

IMPROVING MATHEMATICS LEARNING COMPLIANCE USING THE DISCOVERY METHOD IN CLASS II STUDENTS OF SD NEGERI 023 RAMBAH

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***Abstract,** This classroom action research was conducted at SD Negeri 023 Rambah, Rokan Hulu Regency in class II for the 2019/2020 school year. Actions are taken by applying the discovery method to improve students' mathematics learning mastery. Discovery learning method is a learning method that can improve students' thinking skills to solve the problems they face. By using the discovery method, student learning completeness in each cycle experiences changes and increases. This is proven by the achievement of pre-cycle test results, the average percentage is only 29.03% and at the end of the second cycle it reaches 87.10%. The application of the demonstration method can improve the competence of grade II students at SD Negeri 023 Rambah, Rokan Hulu Regency.*

Keywords : Discovery method, complete learning.

I. INTRODUCTION

Mathematics learning achievement of class II students of SD Negeri 023 Rambah for the 2019/2020 school year has not been satisfactory because the average student achievement is still below the Minimum Completeness Criteria (KKM). Mathematics is one of the most feared subjects by students.

Based on the results of observations in class and data on student learning outcomes for grade II SD Negeri 023 Rambah, in the first semester of the 2015/2016 academic year, it is suspected that the cause of the problem is as follows:

Some students think that Mathematics is an uninteresting, difficult, and boring subject.

1. Mathematics learning process is not conducive.
2. Teachers still often have difficulty in instilling basic mathematical concepts to students, especially in the concept of comparing numbers.
3. The learning method used is still teacher-centered.

This situation needs to be addressed immediately because it greatly affects the quality of schools. The purpose of school mathematics, specifically in Elementary School (SD) or Madrasah Ibtidiyah (MI) so that students have the following abilities:

1. Understand mathematical concepts, explain the interrelationships between concepts and apply concepts or algorithms, flexibly, accurately, efficiently, and precisely, in problem solving.
2. Using reasoning on patterns and traits, performin mathematical manipulations in making generalizations, compiling evidence, or explaining Mathematical ideas and statements.
3. Solving problems which include the ability to understand problems, design mathematical models, complete models and interpret the solutions obtained.
4. Communicating ideas with symbols, tables, diagrams, or other media to clarify the situation or problem.
5. Having an attitude of appreciating the use of Mathematics in life, namely having curiosity, attention, and interest in studying Mathematics, as well as a tenacious and confident attitude in problem solving.

The purpose of mathematics lessons in schools provides an illustration that learning is not only in the cognitive field but extends to the psychomotor and affective fields. Mathematics learning is directed to the formation of personality and the formation of thinking skills that rely on the nature of mathematics, this means that the

nature of mathematics is the main element in learning mathematics. Therefore, the results of learning Mathematics show mathematical thinking abilities in students, which leads to the ability to use Mathematics as a language and tool in solving problems faced in their lives. Another result that cannot be ignored is the formation of a good and strong personality.

To realize the objectives of the Mathematics lesson, appropriate strategies and learning methods are needed. The discovery method is a student-centered method. The discovery method in student learning activities looks more active. In addition, students' reasoning power can be developed, especially for Mathematics.

There are several characteristics of children at elementary school age that teachers need to know, in order to better know the condition of students, especially at the elementary school level. As a teacher must be able to apply learning methods that are in accordance with the circumstances of their students, it is very important for an educator to know the characteristics of their students.

In addition to paying attention to the characteristics of elementary school-aged children, the implications of education can also start from the needs of students. The meaning of SD needs can be identified from its developmental tasks. Developmental

tasks are tasks that arise at a certain time or period of an individual's life, which if successful will cause a sense of happiness and lead to success in carrying out subsequent tasks, while failure in carrying out these tasks causes feelings of happiness, rejection. by the community and difficulties in dealing with subsequent tasks. Elementary school age children are characterized by three major external impulses, namely (1) children's confidence to leave the house and enter the peer group; (2) children's belief in entering the world of games and activities that require physical skills, and (3) mental trust in entering the world of adult concepts, logic, symbols, and communication.

Thus an understanding of the characteristics of students and the developmental tasks of elementary school children can be used as a starting point for determining educational goals in elementary schools, and for determining the right time to provide education according to the developmental needs of the children themselves. Based on the description above, in this study the researcher will use the discovery method to improve student learning mastery in Mathematics in Class II students of SD Negeri 023 Rambah for the 2019/2020 academic year.

Learning is a deliberate activity carried out by individuals so that there is a

change in self-ability, by learning a child who was previously unable to do something, becomes able to do something, or a child who was previously unskilled becomes skilled. (M. Djauhar Siddiq, 2008: 3) B.F. Skinner in Nabisi Lapono (2008: 5) that learning produces behavioral changes that can be observed, while behavior and learning are changed by environmental conditions.

Nana Sudjana (1987:28) Learning is neither memorizing nor remembering. Learning is a process marked by a change in a person. Changes as a result of the learning process can be shown in various forms such as changes in knowledge, understanding, attitudes and behavior, skills, abilities and abilities, reaction power, acceptance power and other aspects that exist in individuals. Bruner, through his theory reveals that in the learning process children should be given the opportunity to manipulate objects or teaching aids that are specially designed and can be tampered with by students in understanding a mathematical concept. Through the teaching aids they study, the child will see firsthand how the regularity and pattern of structures contained in the object he is paying attention to. (Siti Hawa, et al., 2008: 6) Learning is an effort made by someone (teacher or others) to teach students who are learning. In formal education (schools), learning is a task

assigned to teachers, because teachers are professionals who are prepared for it. (M. Djauhar Siddiq, 2008: 9).

From some understanding of learning above, it can be concluded that learning is an activity that can bring changes in a person's behavior, knowledge, skills, and attitudes because they interact with the environment. A good learning environment is an environment that stimulates and challenges students to learn.

Learning Mathematics is one of the subjects that children fear in general because Mathematics is included in the subjects tested with national standards. Sutawijaya in Siti Hawa (2008: 1) Mathematics examines abstract objects (thought objects) which are arranged in an axiomatic system using symbols (symbols) and deductive reasoning.

According to Hudoyo in Siti Hawa (2008: 1) Mathematics is concerned with ideas, rules, relationships that are arranged logically so that Mathematics is related to abstract concepts. As a Mathematics teacher, in instilling one's understanding of learning Mathematics, the main thing is how to instill knowledge of concepts and procedural knowledge. Mathematics subjects need to be given to all students starting from elementary school to equip students with the ability to think logically, analytically, systematically, critically, and

creatively, as well as the ability to work together.

These competencies are needed so that students can have the ability to obtain, manage, and utilize information to survive in conditions that are always changing, uncertain, and competitive. To master and create technology and the ability to think logically, analytically, systematically, critically, and creatively in the future, it is necessary to have a strong mastery of mathematics from an early age and learning that makes students learn and become meaningful. (Sitihawa et al., 2008: 3).

Wiji Suwarno (2009: 95) Complete learning is a learning strategy that can be implemented in the classroom with the assumption that under the right conditions all students will be able to study well and obtain maximum results on the teaching materials being studied. In order for all students to obtain maximum results, learning must be carried out systematically. Systematism will be reflected in the learning strategies implemented, especially in organizing the objectives and teaching materials, as well as carrying out evaluations and providing guidance to students who fail to achieve the goals that have been set.

Learning objectives must be specifically organized to facilitate checking of learning outcomes. Meanwhile, teaching

materials need to be translated into certain learning units, and complete mastery of materials for all purposes of each learning unit is required of students before the learning process proceeds to the next stage.

Evaluation is carried out after the students complete a certain learning activity which is the basis for obtaining feedback. The main purpose of the evaluation is to obtain information about the achievement of objectives and mastery of students' materials. The results of the evaluation are used to determine where and in what ways students need to get guidance in achieving goals, so that all students can achieve their goals and master teaching materials to the maximum (complete learning).

Sund in Soli Abhimanyu et al. (2008: 9) argues that discovery is a mental process in which students assimilate a concept or principle. Meanwhile, according to Sund, inquiry includes discovery. In other words, inquiry is an extension of the discovery process that is used more deeply. This means that the inquiry process contains higher-level mental processes, for example: formulating problems, designing experiments, conducting experiments, collecting data, analyzing data, drawing conclusions, and so on. Finally, Sund argues that the use of the discovery method is good for low grade students, while inquiry is good for high grade students.

Thus discovery is defined as a learning procedure that emphasizes individual learning, object manipulation, conducting experiments, before arriving at generalizations. The discovery method (prioritizes active student learning), process-oriented, self-directing, self-seeking, and reflective.

The purposes of using the method of discovery include:

- a. To obtain learning methods that are in accordance with the material and learning objectives that have been set.
- b. To enable students to learn according to the material and learning objectives.
- c. To vary the learning methods used so that students do not get bored.
- d. So that students can find themselves, investigate on their own, and solve the problems they are learning on their own, so that the results are faithful and long-lasting in memory, and are not easily forgotten.

The steps for implementing the method of the invention are:

- a. Preparatory Activities
 - 1) Identifying student learning needs (need assessment).
 - 2) Formulate learning objectives.
 - 3) Prepare the problem (lesson material) to be solved. The problem is stated in the form of a statement or question. The

- problem about the concept or principle that will be found needs to be written clearly.
- 4) Prepare the necessary tools and materials.
- b. Discovery Implementation Activities
- 1) Opening Activities
 - a) Perform apperception, which is asking questions about the subject matter that has been taught.
 - b) Motivating students with short stories that are related to the material being taught.
 - c) State the learning objectives and activities/tasks carried out to achieve the learning objectives.
 - 2) Core Activities
 - a) Expressing the problem to be answered through discovery activities.
 - b) Briefing discussion on how to carry out the findings/solving problems that have been determined.
 - c) Implementation of discovery in the form of investigation/experimental activities to find concepts or principles that have been set.
 - d) Assist students with information or data, if required by students.
 - 3) Closing Activities
 - a) Ask students to summarize their findings.
 - b) Evaluating the results and the discovery process.
 - c) Follow-up, namely asking students to re-discover if they have not mastered the material, and asking students to do enrichment assignments for students who have made good discoveries.
- e) Helping students to analyze the data found, if needed.
 - f) Stimulate the interaction between students and students.
 - g) Praise students who are active in carrying out inventions.
 - h) Give students the opportunity to report their findings.

II. RESEARCH METHODS

The implementation of learning improvements was carried out in class II SDN 023 Rambah, Rokan Hulu Regency. This Classroom Action Research took place from October to December 2019. To clarify the implementation of improvement between cycles, the following is an explanation of the scenario for the implementation of learning improvement.

The implementation of learning is carried out during the learning process and

is carried out in 1 pre cycle and 2 repair cycles.

a. Learning Improvement Plan

1) Planning

- a. Collect the necessary data.
- b. Planning learning using the discovery method.
- c. Provide learning media objects in accordance with the characteristics of students.
- d. Making observation instruments.

e. Make a learning evaluation sheet.

2) Action Execution

The steps taken are in accordance with what is in the lesson plan as follows:

- a) The teacher applies the lesson plan by using the discovery method on the concept of comparing numbers.
- b) Students learn Mathematics on the concept of addition by using the discovery method.

3) Observation

- a) The teacher's actions observe students during the learning process.
- b) Assessing student learning outcomes by using learning evaluation tools.

4) Reflection

The author and colleagues discussed the learning outcomes, from the results of the discussion several things emerged that were suspected to be the cause of the deficiencies in this first cycle, namely:

- a) Students do not have source books
- b) The questions given are too difficult
- c) The language is difficult for students to understand

For this reason, there is an improvement in learning mathematics in the hope of increasing learning achievement. Furthermore, the improvement of the shortcomings of this cycle was carried out in next cycle.

III. RESULTS AND DISCUSSION

At this stage students have made progress in learning, namely the average value obtained by students is 79.07, the more active students are 17 children (54.84%) students are not active 14 children (45.16%) the more students are active because this learning is felt by children to be fun, even though there has been an increase, the author hopes that the desired completeness can be even better. Therefore, the writer needs to correct himself personally in the learning process. Finally, the author made improvements again by

pressing the use of learning strategies to find a partner optimally in the next lesson.

This learning improvement was carried out in cycle II with the hope that it would be clearer in understanding the learning material about the unit of measurement of time regarding the order of the names of the days and the results of completeness would increase even more.

After carrying out the second cycle, it turned out to be further improving learning outcomes and students were getting clearer in the results of applying the material, it was proven that the average value increased from 79.07 to 90.37 so that the completeness reached 87.10% of students. They tried to quickly match the question cards and answer cards, so the efforts made by the author were quite good and this improvement was stopped here. There are still 4 students who have not finished this is because these students cannot read and write correctly so they cannot answer questions or match question cards with answer cards.

From this description there are benefits from improving learning with demonstration learning strategies including:

- a. The student learning process has played an active role.
- b. Students in looking for pairs of question cards or answers seemed

excited and excited to find their partner immediately.

- c. The average yield of the cycle is always increasing.

IV. CONCLUSION

The use of the discovery method can increase students' creativity because by using the discovery method it is possible to develop active student learning. In addition, the knowledge found by themselves through the discovery method will be truly mastered, and easy to use/transfer in other situations, students can master one of the scientific methods that are very useful in their lives, students are accustomed to thinking analytically and trying to solve problems to be transferred. in community life.

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