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IMPROVING MATHEMATICS LEARNING OUTCOMES IN 3rd CLASS PRIMARY STUDENTS USING THE MASTERY LEARNING MODEL THROUGH SMART CLASS MEDIA

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Abstract

Mathematics for some students is still a difficult and boring lesson. The results of observations at SDN Kemuning, Sambit District, Ponorogo Regency, class 3 showed that there was a problem, that students' learning outcomes were still far from the KKM (75), in terms of length, weight and time. The aim of this research is to improve student learning outcomes in Mathematics lessons with material in units of length, weight and time, using the Mastery Learning model through the Smart Ladder media. This research is Classroom Action Research (PTK) with 4 stages, namely planning – implementation – observation – reflection. The research subjects were 3rd grade students at SDN Kemuning Sambit with a total of 11 students. This research was conducted with 2 cycles of Completeness of Student Learning Achievement, in the pre-cycle the average score was 62 with a percentage of 18%, in the first cycle the average score was 70 with a percentage of 54%, while in the second cycle the average score was 86 with a percentage of 91 %. The results of the observation assessment on teacher activities in cycle I were 77% in the active category, while cycle II was 96% in the very active category. Meanwhile, the results of student activity assessments in cycle I were 73% with classical completeness of 73%, which was in the quite active category, in cycle II the average score was 79% with classical completeness of 86%, which was in the active category. This shows that the Mastery Learning learning model through the Smart Ladder media is very effective in learning.

Keywords: Mastery Learning learning model, Smart Ladder Media, Learning Outcomes.

INTRODUCTION

Education is the basis for a citizen to develop his or her potential, in terms of religious spirituality, character, morality, self-control, intelligence and skills (Rini, 2015), as well as to instill human values, which refer to character and personality (Mahmud, 2017). Quality elementary school education will determine secondary school level education. Students' success in understanding the material is largely determined by the delivery of the material by the teacher (Lestari, 2021). Therefore, teachers must be able to realize the ideals of quality education and schools.

Mathematics is a science that deals with calculations such as magnitude, length of objects, and geometry. A complete understanding of Mathematics can help in solving various life problems, for example when children are shopping at the market, if the child masters the value of money (large and small) then the child will not have difficulty, therefore everyone must understand and master mathematics (Erviana, 2018). The aim of mathematics education in elementary schools is for students to be skilled at using mathematical concepts in their daily lives. According to Ananda (2021), one of the obstacles to the mathematics learning process is the

perception that mathematics is considered a boring and difficult subject, possibly because teachers use inappropriate methods, without using media, making it difficult for students to understand the material presented.

Learning media can provide students with diverse learning experiences. The existence of learning media makes it easier for students to understand concepts because children are stimulated to think not only abstractly but also concretely, for example changing units of length from higher units to lower units or vice versa. Apart from that, many students do not remember the order of the ladder of units of length (Wibowo, 2020).

Teachers play a role in learning outcomes, both in mathematics and other subjects, teachers must also be able to respond to the different characteristics of the students they encounter (differentiated learning). The learning approach also needs to be changed, from teacher-centered to student-centered. In learning, the teacher acts as a mediator, bringing about change from students' lack of understanding to understanding. Good mathematics learning is learning that is directed by the teacher but can actively change students' understanding of the material (Handayani, 2022).

However, this hope is far from the reality on the ground. There is a gap between expectations and reality, resulting in learning objectives in mathematics subjects not being maximized. Student learning achievements as evidenced by the results of formative tests given by teachers do not match expectations. This problem occurred in grade 3 students at SDN Kemuning, totaling 11 students. It turns out that there are still many students who don't understand the length unit material. In fact, of the 11 students, only 2 students had scores above the average, 2 people were close to the average score and the others were below the average score, and they didn't even understand the material for this long unit. It can be seen from the test scores that many students still get scores below the KKM (Minimum Completeness Criteria), that is, with understanding, students only get an average score of 62, and are still far from the KKM standard, namely 75.

This happens because the mathematics learning implemented by teachers is still monotonous (teacher center), the methods used are not diverse, and do not use learning media to support the mathematics learning process. The impact: Most students still have difficulty understanding the material provided. The existence of this problem is what makes researchers want to solve research problems, namely by applying learning models and learning media, one of which is the mastery learning model through smart ladder media.

The mastery learning model is an approach in education that aims to motivate students to master certain abilities. Implementing thorough learning strategies in the learning process is one of the mainstays in implementing a competency-based curriculum. This means that complete learning must be fully understood and implemented as well as possible by all school members. If a child is always lagging behind, the teacher must make efforts and through special accommodations help the child catch up with the child's progress in mastering material and skills (Suartini, 2019).

According to Rudati (2019) Classroom Action Research is an improvement effort carried out by a teacher to improve the model of teaching and learning activities in order to produce what is the focus of the improvement, through various reflections in mathematics learning. In this way, all children, both smart and less, can master the required competencies well. Apart from using the Mastery Learning learning model in mathematics learning so that children understand the material better, it will be better supported with learning media that is appropriate to the material being taught, the media that will be used for mathematics learning is smart ladder media.

Smart ladder media is a media in the form of a three-dimensional ladder. Three-dimensional media is a media that is suitable for increasing student activity because the presentation is concrete and avoids verbalism, thus

allowing students to participate actively in the learning process. Some materials in mathematics use the form of a smart ladder as a medium for describing material through convection in length units, mass units, area units and volume units (Erviana, 2018). According to Ningsih et al (2024), Mathematics learning using smart ladder media for class I students at the Darul Hikmah Islamic Elementary School, Makassar, showed an increase, before using the smart ladder the students' Mathematics learning outcomes were in the low category (average score 41.53), after using smart ladder media, learning outcomes increased significantly (mean value 83.07).

RESEARCH METHODS

The type of research carried out is Classroom Action Research or what is known as Classroom Action Research. Arikunto, Suhardjono and Supardi (2016: 1-2) state that classroom action research is research that describes the cause and effect of treatment, as well as describes the activities that occur when treatment is given, and describes the entire learning process from the beginning of the treatment to the impact of the treatment. which are given. Thus, it can be said that classroom action research is research that describes both the process and results to improve the quality of learning. The research procedure carried out was classroom action research which consisted of several cycles. Implementation of the action will be stopped if the action has reached the success indicator in each cycle. Each cycle consists of four stages, namely (1) Planning, (2) Acting, (3) Observing, and (4) Reflecting. Data collection techniques in this research are: observation, interviews, documentation and tests.

The subjects of this research were 3rd grade students at SDN Kemuning, Sambit District, Ponorogo Regency, academic year 2023/2024. The number of students is 11 students, 4 male students and 7 female students. With Mathematics learning subjects on the themes of units of length, weight and time. This research was carried out from August 2023 to February 2024. In cycle I, there was a pre-test, implementation, then a post-test, then reflection. The results of reflection are the basis for implementing cycle II.

In this Mathematics lesson, researchers used the Mastery Learning learning model through smart ladder media. The instruments in this research are an observation sheet on student learning activities in the form of a checklist that will be filled in by the teacher during mathematics learning and a test sheet on student learning outcomes obtained from the final learning test obtained by students in each cycle. So the aim of this research is to improve Mathematics learning outcomes with the Mastery Learning learning model.

RESULTS AND DISCUSSION

Based on the results of research on improving mathematics learning regarding units of length, units of weight and units of time using the Mastery Learning model through smart ladder media to improve the learning outcomes of grade 3 students at SDN Kemuning, Sambit District, showing significant improvement from pre-cycle to cycle II. In the pre-cycle, student achievement was 18% and in the second cycle it reached 91%.

Based on the analysis of the data obtained, student learning achievement in the pre-cycle was still very low, only 2 students completed it out of 11 students. Of the 11 students who mastered the learning material and achieved completeness (score 70 and above), there were 2 students (18%). Meanwhile, there were 7 students (82%) who had not achieved completeness (score less than 70). The average score is only 62, because the results achieved by students are relatively low, teachers must make learning improvements, so that students can get better scores.

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Based on data analysis in cycle I, data was obtained that student learning achievement in cycle I of class 3 had increased from 2 students, which originally completed 2 students, to 6 students. Of the 11 students who mastered the learning material and achieved completeness (score 70 and above), there were 6 students (54%). Meanwhile, there were 5 students (46%) who had not achieved completeness (score less than 70). The average score is only 70. Because the results achieved by students are relatively low, teachers must make learning improvements, so that students can get better scores. Because the first lesson was not successful.

The average value of student learning achievement in each cycle increases significantly. The students' average pre-cycle achievement results were 62 with a percentage of 18%, in cycle I it increased to 70 with a percentage of 77% and in cycle II the average score was 86 with a percentage of 91%. In the initial learning, only 2 students completed their studies, after improvements were made to the first cycle of learning, student completion increased to 6 students. And in cycle II, there were 11 students who had completed their studies. The average value of the achievement results for each cycle also increased, as well as the completeness of learning achievement increased well.

Based on the discussion above, data on the completeness of student learning outcomes is obtained in the following table:

Table 1. Completeness of Pre-Cycle Student Learning Results, Cycles I and II

No	Siklus	Nilai Rata-rata
1	Pra Siklus	62
2	Siklus I	70
3	Siklus II	86

Below is a comparison graph of student learning achievement with the average score in mathematics learning starting from Pre-cycle, Cycle I and Cycle II. From this graph, you can see the comparison of students' learning achievement scores from the pre-cycle with an average score of 62, cycle I with an average score of 70, and cycle II with an average score of 86. This means that with the smart ladder media, students understand mathematics learning better. , the existence of two cycles shows that students' competence in learning mathematics has increased, this can be seen from the average score for class 3 at Kemuning Elementary School, Sambit District.

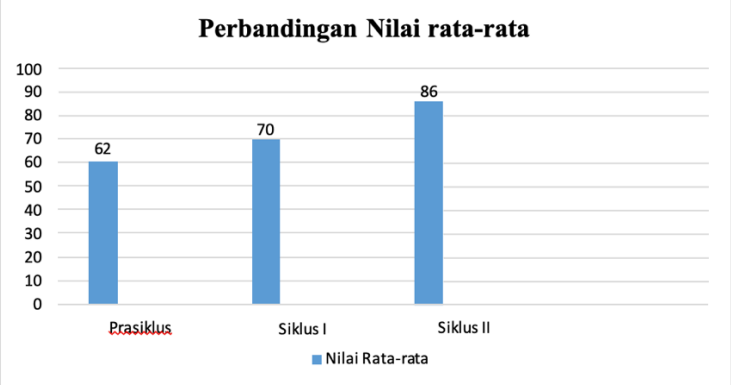

Figure 1. Comparison of students learning achievement

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Furthermore, from the results of the average value of learning achievement completion above, a percentage comparison table is presented as follows:

Table 2. Completeness of Pre-Cycle, Cycle I and II Student Learning Achievements

No	Siklus	Persentase
1	Pra Siklus	18
2	Siklus I	54
3	Siklus II	91

The following is a comparison graph of percentages in mathematics learning starting from Pre-Cycle, Cycle I and Cycle II, which are as follows:

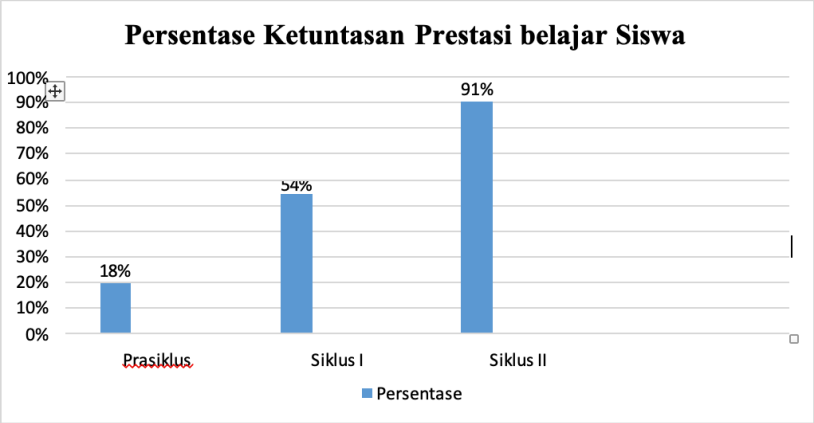

Figure 2. Comparison of the Percentage of Complete Student Learning Achievement

The percentage of student learning completeness in each cycle has increased. In pre-cycle learning only 18% were completed, while 82% were not yet completed, then after improvements were made to learning in cycle I it became 54% of students who had completed and 46% of students who had not yet completed. Furthermore, in cycle II 91% were completed, and those who had not 9% complete. Thus, student learning outcomes in length, weight and time unit material using the Mastery learning learning model through smart ladder media were successful.

The results of research on teacher and student activities based on data analysis show that the teacher's ability to manage student activity abilities in mathematics learning using the Mastery Learning learning method through smart ladder media in each cycle has increased. This has a positive impact on the process of remembering the material that has been studied so far, which can be shown by the increase in the average student score in each cycle which continues to increase.

The most dominant activities of teachers and students in learning Mathematics using smart ladder media are discussions between students and students or students and teachers and listening to teacher explanations. So it can be said that student activities can be categorized as active. Meanwhile, teacher activities during learning have carried out teacher activities which appear between the activities of guiding and observing students in carrying out assignments, explaining difficult material, providing feedback/evaluation.

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The following are the results of observations of teacher activity assessments in cycle I and cycle II, with the following table:

Table 3. Cycle I and II Teacher Activities

No	Siklus	Persentase
1	Siklus I	77
2	Siklus II	96

From the table above it can be concluded that there was an increase in the percentage of teacher activity between cycle I and cycle II. In cycle I the percentage was 77% in the active category, then in cycle II it increased to 96% in the very active category.
Furthermore, the results of teacher activities in cycle I and cycle II can be presented in the graph below:

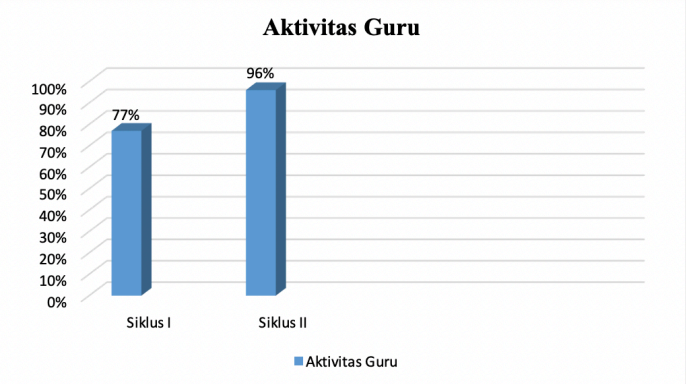

Figure 3. Teacher Activities

Furthermore, the results of observations of student activities in cycle I and cycle II can be presented in the following table:

Table 4. Cycle I and II Teacher Activities

No	Siklus	Persentase
1	Siklus I	73
2	Siklus II	86

From the table above it can be concluded that there was a percentage increase in student activity between cycle I and cycle II. In cycle I the percentage was 73% in the quite active category, then in cycle II it rose to 86% in the active category.

The results of student activities in cycles I and II can be presented in the graph below:

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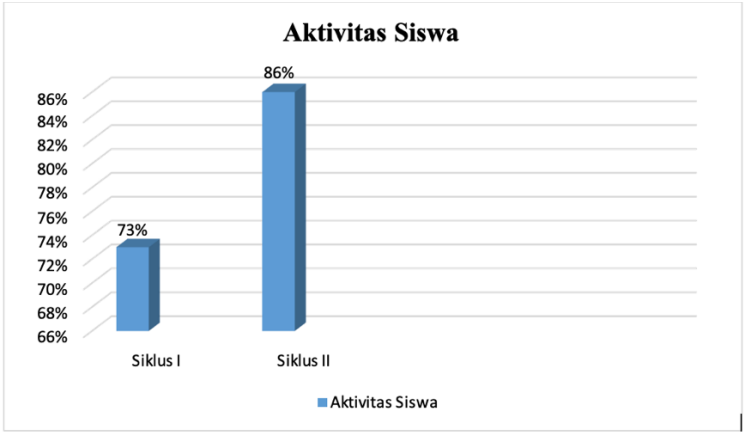

Figure 4. Student Activities

From the graphs above, it can be concluded that there is an increase in student learning completeness and teacher activity as well as student activity in learning Mathematics using the Mastery Learning method through the smart ladder media. The results of teacher observations in cycle I and cycle II showed a significant increase. This means that teachers who are active in cycle II have an impact on student activity also in cycle II, meaning that the teacher's role is very important as a driver for children to achieve competence in mathematics learning (students become more active and more enthusiastic in learning, students have more self-confidence and are more can come up with brilliant ideas). These results are in accordance with previous research which states that the Smart Ladder media has a positive influence on student learning outcomes (Maulidiyah, 2019), so that it has an impact on improving student learning outcomes, namely changes in the learning process that is more active, effective and enjoyable (Enni Novtalien, 2021). Learning with smart stairs received a very good response from participants and provided a new learning experience for students in class (Amalia Yulia, 2020). Apart from that, learning with smart stairs received a very good response from participants and provided a new learning experience for students in class (Lailatul Wahyu, 2021).

CONCLUSION

Based on the research results, the results of improvements in mathematics learning using the mastery learning learning model through smart ladder media were obtained for grade 3 students at SDN Kemuning, namely: the completeness of student learning outcomes in mathematics learning in each cycle has increased, in the pre-cycle (average value of 62 with a percentage of completeness classical 18%); cycle I (average score 70 with a percentage of 54%); and cycle II (average value is 86 with a percentage of 91%).

The results of observations assessing teacher activity in the first cycle obtained a total of 58 scores with a percentage of 77% in the active category, increasing in the second cycle, namely a score of 72 with a percentage of 96% in the very active category. The increase in teacher activity in teaching has an impact on increasing student activity in each cycle. Student activity in cycle I received a classical average score of 73%, in the quite active category. Meanwhile, in cycle II, students' activities received a classical average score of 86%, in the very active category.

Thus, it can be said that the use of the mastery learning model through smart ladder media can improve mathematics learning achievement in grade 3 students at SDN Kemuning, Sambit District, Ponorogo Regency, academic year 2023/2024.

SUGGESTION

Due to the success of this research, the Mastery Learning model through smart ladder media can be implemented in elementary schools to improve student mathematics learning outcomes.

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