METHODS DEMONSTRATION AND GROUP DISCUSSION METHODS MATHEMATICAL LEARNING DISCUSSION OF CLASS IV IN PAKAM LUBUK LESSON YEAR 2019/2020

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Abstract

This study aims to determine the use of demonstration methods and group discussions to compare the mathematics learning outcomes of students whose learning uses demonstration methods and group discussions in class V in Lubuk Pakam. This type of research is comparative research. The population in this study were all class V students in Lubuk Pakam, amounting to 2 classes. Sampling was done by random sampling technique. The sample in this study were class VA and VB, totaling 40 students. The data analysis technique used is the t test.

The results showed that the completeness of KKM 70 was 74.77% of the 27 students in Cycle I. In Cycle II, students who reached KKM 70 increased by 85.19% with a class average score of 82.59. From the data analysis with t test at the significance level $\alpha = 0.05$ and $dk = 60$, it is obtained $t_{count} (2.914) < t_{table} (2.000)$ so that $Ho$ is rejected and $Ha$ is accepted. From the statistical test it can be
concluded that there are differences in mathematics learning outcomes in the two-grade class V building subject, where learning using the group discussion method with the demonstration method can improve mathematics learning outcomes in Lubuk Pakam. So, it can be concluded that learning using demonstration methods and group discussions can improve student learning outcomes in Mathematics.

**Keywords:** demonstration method, group discussion on mathematics learning outcomes

**Introduction**

Education is one of the most important aspects that should be the concern of all parties such as the government, schools, teachers, parents, and the general public in order to increase the quality of Indonesian people's resources. Based on Law No. 20 of 2003 concerning the National Education System, education is defined as a conscious and planned effort to create a learning atmosphere and learning process so that students actively develop their potential to have spiritual, religious, self-control, personality, intelligence, noble character, as well as the skills needed by himself, the community, the nation and the state.

Education starts from basic education, namely Elementary School education (Hasbullah, 2009). Elementary education is a form of basic education unit that organizes a six-year education program. The success of basic education is very influential in continuing the next level of education. Therefore, the learning process at the basic education level must be implemented properly. One of them is the process of learning to count.

Mathematics is one of the important subjects in elementary school. Mathematics has been introduced since students entered grade I of Elementary School. In detail, Permendiknas No. 22 of 2006 concerning Standard Content for Mathematics in SD / MI states that the objectives of learning Mathematics in SD are (1) to train thinking and reasoning in drawing conclusions, (2) developing creative activities, (3) developing problem-solving abilities, (4) develop the ability to convey information or communicate ideas. This has not been realized in the actual learning process.
Based on the results of preliminary observations made by the author at SD Lubuk Pakam, it is known that the teaching and learning process carried out by the fifth grade teacher at the elementary school still uses the direct learning method, namely the lecture method. The learning process in the classroom has not used appropriate learning media according to student learning needs and learning materials. The lecture method used by the teacher affects the enthusiasm and enthusiasm of students in participating in the learning process tends to be low. This certainly has an impact on student learning outcomes.

It is known that the Mathematics average score of class V students has not yet reached the completeness according to the provisions of the Minimum Completeness Criteria (KKM), namely 65 with a target percentage of 80% completeness. Based on the pre-cycle scores in Mathematics in grade V, data was obtained, namely 48.15% or 13 students who reached KKM 65 while 51.85% or 14 students had not yet completed it. In addition to the learning method used, other reasons the researchers conducted this research were (1) students prefer to memorize rather than understand the process of a material, (2) students' interest in learning towards Mathematics is still very low. This can be seen in the attitudes of students during the learning process that are not focused and busy themselves. Therefore, researchers conducted research on improving mathematics learning outcomes using demonstration methods and group discussions.

Mathematics learning in schools is not merely memorizing formulas but providing understanding of concepts, facts, operations and mathematical principles so that reasoning will grow, thinking logically, systematically and critically and it is expected that curiosity will arise from problems that occur in daily life.

Mathematics as a basic science is rapidly developing, it is proven by the increasing number of mathematical activities in daily activities. But in reality there are still many students who feel reluctant, and are less interested in math subjects. The reality that occurs in the field, especially in elementary schools, that math subjects to date is one of the subjects that are not liked by most students. It is suspected that students' dislike of these mathematics subjects is because students assume that mathematics prioritizes logical and systematic thinking, thus causing students to feel
confused and troubled. This greatly affects the learning motivation obtained by students. The role of teachers especially in Elementary Schools in teaching and learning activities has a very important role. In teaching and learning activities when a student, for example does not do something that should be done, it is necessary to investigate the causes. The causes are usually varied, maybe he is not happy, maybe sick, hungry, there are personal problems and others. This means that in children there is no change in energy, not aroused by an affection to do something, because it does not have a purpose or need for learning. This kind of situation needs to be made an effort to find the causes and then encourage a student to want to do the work that should be done, namely learning. In other words, the student needs to be stimulated so that motivation grows on him.

The purpose in the use of the method of discussion is to enable student involvement in a broader process of interaction. In practice the interaction process includes using the method of questioning around the problem to be discussed. Usually the questions and answers expressed by the students themselves in discussing a problem, so that this reflects the activity of students who are high in learning. This discussion method can be used to learn concepts and principles, through this learning method students can understand concepts and principles better.

Student learning activities are more active, especially in the process of exchanging ideas through verbal communication. Learning method is defined as the way that teachers use, which in carrying out its functions is a tool to achieve learning goals. The use of learning methods is very necessary to facilitate the learning process. One method of learning that is often applied in the process of learning mathematics in Lubuk Pakam is the lecture method. In the process of learning mathematics this lecture method aims to optimize teaching and learning activities in order to achieve mathematical learning outcomes optimally. However, the views of students that mathematics lessons are difficult are still there, causing mathematics learning outcomes to remain low compared to the minimum completeness criteria (KKM) that have been determined which is 70. This can be seen from the average semester semester Mathematics exam (UAS) the 2018/2019 lesson, namely the VA class average VAS of 60.30, VB class of 50.97.
Therefore, to overcome student difficulties in learning, teachers are expected to be able to apply various learning approaches with variations in the use of learning methods. The use of the right learning method can provide convenience to students to understand the material presented but if the method used is not correct, the learning process will not run smoothly. In addition, students must play an active role in each learning process so students can develop ways of thinking to understand the material being studied. In the research carried out the authors used demonstration methods that were compared with group discussion methods.

Group discussion method is a learning method that exposes students to a problem and the main purpose of group discussion method is to solve a problem, answer questions, add and understand students' knowledge and to make a decision. In the discussion method each student occupies a dominant position in the learning process, each student in each group is required to try to understand and master the material being taught and always active when group work so that when appointed to present the results of group work they can convey it well and contribute value for the group. While the demonstration method is a way of delivering lessons to students by demonstrating or showing the learning tools directly, so students can see, feel and feel the props. Both of these methods lead to student learning activeness.

There are similar studies that have been conducted by several people before. First, Itnawati (2016) with a study entitled "Discussion Methods in Improving Student Learning Outcomes in Mathematics Learning in Primary Schools". The results showed that the discussion method affected student learning outcomes in Mathematics with 75% completeness in Cycles I and II. Second, Saadah (2017) with the research title "Application of Discussion Methods to Improve Mathematics Learning Outcomes in Using Fractions in Problem Solving for Class V Students of SDN 003 Tembilahan Kota Tembilahan District" with research results showing that there is an increase in student learning outcomes in mathematics after the teacher uses the discussion method in Mathematics learning activities. This can be seen from the comparison of the average value in pre-cycle, cycle I, and cycle II, namely 55.83 to 80.00 then, in cycle II it becomes 88.00 with 100% completeness. Classroom Action Research on improving learning
outcomes using the discussion method also shows the same thing. Fatimah (2019) conducted a study on "Application of Discussion Methods to Building Space Materials to Improve Learning Outcomes of Class V Students at SD Lubuk Pakam " with results showing that the application of the discussion method to building space materials can improve the learning outcomes of Class V semester II SD Lubuk Pakam Akkor District students. Palengaan Pamekasan Regency. This result increased from an increase in the average test result in cycle I = 62 to 75 in cycle II. While the activeness of students from 43.75% in the first cycle became 93.75% in the cycle.

Based on the description of the background, the formulation of the problem of this research is "How are the efforts to improve Mathematics learning outcomes through demonstration methods and group discussions in grade V SD Lubuk Pakam? This research is expected provide benefits for students and teachers. Students are expected to increase enthusiasm and motivation in participating in Mathematics lessons. Teachers are also expected to act as motivators and to be more creative in designing creative and innovative learning methods in the learning process.

The purpose of this study is to find out whether there is a difference between the method of group discussion and demonstration of the results of learning mathematics students of the subject matter of building up the space of the class of V Lubuk Pakam academic year 2019/2020?

**Theoretical Basis**

**Understanding Learning Outcomes**

Nasution in Kunandar (2010) states that learning outcomes are a change in individuals who learn, not only regarding knowledge, but also forming skills and appreciation in the individual who learns. Learning outcomes are the final goals to be achieved after participating in learning activities. Learning outcomes are a number of experiences obtained by students covering the cognitive, affective, and psychomotor domains (Rusman, 2013). From the theories above, it can be concluded that learning outcomes are a product that results from the learning process in the form of cognitive, affective and psychomotor knowledge.

**Understanding Mathematics**
Siswono (in Siagian, 2016), collects definitions from experts in the 1940-1970s as follows: a) mathematics as the science of numbers and space, b) mathematics as the science of quantities / quantities, c) mathematics as the science of numbers, space, magnitude, and breadth, d) mathematics as the science of relations, e) mathematics as a science of abstract forms, and f) mathematics as a deductive science. Siagian (2016) argues that mathematics is a branch of science that has an important role in the development of science and technology, both as a tool in the applications of other fields of science and in the development of mathematics itself. From the above opinion the authors conclude that education Mathematics is the basic science of numbers and students' personal relationships in order to develop in accordance with the development of science and technology.

**Demonstration Method**

The use of demonstration methods can be applied provided that they have the expertise to demonstrate the use of tools or carry out certain activities such as actual activities (Aqib, 2013: 104). According to Huda (2013: 231). Demonstration method is a way of presenting lessons by demonstrating or showing a process, situation or certain object that is being studied both in its actual form and in the form of imitation that is shown by the teacher or other learning resources in front of all students.

Demonstration method is a way of conveying lessons to students by demonstrating / showing the learning tools directly, so students can see, feel and feel the props (Willis, 2012: 105). While according to Daryanto (2013: 14), the demonstration method is a way of presenting information on activities teaching and learning by demonstrating how to do something accompanied by a clear explanation of the process.

**Discussion Methods**

The method of discussion in the teaching and learning process means the method of expressing opinions in deliberation to reach a consensus. Thus, the essence of the definition of discussion is meeting of minds. The discussion method is a way of solving a learned problem through sharing opinions in group discussions. According to Trianto (2015), discussion is a situation where teachers and students, or between students, talk to each other and share their ideas and opinions during learning. In learning, this discussion
method provides more opportunities for students to be involved active in learning even though the teacher is still the main control. The method of discussion aims to:

a) train students to develop skills to ask questions, communicate, interpret and conclude discussions;
b) train and establish socio-emotional stability;
c) develop the ability to think independently in solving problems so that a more positive self-concept grows;
d) develop the success of students in finding opinions;
e) develop attitudes towards controversial issues; and
f) train students to argue about something problem.

Aswan (Rahma, 2014) explains the steps for the discussion method in schools as follows.

a. The teacher suggests a problem to be discussed, namely in the form of questions from the learning material being studied and provides directions on how to solve it.

b. The teacher directs students to form discussion groups, appoints the chairman of the discussion, and takes notes, arranges rooms and seats, and provides facilities.

c. During the activity, the teacher acts as an observer and facilitator for students.

d. The chairman of the discussion is authoritative and acts decisively in leading discussion activities, as well as understanding discussion problems. Each member of the group must also know the problem to be discussed and how to discuss it. A good discussion provides an opportunity for each member to convey their opinions.

e. After the discussion, each group must report the results of the discussion. The discussion reports will be responded to by all students from other groups.

f. At the end of the activity, the teacher provides a review or explanation of the reports that have been discussed by each group. Students record the results of the discussion. The teacher also documents the report on the results of each group's discussion.

According to Sumiati and Asra (2009: 141), discussion is one of the learning methods so students can share their knowledge,
views and skills. According to Zaini (2005: 123), cit. Siadari at el. (2012) Discussion is a scientific conversation by several people who are members of one group, to exchange opinions about a problem or jointly seek solutions to get answers and truths to a problem..

The method of discussion is the interaction between students and students or students with teachers to analyze, solve problems, explore, debate certain topics or problems (Aqib, 2013: 107). Whereas Willis (2012: 107) suggests that. Discussion method is a way to disseminate information or lessons through discussion. Discussions usually arise when there is a problem which is thought to be a variety of answers, giving rise to dialogues between the participants of the discussion.

Furthermore Sanjaya (2008: 154) argues that, "The method of discussion is a learning method that exposes students to a problem". The method of discussion is that participants are faced with a problem in the form of a question or problematic statement to be discussed and solved together (Daryanto, 2013: 12)

Student Mathematics Learning Results

According to Hamalik, cit. Susanto (2013: 4) asserts that: Learning is a process of changing the behavior of an individual or someone through interaction with their environment. This change in behavior includes changes in habits, attitudes (affective) and skills (psychomotor). Whereas Susanto (2013: 4) concluded that: Learning is an activity carried out by someone intentionally in a conscious state to obtain a new concept, understanding or knowledge so as to enable a person to have a relatively permanent behavior change both in thinking, feeling, and acting. Slameto (2010: 2) suggests that: Learning from a business process that is carried out by someone to obtain changes in the new behavior as a whole, as a result of his own experience in interaction with his environment.

Based on the description of the understanding of learning above, it can be understood about the meaning of learning outcomes, namely changes that occur in students, both involving cognitive, affective (attitudes) and psychomotor (skills) aspects as a result of learning activities (Susanto, 2013: 5). According to Sumiati and Asra (2009: 38), behavior change is the result of learning. That is, someone is said to have learned, if he can do
something that cannot be done before. As explained above, the learning outcomes include:

**a. Understanding of concepts**

According to Bloom, cit. Susanto (2013: 6) understanding concepts is defined as the ability to absorb the meaning of the material or material being studied. Understanding is how much students are able to accept, absorb, and understand the lessons given by the teacher to students, or the extent to which students can understand and understand what he reads, seen, experienced or felt.

**b. Process skills**

Usman and Setiawan, cit. Susanto (2013: 9) argues that: Process skills are skills that lead to the development of fundamental mental, physical, and social abilities as drivers of higher abilities than individual students. Skills means the ability to use thoughts, reason, and actions effectively and efficiently to achieve a certain outcome, including creativity.

**c. Attitude**

According to Azwar, cit. Susanto (2013: 10), attitude is not just a mental aspect, but also includes aspects of physical response. So, this attitude must be in harmony between mental and physical simultaneously because if the mentality is raised, then the attitude shown by someone is not yet clear.

Based on the description above, it can be concluded that learning outcomes are abilities possessed by students after he receives his learning experience. So the results of learning mathematics are abilities possessed by students after he has received the experience of learning mathematics.

**Research Methodology**

This research is a random sampling. Random sampling research is a planning for learning activities in the form of an action, which deliberately emerges and occurs in a class together (Arikunto, 2012). The procedure carried out in this classroom action research is in the form of a cycle that will last more than one cycle depending on the level of success and the achievement of the targets to be achieved. Broadly speaking, each cycle consists of four stages, namely planning, implementation, observation (experience) and reflection.
This research is included in the type of comparative research. Comparative research is comparative research (Siregar, 2013: 15). That is comparing the mathematics learning outcomes of class V students whose learning uses demonstration and discussion methods. The population is fifth grade students in Lubuk Pakam consisting of 2 classes of V who are enrolled in the even semester of the school year 2019/2020. Sampling uses cluster random sampling.

The instrument in this study was a test of learning outcomes. The instrument of research on cognitive aspects is in the form of tests of subject matter given during the treatment. The test given is in the form of multiple choice questions (objective) of 10 items which have 4 answer choices (a, b, c and d). If the question is answered correctly given a score of 1 and if incorrectly given a score of 0. The instrument used has gone through tests of validity, reliability, distinguishing power and level of difficulty. To test the generalization ability of the average data for two uncorrelated samples, the separated t variance test was used. This test is carried out after the normality test and homogeneity test are carried out.

Results And Discussion

The results of these studies come from test results and observations. The test results are presented in the form of quantitative data while the results of non-test research in the form of observations are presented in descriptive form. This study aims to improve student learning outcomes by applying demonstration methods and group discussions. Every student is required to get the best results and be able to practice it in everyday life. So that learning outcomes do not just disappear when the learning process is complete, but can last and be used when needed. The results of the pre-cycle pre-test, post-test mean scores in Cycle I and II can be seen in the following figure

From the description of the chart above, it can be seen that the learning outcomes of Class V SD students Lubuk Pakam in Mathematics can be improved by applying demonstration methods
and group discussions. In Figure 1, it can be seen that there is a significant increase in the class average score from pretest to posttest in Cycle I, which is 12.23%, namely from 64.44%, increasing to 76.67%. Effectiveness of method application discussion in improving learning outcomes seen from Cycle I to Cycle II, namely 5.92%. This research is sufficient in Cycle II because the results of the evaluation in the second cycle have achieved success in the "High Enough" category with the percentage of students who have achieved a KKM 70 score of 80% and have reached the predetermined completeness target. Based on these results it means that the results of this study have reached the indicator determined was 80% and the researcher did not continue the research to the next cycle.

Based on the results of observations from teachers and students, it can be seen that Mathematics teaching and learning activities are more fun using the discussion method. Students are also able to understand the material and be able to solve problems, namely problems about the subject matter given by the teacher. In the background, the researcher hopes that by applying this method students will be more enthusiastic in learning Mathematics. This research is also expected to provide benefits for students to be able to solve problems, especially math problems in everyday life. This is in accordance with Suryosubroto's opinion (in Trianto, 2015) which states that the discussion method can be used by teachers to: a) help students learn to think critically and practically in various subjects.

Thus, this study shows that the discussion method has many advantages if it is applied in learning activities, especially mathematics learning. As for the advantages of the learning method

1. Demonstration and group discussion as follows. Students understand that there are many ways that can be used to solve every problem. This method can develop students' thinking patterns even with different abilities.

2. Students are trained to be more active in expressing their opinions in groups and classes. This method teaches students to confidently express opinions and respect the opinions of others as well.
3. Students learn to work together with their groups in solving a problem. This method develops social interaction skills between students.

Conclusion

In proving the research hypothesis obtained the value of $t_{\text{count}}$ is greater than the price of $t_{\text{table}}$ which is $2.914 > 2.000$. Thus $H_0$ is rejected and $H_a$ is accepted. So that it can be concluded that there is a difference between the learning outcomes of mathematics students in the subject of building V Lubuk Pakam classrooms whose learning uses discussion and demonstration methods. The results showed significant results from the pretest to Cycle I and II, namely from 48.15% to 74.07%, then in the post-test cycle II amounted to 85.19%. In Cycle II, learning completeness has reached 80%, so it is enough until Cycle II. In addition to learning outcomes, the application of demonstration methods and group discussions also improves student learning outcomes, and improves students' ability to think critically. In character values, the application of the discussion method also increases students' self-confidence, cooperation, and respect.

The results of this study are expected to provide valuable knowledge and experience for researchers, teachers, and students. Other researchers can also apply this method to other subjects or other materials in learning mathematics. From this research, it is hoped that creative teachers in designing learning activities using learning methods that are in accordance with the material and student needs so that learning becomes more meaningful. The school also supports teaching and learning activities by providing proper learning facilities and infrastructure.

Bibliography

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