary schools has so far been oriented towards mastering theory and memorization in all fields, and learning methods that focus on providing information from teachers (teacher centered) tend to ignore the rights and needs of students, as well as the development and growth of children (Dewi et al., 2018). Another problem is that teachers are less able to present the material as well and as interesting as possible, so that it can cause students to become bored and bored during the learning activities (Muliyantini & Parmiti, 2017). This has an impact on the suboptimal learning process that is fun, and educate students.

Problems with learning science also occur at SDN 1 Banjarejo. In the learning process, teachers have not used variations of innovative learning models to attract students' attention. Several problems were identified as follows: (1) in the learning process, the model used by the teacher was still less varied and still used the conventional model which was dominated by lectures and questions and answers, so that it did not provide opportunities for students to be directly involved in learning; (2) the teacher has not given students the opportunity to think critically in finding the problem of a learning topic that is in accordance with students' interests; (3) students are less trained in finding knowledge

independently and less responsible for their respective tasks when doing group work; (4) there is no visible interpersonal ability between students; (5) students lack confidence and have not trained their courage to perform presentations in front of the class; (6) there is no variation in seating arrangements and learning support tools are not optimal; (7) students are less motivated in responding to learning.

One solution that can be sought in overcoming these problems is to choose an innovative learning model that is in accordance with the characteristics of students and the characteristics of natural science material in elementary schools. Innovative learning models according to researchers are good for applying to science learning light material that is by applying the cooperative learning model type group investigation. The Group Investigation learning model is one of the cooperative learning models that emphasizes heterogeneity, activities and collaboration between students (Huda, 2014). The cooperative learning model type group investigation has advantages including increasing independence, increasing student creativity, increasing interpersonal skills when working between students, increasing student reasoning (Christina & Kristin, 2016; Muliyantini & Parmiti, 2017).

With the correspondence between the nature of science learning with cooperative learning model type group investigation, the learning outcomes of science will be better (Ariadi et al., 2014). Previous studies have shown that cooperative learning model type group investigation can improve student learning outcomes (Aditya, 2016; Muliyantini & Parmiti, 2017). Therefore, researchers will apply the cooperative learning model type group investigation in learning science. This

study aims to examine how the influence of cooperative learning model type group investigation on the learning outcomes of science materials in the fifth grade students of SDN 1 Banjarejo.

METHOD

The type of experimental research used is quasi experiment. The form of experimental research designs that researchers will use is nonequivalent control group design (Sugiyono, 2010). Research data in the form of quantitative data to explain student learning outcomes after receiving treatment in the form of learning with cooperative learning model type group investigation which will be compared with the control class applying learning with conventional models dominated by lecture and question and answer methods.

The subjects of this study were fifth grade students at SDN 1 Banjarejo. This research was conducted at SDN 1 Banjarejo. This research was conducted in the even semester of the academic year 2017/2018 in February-May 2018. The population in this study were all fifth grade students of SDN 1 Banjarejo Lamongan City in the academic year 2017/2018 with a population of 60 students. In determining the sample class through cluster sampling technique by random drawing from various classes in one group, so that two sample classes are obtained namely the VA class SDN 1 Banjarejo as many as 30 students as an experimental class and the VB class SDN 1 Banjarejo as many as 30 students as control class. The independent variable in this study is the application of cooperative learning model type group investigation in the learning of light material science and the dependent variable is the learning outcomes of science students in class VA SDN 1 Banjarejo and students in class VB SDN 1 Banjarejo.

The data collection method used in this study is a test. The test instrument used to measure student learning outcomes variables in the process of learning light material in the form of pretest and posttest. Data were analyzed using independent t test (Sugiyono, 2012; Sundayana, 2013). Previously, a pre-requisite test had been carried out, namely the normality and homogeneity tests. Then, the n-gain test will be performed further gain-score test to find out the increase in student learning outcomes in the experimental class and the control class before and after learning (Hake, 1998).

RESULT AND DISSCUSSION

The prerequisite tests conducted showed that the data were normally distributed and the variance was homogeneous. Hypothesis testing is done to find out whether the Group Investigation model is effective against student learning outcomes. Based on the calculation of the hypothesis, it can be obtained $t_{count} > t_{table}$ that is 3.258 > 2.002, so it can be concluded that with a significance level of 5%, H_a is accepted and H_o is rejected. So it can be concluded that the difference in the average value that is large enough shows that cooperative learning model type group investigation are more effective in improving student learning outcomes of science subjects in class V on light material.

This result is reinforced by the results of the N-Gain Test calculation which obtains an average gain of the control class of 0.29 in the low category and an experimental average of 0.41 in the medium category. It can be concluded that the increase in student learning outcomes in experimental class is higher with the application of cooperative learning models of group investigation when compared to the control class with the application of conventional models. These results are in line with previous

research which shows that cooperative learning model type group investigation is effective in improving elementary students' science learning outcomes (Almuniar, Syamsiati, & Uliyanti, 2015; Ariawan, Jampel, & Rati, 2016; Budiastra, Sudana, & Arcana, 2015; Wardani, Setuti, & Sudatha, 2013).

Cooperative learning model type group investigation is a form of cooperative learning model that has a emphasis on the participation and activities of students to find their own material or everything about the subject matter to be learned (Dewi et al., 2018; Murniati & Barokah, 2017; Zainuddin, Fitriani, & Misbah, 2017). This model will also be able to foster the warmth of interpersonal relationships, trust, respect for rules and policies, independence in learning and respect for the dignity and dignity of others (Muliyantini & Parmiti, 2017). Cooperative learning model type group investigation give freedom to students to be able to solve problems according to what they are planning and based on their knowledge (Purnamasari, Arifuddin, & Hartini, 2018; Yulismina, Warsiti, & Ngatman, 2013).

Important activities in this learning model are in the investigation process conducted by students. Investigation has the effect of forming an investigation group that will work to solve problems with research not acceptance from the teacher (Yulismina et al., 2013). Students have great opportunities to be able to interact with other students, fill each other's gaps and exchange information more optimally so that it will lead to the lack of gaps between high-ability students and low-ability student (Sutrini, Suarni, & Renda, 2013). The use of cooperative learning model type group investigation in learning allows students to know the benefits of the material being learned for their lives, to be active in learning activities, to find out for themselves the concepts learned

without having to always depend on the teacher, being able to solve problems related to the concepts learn, work together with other students, and dare to express opinions (Budiastra et al., 2015).

CONCLUSION

The conclusion from the results of this study is that cooperative learning model type group investigation have a significant and positive influence on the learning outcomes of elementary students' science. Thus, cooperative learning model type group investigation can be applied in science learning in order to improve student learning outcomes. Further research is needed to further describe the effect of cooperative learning model type group investigation on various aspects of the abilities and skills of other students specifically.

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