Improving Mathematics Learning Outcomes using Ice Cream Stick Concrete Media in Grade 4 Elementary School Students

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Abstract
The background of this research is the low mathematics learning outcomes of students in grade 4 at 3 Kelutan State Elementary School. This is because learning uses the lecture method so students feel bored and less enthusiastic about participating in learning. This study aims to improve the results of learning mathematics material multiplication arithmetic operations after learning is applied using concrete ice cream stick media. This study used the Classroom Action Research method with 2 cycles. The stages of the research carried out were planning, implementing, observing, and reflecting. The research subjects were 4th-grade students at 3 Kelutan State Elementary School Ngronggot Nganjuk with a total of 15 students. The data analysis technique used is descriptive quantitative by collecting data on learning outcomes carried out in each cycle. The indicator of success in this study is if 75% of students master the material with a minimum completeness criterion of 70. The results of the study show that concrete media can improve mathematics learning outcomes on multiplication arithmetic operations for students in grades 4 at 3 Kelutan State Elementary School. In cycle I, 40% of students have achieved Minimum Completeness Criteria with an average score of 57.33. Then in cycle II, 80% of students achieved minimum completeness criteria with an average value of 79.33. So it can be concluded that the concrete media of Ice Cream Sticks can improve the mathematics learning outcomes of students in grade 4 at 3 Kelutan State Elementary School.

INTRODUCTION
Mathematics is an important subject to be taught to students at the level of elementary school to university education units. Mathematics in learning in Elementary Schools needs serious attention from various parties because it is the basis for the basic concepts that form the basis for learning at the next level. Multiplication material is material that must be mastered by students. Multiplication is repeated addition (Suherdi et al., 2020).

The results of observations made at 3 Kelutan State Elementary School show that the ability and interest of students to learn mathematics are still low. Mathematics is not in demand, because it is considered difficult for students. This is evident from the number of students who have not reached the minimum completeness criteria score on the results of the multiplication arithmetic operation assessment. Where the minimum completeness criteria set for mathematics is 70. Only 30% of the 15 grade 4 students at...
3 Ngronggot State Elementary School Nganjuk got scores above the minimum completeness criteria. This means that as many as 12 students scored below 70 and 3 students scored above 70. From the results of the assessment, it can be seen that students still have difficulty in calculating multiplication operations. Thus it can be said that the mathematics learning outcomes of grade 4 students regarding the material for calculating multiplication operations are still low. Based on this, mathematics learning activities need to be designed as well as possible to coordinate students to be ready to learn and receive lessons by asking questions and exploring the knowledge to be learned.

Several factors cause low student learning outcomes, namely learning that is still teacher-centered. Students are only asked to listen, take notes, and do the exercises given by the teacher so that the understanding achieved by students is still abstract. In addition, teachers still use the lecture method which is considered the most practical, easy, and requires no preparation. Teaching using the lecture method will make students feel bored and prefer to play or talk with their friends rather than listen to their teacher. This is supported by the results of previous research stating that the use of the lecture method in learning mathematics makes students bored and less enthusiastic in participating in learning (Safuwan et al., 2022; Sujadi et al., 2022).

Another factor that causes low student learning outcomes is the absence of adequate media and learning that looks monotonous (Suciati et al., 2022). Mathematics learning only relies on the theory in books and the teacher's lack of ability to relate mathematical concepts to real-life experienced students. Learning that relies on theory in books without the support of learning media makes it difficult for students to understand abstract concepts so when students face difficult abstract concepts, students tend to be lazy to learn them. Whereas in learning mathematics, the key to being able to understand and master the material is being active in learning. This agrees with research that states that one of the causes of low student learning outcomes is that teachers do not use visual aids or media in learning mathematics, so students tend to feel bored easily (Hayati, 2019; Pauziah, 2019). Learning media is an important thing that must exist in learning mathematics because using media can stimulate the thoughts, feelings, attention, and willingness of students so that it can encourage the learning process, and also help students make connections between the knowledge they have and what is learned (Mashuri, 2019).

Concepts in mathematics are abstract, whereas in general students think from concrete things to abstract things. So one of the bridges that students can think concretely about mathematics is to use concrete objects as media. This is to Piaget's research which says that there are four stages in the cognitive development of each individual that develops chronologically and one of the stages is the concrete operational stage (Arifudin, 2022; Laja & Hijriani, 2022; Pakpahan & Saragih, 2022; Sugianto et al., 2022).

The concrete operations stage begins around the age of 7 years and continues until around 11 years of age when the child understands logical operations with the help of concrete objects. In addition, children already have a different point of view...
objectively in observing an object. Based on this, students are still bound by concrete objects that can be captured by the five senses (Laja & Hijriani, 2022; Pakpahan & Saragih, 2022). Therefore, in learning a mathematical concept, experience is needed through concrete (real) objects that are used as a bridge for students to think abstractly. Through the use of concrete object media, low-grade students will get a lot of information by interacting with real and interesting objects, so that children's understanding will be more easily formed (Winarbin, 2020).

Then the use of concrete media objects is used to perform multiplication arithmetic operations to make it easier and more enjoyable (Sakura, 2022). Concrete objects that can be used vary, you can use ice cream sticks, marbles, pencils, beads, fruit, and so on. Such concrete objects will attract more students' attention to take part in mathematics lessons which at first were very difficult and frightening (Murdiana et al., 2022).

The use of learning media in the learning process can generate new desires and interests, generate motivation and stimulate learning activities and even bring a psychological influence on students which also influences their learning outcomes. Concrete learning media are all real tools or objects that are used to help achieve learning objectives. Concrete learning media is the most suitable learning media used in mathematics. By learning through concrete objects, students will be greatly assisted in the process of visualizing abstract concepts in mathematical material. Concrete learning media in this study are ice cream sticks (Afriza & Ismaniar, 2022). The use of ice cream stick media is carried out at the core stage where students are asked to assemble the ice cream sticks to construct knowledge about multiplication arithmetic operations. The purpose of this study is as follows to find out the increase in mathematics learning outcomes of multiplication arithmetic operations using ice cream stick media in class 4 students at Kelutan Elementary School.

**METHOD**

This research is action research because this research was conducted to solve learning problems in the classroom. This study consisted of 2 cycles with the stages of class action research including planning, implementation (Acting), observation, and reflection (Fuad & Hamam, 2012). The data taken in this study were student learning outcomes obtained from giving test questions at the end of each cycle, and teacher activities taken from teacher documentation observation sheets. The indicator of the results of success in this study was that 75% of students achieved a minimum completeness criterion score of 70. The data in this study were obtained from observations, field notes, and tests conducted on class 4 students at 3 Kelutan State Elementary School related to the implementation of mathematics lessons on multiplication arithmetic operations after the use of concrete objects media.
RESULTS

Cycle I improvement activities were carried out on Monday, November 7 2022 with 15 students as an object of class 4 students at 3 Kelutan State Elementary School. Cycle I was carried out by going through several stages, namely planning, implementing, observing, and reflecting. The planning stage is to make Mathematics lesson plan for multiplication arithmetic operations material then create learning media and compile student learning outcomes test sheets for multiplication arithmetic operations material. The implementation stage is the learning process using ice cream stick learning media, in which the teacher explains using the lecture method and practices how to use ice cream sticks for arithmetic multiplication. The observation stage of the completeness of learning outcomes can be seen from the results of the tests carried out after the mathematics learning activities using ice cream stick media. Based on the test results, there were 6 students whose scores reached the minimum completeness criteria and 9 students who had not yet reached the minimum completeness criteria. The average class score is in a low category, with an average score of 57.33 with a complete learning of 40%, meaning that there are still many students who score below the minimum completeness criteria. Based on the explanation above, it can be concluded that cycle I is still not successful, and some improvements are needed. For this reason, researchers continued this research in cycle II.

Cycle II improvement activities were carried out on Wednesday 16 November 2022. The stages of implementation in cycle II were the same as in cycle I, the difference was in the implementation stage. The implementation stage is in the mathematics learning process the teacher uses a simulation method using ice cream stick media for multiplication arithmetic operations material and students also practice by assembling the ice cream sticks to construct knowledge about multiplication arithmetic operations. Based on the test results, there were 12 students whose scores reached the minimum completeness criteria and 3 students who had not reached the minimum completeness criteria. The average class score in cycle II has increased, namely with an average value of 79.33 with complete learning of 80%, which means that almost all students score above the minimum completeness criteria. The percentage of students' learning completeness in cycle I and cycle II can be seen in graphical form 1.
DISCUSSION

The results of the research that has been carried out are by some of the findings of previous studies. Research states that concrete media is effective in improving students' mathematics learning outcomes in the subject matter of multiplication (Suartini, 2020). In addition, it is known that the use of concrete media can also increase the percentage of student learning completeness. The results of the study show that the use of concrete media, namely matchsticks, can increase student learning activities in the classroom and improve mathematics learning outcomes (Rahayu et al., 2022). The effectiveness of using concrete media is also in line with other studies, stating that learning outcomes and students' understanding increase after learning using concrete media in multiplication material (Aeni et al., 2019). It can be concluded from the three studies that concrete media is used in learning to improve the results of learning mathematics in multiplication material.

Based on the results of the research that has been done, it is known that the use of ice cream sticks as a concrete learning media in mathematics can improve learning achievement (Afriza & Ismaniar, 2022). These results are in line with the research explaining the use of concrete media in the form of ice cream stick can improve mathematics learning outcomes (Afriza & Ismaniar, 2022). In addition to learning outcomes, the use of ice cream stick concrete media also improves students' skills in carrying out mixed counting operations up to 10 in class III C1 students at SLB-C "YPLB" Blitar (Saadah, 2022).

The results of previous research by combining ice cream stick media with multiplication material were carried out by the findings of previous studies. The use of real object media in the form of ice cream sticks in the multiplication of natural numbers in learning mathematics can improve student learning outcomes (Kusmiatin, 2019). Research on learning mathematics using the think pair share model with ice cream stick
media can improve multiplication learning outcomes for grade 2 students. Based on the results of the processing and research above, it can be concluded that ice cream stick media can improve multiplication learning outcomes in mathematics. A differentiator between research conducted by current researchers and previous research is the subject used, previous research used low-class subjects, namely class 2, while researchers are now using high-class subjects, namely class 4.

Based on the results of research conducted by researchers and supported by previous research, it can be concluded that the use of concrete ice cream stick media can improve learning outcomes in math multiplication operations for students in grade 4 at 3 Kelutan State Elementary School. This is evidenced by an increase in the average value of 57.33 in cycle I to 79.33 in cycle II. The factors that influence the results of learning mathematics in the material for arithmetic multiplication operations include (1) internal factors of students, which include interest, attention, intelligence, perseverance, and learning motivation; and (2) external factors of students, namely teacher competence and creativity, methods used in teaching, learning facilities, and infrastructure.

CONCLUSION

Based on the results of data processing and data analysis, it can be concluded that the use of ice cream stick concrete media can improve mathematics learning outcomes in the multiplication arithmetic operation material for students in grade 4 SD Negeri 3 Kelutan. This can be seen from the average value and percentage of students' learning completeness which is increasing from cycle I to cycle II. In cycle I, the average value of students was 57.33 with 40% mastery. Then in cycle II, the average value of students increased to 79.33 with 80% mastery. Data on the results of students' learning completeness from cycle I to cycle II increased by 40%.

Based on the results of the research it is known that concrete media can improve the mathematics learning outcomes of multiplication arithmetic operation material in class IV students. Therefore, researchers suggest the following:

1. For teachers: in learning mathematics, teachers should use innovative and interesting learning media for students. Students still have difficulty thinking abstractly so media is needed that makes it easier for students to understand learning material. In addition, learning media can increase students' interest in learning. For better results, teachers should involve students in using media.

2. For other researchers: concrete media that can be used in learning mathematics is very diverse. Use media that students often encounter in everyday life that are appropriate to the learning material. In addition, it is hoped that other researchers will also conduct similar research using models, strategies, or other methods that can be used as references to help improve students' learning outcomes in mathematics.
REFERENCES


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