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EFFORTS TO IMPROVE STUDENT LEARNING OUTCOMES THROUGH DEMONSTRATION METHODS IN MATHEMATICS LESSON MATERIALS BUILDING SPACE

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Abstract

This study aims to examine efforts to improve student learning outcomes through demonstration methods in mathematics subjects with building materials in the form of blocks and cubes for fourth grade students of MIN 26 Pidie. This type of research uses classroom action research (CAR), with subjects covering 37 fourth grade students at MIN 26 Pidie. The results of this study conclude that the application of the demonstration method can improve the learning outcomes of fourth grade students at MIN 26 Pidie in mathematics lessons on building materials (cubes and blocks). This is evidenced by the results of the student's pre-test which was originally low, namely 38.64 (none even completed according to the Minimum Completeness Criteria/KKM). The results of the final test in the first cycle that did not use the demonstration method (still conventional method) showed an increase, where 7 students had achieved the KKM score (18.9%) while the other 30 students had not reached the KKM (81.1%). Furthermore, the results of the final test in the second cycle that had used the demonstration method showed a significant increase, where there were 32 students (86.48%) who met the KKM and 5 students (13.52%) who had not reached the KKM.

Keywords: Learning Outcomes, Demonstration Methods, Mathematics Learning.

INTRODUCTION

Learning mathematics is one of the basic materials that must be studied at the SD/MI level (Rahayu, 2013: 1-5). This is intended to train children's logical thinking and hone higher-order thinking skills from an elementary age (Mulyani & Halidjah, 2013). Furthermore, children will be given mathematics learning at the junior high school (junior high school equivalent), senior high school (SMA) and tertiary level (in certain study

programs). Usually, every material in mathematics is seen as something that is scary and difficult for students (Lailiyah & Setyawan, 2022: 714-718).

It seems that children's worries about taking math lessons can be transmitted from time to time. In fact, mathematics is a lesson that is close to children's daily lives, namely numbers. According to Zuliatin (2021), children consider mathematics to be difficult because they have to memorize formulas and derivatives of numbers in the process of addition, subtraction, division or multiplication. Besides that, Sari & Sari (2021: 12-18) added that math lessons are considered difficult by children because many of the questions are story-based. These various obstacles have always been a form of obstacle in learning mathematics.

According to Sukerti (2021: 232-238), frames about learning mathematics are considered difficult by children, not entirely caused by fear and reluctance of children to learn mathematics. This can also be caused by conventional teacher teaching strategies or methods, so that children feel bored. Furthermore, Helminaria (2018: 908-921) explains that children's anxiety in learning mathematics is influenced by the teaching process carried out by the teacher in class. For this reason, creativity from mathematics teachers is needed to present learning more effectively and fun.

The creativity of teaching mathematics can be carried out by the teacher through the setting or arrangement of the classroom (Murdiana, et.al., 2020: 152-160). In addition, teachers can also apply various models, methods and active learning strategies, as a form of stimulus for student activity in participating in learning. The teacher's efforts in creating an active and conducive learning atmosphere provide space for students to be actively involved and add to learning experiences, especially mathematics material. In fact, Supardi (2015) suggested making various forms of innovation so that students do not feel bored learning mathematics.

In practice, Tanjung (2018) in his research explained that various innovations can be given to children in learning mathematics, including using snakes and ladders media or crossword puzzle media. Siswono (2016: 11-26) continued that mathematic formulas that are often considered difficult by children should be made up of unique abbreviations and close to daily activities so that children can easily memorize these formulas. Sholeh & Fahrurozi (2021) term this effort as a combination of games and learning, where children still get their learning rights and are close to the world of play.

Elementary-aged children at the SD/MI level have a world of play, where all children's activities are always directed at play, even learning is considered a game. Responding to the developmental phase of the child's age, Setiawan (2020: 12-21) explains that learning given to children should not separate the world of children's play, including learning mathematics. Thus, the term edutaiment was born as a combination of learning while playing, playing while learning for children.

Mathematics learning, which is seen as difficult and boring for children, should be re-framed with a description that mathematics is a subject whose material is very close to children's daily life and is capable of being a provision to train children's thinking skills (Fajriyah, 2021). On this basis, the right method is needed to help change the mindset or mindset of children about mathematics.

According to Widiyanto & Yunianta (2021: 425-436), the demonstration method is a choice of methods that are effectively used in learning. This is because children at the cognitive stage of concrete thinking need various media that can be captured by the sense of sight and clearly audible (audio-visual) and can be demonstrated (kinesthetic). Elementary-aged children at grade IV MIN 26 Pidie are suitable for teaching mathematics using the demonstration method. Apart from being concrete, the demonstration method can also help the teacher in animating an active atmosphere in the classroom, so that students are actively involved (proactive) during the learning process.

In fact, relevant research on improving student mathematics learning outcomes and demonstration methods has been extensively researched separately by previous researchers. Among them are discussing the aspects of student learning activities (Nugraha, 2021: 12-21), the use of number line bridge teaching aids (Arifuddin & Arrosyid, 2017: 165-178), cutting stick media (Toruan, 2021: 247-252), the use simple teaching aids for unit weight ladders (Putra & Clara, 2020: 568-575), material for fractional monetary values (Marwatan, 2022: 437-447), problem-based learning models (Suardana, 2019: 270-277), mixed arithmetic operations (Magnatis, 2019: 20-28; Aprinawati, 2017: 54-67), efforts to improve student achievement (Sariningtyas, 2019: 40-47), and studies on the subject matter of symmetry (Astuti, 2018).

Observing the description above, there is a gap analysis of this study with the previous one, namely from research material in the form of cubes and blocks, as well as through classroom action research testing how much the implementation of the demonstration method can improve mathematics learning outcomes for class IV MIN 26

Pidie students, which is summarized in the title of the research, "Efforts to Improve Student Learning Outcomes Through Demonstration Methods in Mathematics Lesson Material Construct Space". Through this research, it is hoped that it will become a body of knowledge regarding the application of the demonstration method as an effort to improve mathematics learning outcomes for elementary school students.

RESEARCH METHODS

This research uses classroom action research (PTK) to reveal and improve the process and results of student learning in the classroom. The subjects of this study consisted of 37 students of class IV MIN 26 Pidie, with details of 19 male students and 18 female students. The research was carried out from February to April 2022, carried out in 2 cycles with 4 stages in each cycle, namely planning, implementation, observation or data collection and reflection (Assingkily, 2021).

DICUSSIONS AND RESULT

This research was carried out in 2 cycles by applying the demonstration method in an effort to improve the mathematics learning outcomes of class IV students at MIN 26 Pidie on the material of cubes and blocks. More is described below:

CYCLE I (FIRST)

Learning methods have an important role for teachers to streamline the learning atmosphere in the classroom. This study uses the demonstration method as an effort to improve student learning outcomes in class IV MIN 26 Pidie in mathematics subject matter of cubes and blocks. The description below discusses the first cycle with 4 (four) stages, namely planning, implementing, observing and reflecting.

Action Planning in Cycle I

Prior to the planning stage, the researcher first identified the learning problems experienced by students in mathematics, especially the material of cubes and blocks. After finding the results of the pre-test, the researcher prepared a learning implementation plan (RPP) which contained the procedures and processes of learning activities for the first cycle. Then, prepared learning facilities that supported the implementation of the learning process (eg student textbooks). Next, the researcher made student observation sheets.

This is intended to monitor or observe the condition of students and the state of learning activities in class during the mathematics learning process (grade IV MIN 26 Pidie).

According to Fanani, et.al. (2020: 33-37), planning in classroom action research is needed by researchers. Apart from being used as the basis and "compass" or direction for research purposes, planning is also the basis for improving (reforming) education through classes. Waluyo & Sukatiman (2021: 359-380) added that efforts to improve education from existing classrooms in the classroom action research process contain observation guidelines, guidelines for implementing learning and preparing the necessary facilities during the learning process.

Based on the description above, it can be understood that action planning in cycle I is urgent as a guide for implementation and observation. The planning stage starts with identifying problems and pre-testing students' mathematics learning outcomes using conventional methods to review the extent to which student learning outcomes are achieved based on the minimum completeness criteria (KKM). After obtaining the results of the pre-test, the researcher then compiled the lesson plans and observation sheets, as well as prepared the teaching aids or learning tools needed to organize the class.

Implementation of Actions in Cycle I

The implementation stage is a form of realization of the previous design. Where, the entire process is carried out according to the lesson plans in learning, carrying out observational actions according to the observation sheets that have been prepared at the planning stage, and using learning tools that have been previously identified according to research needs. The material that is focused on in this research is mathematics lessons about cubic and block geometric shapes, using the demonstration method.

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The activities at the action implementation stage were carried out in 3 meetings, with a time allocation of 2 x 30 minutes. Where, each meeting is divided into 3 (three) activities, namely initial activities, core activities and final activities (closing). At each meeting

(starting from meeting I-III) the researcher consistently carried out the same activities. In the initial activity, the researcher as well as the teacher started the lesson by greeting (Assalamualaikum wr.wb.), checking student attendance, giving apperception to students, and explaining the material and learning objectives.

Furthermore, the core activities were carried out by the researcher as well as the teacher by explaining the material about cubes and blocks and asking students directly about their understanding regarding cubes and blocks and objects around students. Then, the teacher forms small groups, gives an explanation of the steps for group work, instructs students to make examples of cubes or blocks from the learning tools that have been prepared, and dares to present their work in front of the class.

The next step, the teacher gives questions to students, provides opportunities for students to ask questions, appreciates student performance (rewards). Finally, in the core activities the teacher motivates students and questions student learning impressions. At the final or closing activity stage, the researcher as well as the teacher gives reflection to students on the learning activities that have been carried out, asking students to conclude the travel material according to students' understanding. Then, the teacher and students pray together, and finally the teacher greets the students.

Observation and Reflection in Cycle I

At this stage, the observations were made by mathematics teachers who were deliberately chosen directly by the researchers. This observation task was carried out to see the skills of researchers in teaching and see student learning activities. This is intended to obtain objective learning outcomes qualitatively and quantitatively. The learning outcomes obtained in cycle I become a reflection for the next action (Cycle II). The student learning outcomes experienced an increase in learning outcomes in learning mathematics with cubic and block building materials, namely 66.48%. Likewise, the results were not optimal because students who achieved KKM scores totaled 7 students.

CYCLE II (Second)

The process in the second cycle is the same as the previous cycle (cycle I), namely through 4 (four) stages, including planning, implementing, observing and reflecting. The results of the final test in cycle I which did not use the demonstration method (still conventional methods) showed an increase, where 7 students had achieved the KKM score

(18.9%) while the other 30 students had not reached the KKM (81.1%). Furthermore, the results of the final test in cycle II which had used the demonstration method showed a significant increase, where there were 32 students (86.48%) who fulfilled the KKM and 5 students (13.52%) who had not reached the KKM.

Based on the average results on the initial test (pre-test) cycle I, it can be seen that of the 37 students, none were included in the complete learning category, meaning that 37 students (100%) were not included in the learning complete category. The overall average score of the students on this test was 38.64% less than 85. Then the researchers carried out the teaching and learning process which was carried out in the classroom. At the end of the lesson the researcher gave a final test (post test), from the results of the test only 7 students were complete in learning (18.9%), and 30 students were not included in the complete learning category (81.1%). The average value obtained by students is 66.48% <85%. Can be seen in table 4.6 above. This means that in this first cycle the average value obtained by students has not reached the KKM value that has been determined.

Furthermore, based on the results of cycle I, the researcher continued the learning process in cycle II which aims to be able to improve student learning outcomes in this mathematics subject, learning in cycle II only focused on learning that students did not understand the material in cycle I. After the researcher carried out the activity teaching and learning process, the researcher gave a final test that is to determine student learning outcomes. It can be seen that there are 32 students (86.48%) who are included in the complete learning category, this value is> 85%, meaning that they have achieved the value expected by the teacher. And students who are not included in the complete learning category are 5 students (13.51%) meaning <85% have not reached the KKM score. The overall average score of the students reached 88.64% and achieved the KKM score. From the final results the students obtained a value of 88.64%, the researcher no longer continued the learning process in the next cycle because the scores achieved by students had reached the KKM score.

CONCLUSION

Based on the description of the results and discussion above, it can be concluded that the application of the demonstration method can improve the learning outcomes of fourth grade students at MIN 26 Pidie in mathematics subject matter of geometric shapes (cubes and blocks). This is evidenced by the results of the students' pre-test which were initially low,

namely 38.64 (none even completed according to the Minimum Completeness Criteria/KKM). The results of the final test in cycle I which did not use the demonstration method (still conventional methods) showed an increase, where 7 students had achieved the KKM score (18.9%) while the other 30 students had not reached the KKM (81.1%). Furthermore, the results of the final test in cycle II which had used the demonstration method showed a significant increase, where there were 32 students (86.48%) who fulfilled the KKM and 5 students (13.52%) who had not reached the KKM.

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