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Improvement of Learning Outcomes in Multiplication through Role Playing Method

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Abstract

This research aims to assess the effectiveness of the role-playing learning method in enhancing mathematics outcomes related to multiplication by two and three in Class II at SD Negeri Pasirangin 05. Utilizing a classroom action research approach based on the Kemmis and Taggart model, the study comprised three cycles: planning, implementing actions, observing, and reflecting, over six months from November 2023 to May 2024, involving 30 students. Data collection included tests, observations, interviews, and documentation. Results indicated a significant improvement in mathematics performance across cycles, with test scores rising from 33.3% in the pre-action phase to 83.3% in Cycle III. Additionally, feedback from interviews and observations revealed consistent enhancements in student engagement and learning. The study concludes that the role-playing method effectively improves Class II students' learning outcomes in multiplication during the even semester of the 2023/2024 academic year at SD Negeri Pasirangin 05.

Keywords : Learning Outcomes, Mathematics, Role Playing

1 INTRODUCTION

Learning is a process through which an individual moves from a state of not knowing to understanding. It involves internal changes within the person, interacting with their surroundings, to bring about alterations in behavior. (Amsari, 2018, Purwanto, 2019, Mardicko, 2022). These changes occur as a result of effort, rather than simply due to maturation. They last for a significant period and stem from personal experience (Wulandari, et al, 2023). Interest in studying the learning process is driven by the desire to provide teaching services that yield optimal results (Mawaridz & Rosita, 2019)

Learning is undertaken to bring about behavioral changes in the individual who is learning. These behavioral changes are the outcomes of learning. Learning outcomes refer to the changes that result in shifts in attitudes and behaviors. One of the subjects in elementary school is mathematics.

Based on observations of the research subjects—second-grade students at SDN Pasirangin 05—it was found that they consider mathematics, especially multiplication, to be difficult to understand. The learning outcomes for these students in mathematics remain low, with only 25.71% (about 8 students) scoring above the Minimum Competency Standard of 65, while 74.29% (about 22 students) did not achieve this standard.

Mathematics is one of the branches of study that holds an important role in the world of education, as seen from the substantial amount of time dedicated to mathematics lessons in schools compared to other subjects. Mathematics is the study of patterns and relationships (Amin, M., et al 2024). School mathematics, pedagogically, needs to be distinguished from axiomatic mathematics, where axiomatic mathematics is formal and typically studied by mathematicians in higher education institutions. Therefore, mathematics is more suitable for students from elementary to middle school

Mathematics is a logical science that deals with numbers, quantities, and structures, from the simplest to the most complex levels. Mathematical concepts are always related to addition, subtraction, multiplication, and division, whether at the elementary school level or at the high school level. Mathematics is a science that can be applied to everyday life, such as in solving economic problems, including when buying and selling goods or shopping. By studying mathematics, one can enhance and develop logical, creative, and critical thinking skills.

It can be concluded that mathematics education is directed at all levels of education, from elementary to high school, and even at the university level, mathematics is still taught. This is because mathematics education is one of the foundations of science and technology capabilities. The higher the level of material understanding and academic achievement in students, the higher the success rate of the learning process.

Multiplication is one of the mathematical concepts that is often applied in daily life. Therefore, multiplication plays an important role in social life. In other words, multiplication is a repeated addition according to the number being multiplied.

Multiplication is a short and easy way to write and perform an addition (Poernomo, E., et al 2021). Multiplication is an operation of repeated addition. Therefore, to understand the concept of multiplication, one must first master the concept of addition. Another definition states that multiplication is an operation used to find the product when two factors are known, where factor x factor = product Multiplication is another form of repeated addition. For children who are just learning multiplication, it should be emphasized that only the result of the multiplication is the same. Thus, it can be concluded that multiplication is a mathematical calculation carried out through repeated addition, where the repetition corresponds to the number of multiplication factors.

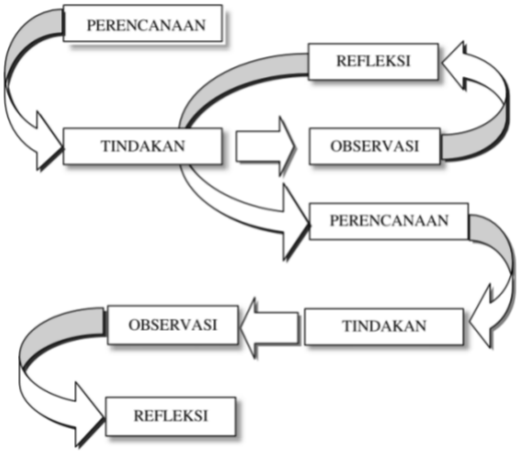
The Role Playing method is a type of movement-based game that includes objectives, rules, and the element of fun (Suandi & Santosa, 2023, Ainurrohmah & Rahmadadhani, 2023). The Role Playing method is a way to understand lesson materials through the development of students' imagination and empathy (Akollo, Wattilete & Lesbatta, 2020, sukini, et al, 2022). This teaching method emphasizes role-playing to make learning more enjoyable. Role Playing is a type of movement-based game that has objectives, rules, and also involves the element of fun (Jumanta Hamdayana, 2019). The Role Playing method or role-playing, in principle, is a method that brings real-life roles into a classroom or meeting setting. Role Playing is a branch of simulation methods that involves participants acting as someone else with the aim of learning how others act and feel (Agung & Asmira, 2018)

The purpose of applying the Role Playing method in mathematics lessons is to make it easier for students to learn mathematics, especially multiplication. By implementing this method, students become more active and enthusiastic, making math lessons more enjoyable and memorable, particularly on the topic of multiplying by two and three. Based on the explanation above, the author is interested in conducting this research under the title: "Efforts to Improve Mathematics Learning Outcomes on Multiplication of Two and Three for Second-Grade Students through the Role Playing Method at SD Negeri Pasirangin 05 in the 2023/2024 Academic Year."

2 RESEARCH METHODS

This research uses a combination of qualitative and quantitative approaches, focusing on the Classroom Action Research (CAR) method. Classroom Action Research is an observation of activities that are intentionally initiated and occur within a classroom. CAR is a type of research that investigates problems or deficiencies in the classroom learning process, conducting several cycles, each consisting of four components: planning, action, observation, and reflection. In CAR, solutions are offered through various models, methods, strategies, or media to improve learning outcomes, thus addressing issues that arise during the learning process in the classroom.

Kemmis & McTaggart state that action research is a form of self-reflective research conducted by participants in social situations (including education) to improve their own practices. The Kemmis & McTaggart model consists of four stages: planning, action, observation, and reflection. The following is an illustration of the stages in the Kemmis & McTaggart model:



Gambar 1. Model Tipe *Kemmis & McTaggart*

3 RESULT AND DISCUSSION

From the pre-action data obtained from the second-grade students in the mathematics subject on multiplication by two and three at SDN Pasirangin 05, before the improvements were made, it was recorded that 10 students had achieved scores above the Minimum Mastery Criteria (KKTP), representing about 33.3% of the students. Meanwhile, 20 students, or about 66.6%, had not yet reached the KKTP. This was due to the suboptimal implementation of the learning process. At that time, the teacher had not yet applied the Role Playing method in the learning process.

In the first action cycle, from the first to the second meeting, the data showed that 14 students scored above the KKTP, which is around 46.6%, while 16 students, or about 53.3%, had not yet reached the KKTP. According to the teacher observation percentage, 84% was recorded after implementing the Role Playing method in the learning process. It was observed that there was an improvement in student mastery, increasing by approximately 13.3% from the pre-action to the first cycle. In this cycle, students appeared enthusiastic about the learning process using the Role Playing method, as it was a new experience for them in teaching and learning.

However, during the learning process, some students still seemed confused (not fully understanding) the flow of the Role Playing method. Despite this, they followed the teacher's instructions with enthusiasm, behaving well and orderly. A lack of media needed for the learning process was also noted, requiring new media such as classroom desks to serve as gathering points for student groups, as instructed by the teacher. These components that were not yet well implemented would be improved in the next cycle.

In the second cycle, students appeared very active and showed improvement compared to the previous cycle, as they now seemed to understand the flow of the Role Playing method. As a result, students listened to the teacher's instructions with great agility and actively formed groups according to the instructions. The learning outcome data from the second cycle showed an improvement in mastery compared to the previous cycle, with 21 students scoring above the KKTP, representing about 69.9% of students mastering the material. This marked an improvement of 16.6% from the pre-action to the second cycle.

In the following cycle, with further guidance and instruction from the teacher, the students' test results improved, achieving optimal scores. According to the learning outcome data from the third cycle, 25 students, or about 83.3%, reached mastery. This marked a 30% improvement from the pre-action data.

The following is a table showing the percentage comparison of mathematics learning outcomes for the topic of multiplication by two and three at SDN Pasirangin 05, from pre-action to the third cycle.

Table 1. Percentage of Student Learning Results from Pre-Action to Cycle III

No.	Keterangan	Pra Tindakan	Siklus I	Siklus II	Siklus III
1	Tuntas	33,3%	46,9%	69,9%	83,3%
2	Belum Tuntas	66,6%	53,3%	30%	16,6%

Table 1 shows that there is an increase in the completeness of student learning outcomes and the average of students from pre-action to cycle III. The average recorded in pre-action is 59.1, cycle I has an average of 65.8, cycle II 72.6 and cycle III 80.

Graph of the increase in the completeness of learning outcomes in mathematics for multiplication of two and three from Pre-action to Cycle I.

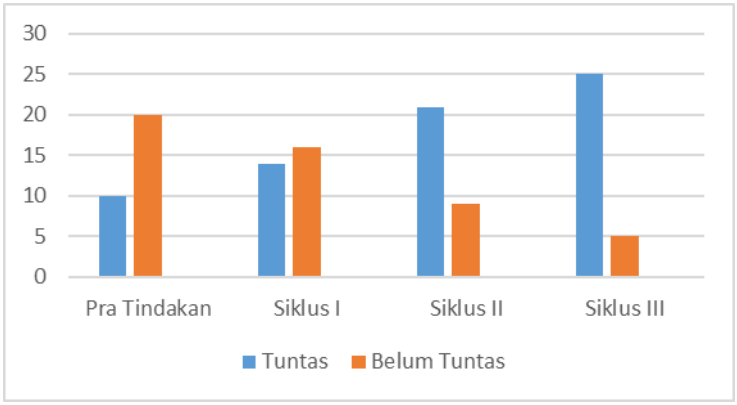


Figure 2. Graph of learning outcomes from Pre-Action to Cycle III

Figure 2 above shows that student learning outcomes from each cycle increased. From the pre-action, it was recorded that 10 students completed and 20 students had not completed. In cycle I, it was recorded that 14 students completed and 16 students had not completed. In cycle II, 20 students completed and 10 students had not completed. And in cycle III, it was recorded that 25 students completed and 5 students had not completed.

The results of the study stated that the Role Playing method succeeded in improving mathematics learning outcomes for the material of multiplication of two and three at SDN Pasirangin 05. With a success indicator of 83.3%.

4 CONCLUSION

This study provides a conclusion that the application of the role playing method in learning Mathematics on the subject of multiplication of two and three can improve the learning outcomes of grade II students in the even semester of the 2023/2024 academic year at SD Negeri Pasirangin 05 Cileungsi. The success of the research can be shown from the results of the implementation of learning in class II in cycle 1, cycle 2 and cycle 3, namely cycle 1 with an average score of 65.8 which was achieved by 46.9% KKTP and not achieved by 53.3% KKTP, cycle 2 with an average score of 72.6 which was achieved by 69.9% KKTP

and not achieved by 30% and cycle 3 with an average of 80 which was achieved by 83.3% KKTP and not achieved by 16.6%. There was an increase from pre-action to cycle III. By using the role playing method, students can be directly involved and students can find out the benefits and examples of daily activities involving multiplication.

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