

Improving Student Learning Outcomes Using the Demonstration Method with "Rule Conversion" Media on Length Conversion Material in Primary School

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Abstract

Mathematics is the study of interconnected values and concepts. This study is motivated by the problems of students in learning mathematics unit length conversion material class IV MI Islamiyah, learning unit length conversion material unsatisfactory learning outcomes due to lack of learning media that can attract students' attention. The purpose of this study is to improve student learning outcomes using the demonstration method through rule conversion media in the material of converting units of length in class IV MI Islamiyah. This research is a Classroom Action Research consisting of 2 cycles. The research subjects were grade IV MI Islamiyah students totaling 15 students. This research data use formative tests and observation sheets. The analysis technique used is the quantitative descriptive analysis technique. The results showed an increase in observation of teacher activeness from cycle I to cycle II by 65% and 92% (an increase of 27%) and observation of student activeness by 46% and 89% (an increase of 27%). 43%), and the average student score was 71 (46%) to 81 (80%). Based on these results, it can be seen that the use of rule conversion media can improve the test scores of grade IV MI Islamiyah students on the material of length unit conversion

Keywords: *Media rule Conversion, Demonstration Method, Unit of Length Material, Primary School*



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Introduction

Mathematics is a universal science that underlies the development of modern technology, has an important role in various disciplines, and advances human thinking (Depdiknas, 2016: 147). Meanwhile, learning is defined as an effort that deliberately involves and uses the professional knowledge of the teacher to make someone able to achieve curriculum goals (Kosasih, 2014: 11). Learning takes place effectively if the goal is achieved as planned. Math is a subject that is feared by most students. However, math has an important role in life so it must be included in the education curriculum in Indonesia.

Mathematics lessons have been introduced since children enter preschool age by teaching basic numbers in mathematics. Mathematics really needs its role in everyday learning, so it is very important to master mathematics for elementary school students (Rakhmawati & Mustadi, 2022). The reason math must be there for students is that in addition to math being the basis of science, it can also train students to be able to understand the basics of mathematics. Students become careful, thorough, systematic thinkers, and can develop creativity through their right brain. In optimizing students' mathematics abilities, it is also necessary to learn ideal mathematics.

Ideal learning is learning that is not only focused on results but how the process of learning mathematics can provide good understanding and quality so that it can change behavior and can apply it in everyday life. Factors that influence learning activities and the learning characteristics should be considered in learning and learning activities. If the factors and characteristics of learning are not considered, it will cause learning problems. As experienced by MI Islamiyah class students 4 in learning math material on the conversion of units of length.

Based on observations made on October 25, 2022, to November 02, 2022, (in the learning process) the problems that arise are: (1) students are less enthusiastic in the process of teaching and learning activities

caused by students' lack of understanding of the material. (2) the teaching method used by the teacher is less interesting. (3) the use of media learning is not maximized. And (4) the condition of the class is not conducive, as well as the results of the value that is not maximized on the material. Of the several problems that arise in MI Islamiyah grade 4 in learning mathematics material on the conversion of units of length, focus on the problem of student learning outcomes that are less than optimal, caused by material that cannot be understood by students. Because understanding the material is very important in the learning process and learning in the classroom.

In an effort to improve the value of student learning outcomes, researchers collaborated with math teachers at MI Islamiyah with the demonstration method through Rule conversion media for length unit conversion material. What teachers can do by using rule conversion media and demonstration methods is to provide a more interesting and easier teaching method to students. Through the demonstration method with rule conversion media, it is hoped that children will be more enthusiastic in learning, especially in length conversion material, so that the results of the scores obtained are better.

The rule conversion media is interpreted by researchers as a conversion ruler, which is a ruler that can be used to facilitate students in converting length units. This rule conversion media has advantages, including (1) this media is easily made by students from pieces of paper (2) this media can be carried anywhere because of its small size, (3) and this media can make it easier for students to convert units of length without using multiplication and division as a resizing process, (4) easy to apply.

Based on the advantages of the media above, rule conversion media has a close relationship with the problems that exist in class IV MI Islamiyah in learning the conversion of units of length. That is, this media is expected to be able to attract students' interest in learning the material, providing morning solutions for students who have difficulty learning math, especially for students who are weak in multiplication and division. This research refers to the researcher Muhammad Faizan Ashikin in 2018 with the title "Media Development of Measurement Unit Conversion Ruler in Mathematics Learning in the High School Class of SDN Sindurejan Yogyakarta". Where the study produced a media product for converting units of measurement that is suitable for use in learning mathematics in the high grades of SD Negeri Sindurejan Yogyakarta. Whereas in this study the media that has been developed by previous researchers will be applied to children. class IV MI Islamiyah using the demonstration method.

Method

1. Research Subject

The subjects in this study were fourth-grade students of MI Islamiyah. With a total of 15 students consisting of 6 male students and 9 female students.

2. Place and Time of Research

The research was conducted at MI Islamiyah Pucangtelu, Kalitengah District, Lamongan Regency. The research time was carried out with a time span of the cycle I on October 21 to October 28, 2022, while cycle II was carried out on November 01 to 10 November 2022.

3. Design Research

Based on the analysis, the nature of the problem, and its objectives, the research that will be carried out is by using CAR (Class Action Research) or often known as Classroom Action Research (CAR). The classroom action research that will be carried out is a systematic scientific method for developing learning research by carrying out various practical activities in structured and programmed learning activities. An overview of the activities to be carried out in each cycle begins with the planning, action, and observation, and ends with the reflection stage. Data collection techniques in classroom action research that can be used includes observation, interviews, portfolios, tests and documents (Rakhmawati et al., 2016). This research was planned and programmed using more than one class action research cycle until this research obtained reflection results that match the desired target, especially in the application of instructional media.

4. Data Analysis Techniques

The scoring technique comes from student test results. Students are categorized as complete if they have reached the Minimum Completeness Criteria (KKM) of 70, then the test result data is formulated as follows (Suharsimi Arikunto, 2011: 250):

$$\text{Test Score} = \text{Score obtained}$$

Then the percentage of classical completeness is calculated using the following formula (Suharsimi Arikunto, 2011: 250):

$$\text{Ketuntasan Klasikal} = \frac{\text{Jumlah Siswa yang tuntas belajar}}{\text{Jumlah Seluruh Siswa}} \times 100\%$$

Results and Discussion

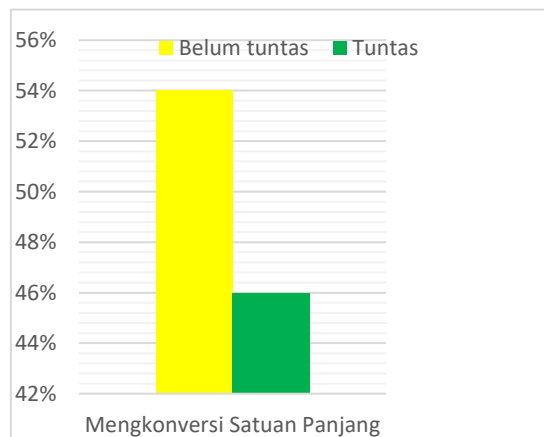
Cycle I

Cycle I obtained the results of observations of teacher activeness, student activeness, and student scores. The results of cycle I can be depicted in graph 1 below: While the results of the cycle I student tests can be seen in table 1 below:

Table 1. Student Score Presentation Table Cycle I

Criteria	Number of students	Number of students
Completed	7	46%
Not Completed	8	54%
Total	15	100%

From the table above, the following graph 2 can be made:



Graph 1. Student Score Presentation Graph Cycle I

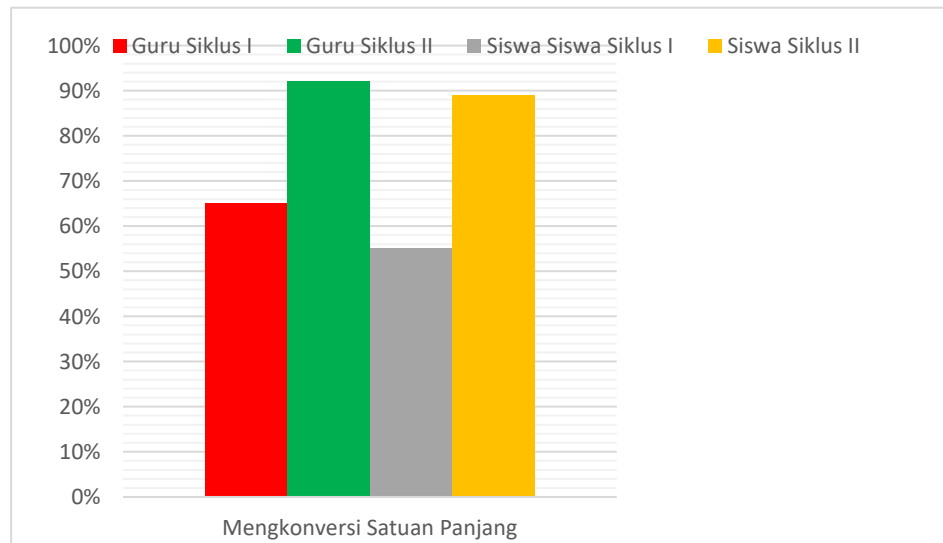
Based on the results of the research described, it can be seen that the achievement of teacher activities reached 65%, then for student activities reached 55%. Meanwhile, the test results in cycle I obtained an average score of 71 with a completeness percentage of 46%. This condition has not met the KKM standard which is an indicator of success in this study. From the data obtained in cycle I, starting from teacher and student observations, and test scores that have not yet reached the KKM standard, this is because many children are still chatting with their friends, and students still often go in and out of class to go to the toilet. Lack of motivation and appreciation from the teacher for students to be more active in asking questions so that students who ask questions are only dominated by a few students, especially students who are good at speaking, and some students are still confused by the teacher's explanation but students are embarrassed to ask. Deficiencies in cycle I will be corrected in the implementation of cycle II.

Cycle II

Cycle II aims to improve the shortcomings that exist in cycle I. The data generated is the same as the data in cycle I, namely observation data on teacher activities, student activities, and student score presentations. In learning in cycle II, the results of observation of activity II reached 92% while the results of

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observation of student activeness reached 89%. The following is a graph of observation of teacher and student activeness: From the results of the observation of the activeness of each cycle, a comparison of teacher and student activities in cycles I and II is obtained, which is shown in graph 2 as follows:



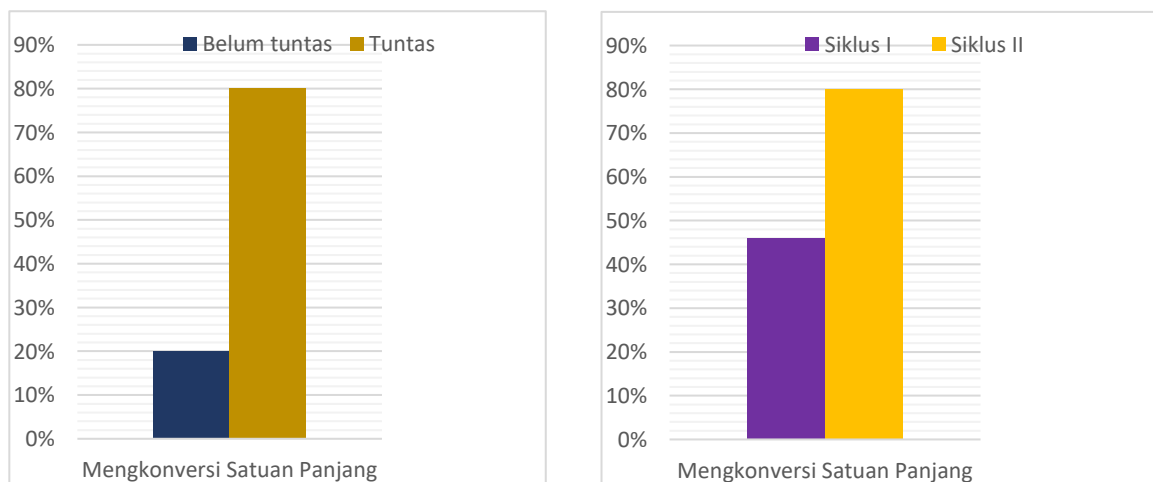
Graph 2. Comparison of Teacher and Student Activities in Cycles I and II

In addition to the results of observations of teacher and student activeness, the percentage of student test scores is also obtained in table 2 below:

Table 2. Presentation of Cycle II Formative Test

Criteria	Number of students	Number of students
Completed	12	80%
Not Completed	3	20%
Total	15	100%

The data above can be illustrated through the following graph 3:



Graph 3. Percentage of Formative Test Results Cycle II

Improvement of cycle II is carried out by perfecting the steps of activities, especially the teacher to optimize learning activities that have not been achieved, including mastery of the material and the use of rule conversion media on the material of converting units of length. The implementation of cycle II learning improvements, emphasizes student activeness in the learning process, including being active in asking questions and also being active in working on problems using the rule conversion media given by the teacher.

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This aims to determine the extent of the increase in student learning outcomes in converting units of length done with learning in cycle I.

In this cycle II learning improvement, researchers resolved several problems that arose in cycle I so that the completeness of learning outcomes could be achieved. Namely, students experienced an increase in activeness in asking questions and working on problems and were more enthusiastic in participating in learning. Because they felt interested in the rule conversion media demonstrated by the teacher in a roundabout way, thus making students feel more cared for in the learning process. When one of the students did the problem on the whiteboard, the other students also paid attention and together with the teacher corrected the student's answer.

From a series of learning processes, the teacher has been able to motivate students in learning to convert units of length using rule conversion media so that student learning outcomes increase. Based on the results of the analysis of learning improvement in cycles I and II, rule conversion media influences children's learning development. This is evidenced by an increase in percentage both from the observation of teacher and student activeness, as well as an increase in the scores obtained by students. The increase in student scores in converting units of length is due to several reasons: a. The media used succeeded in attracting students' attention because the media was made by students themselves and then demonstrated by researchers in turn. So that students feel cared for and have an impact on students' enthusiasm for learning. b. The rule conversion media is designed for students who have weaknesses in multiplication and division operations. With this media, all students, especially students who have difficulty learning math, can easily work on long conversion problems without the calculation process in it. So, it greatly affects the results of student scores.

Conclusion

The conclusion of this study is that the use of rule conversion media with demonstration methods can improve student learning outcomes on the material of length unit conversion. This can be proven by an increase in the observation of teacher activeness from cycle I to cycle II which is 65% and 92% (an increase of 27%), and the observation of student activeness from cycle I to cycle II is 46% and 89% (an increase of 43%), while the average student score from cycle I to cycle II is 71 (46%) to 81 (80%) respectively.

The findings of this study, a teacher will be better creative in finding and creating learning media to improve the learning system because the media can increase children's ability to associate concepts and knowledge. Learning can use various kinds of learning media that are in accordance with the fields that will be developed in students. Improving the ability to convert units of length using the demonstration method with rule conversion media can make students more eager to learn.

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