



IMPROVING THE SECOND-GRADE ELEMENTARY STUDENTS' LEARNING OUTCOMES ON THE SUBJECT MATTER OF MULTIPLICATION USING DORAEMON POCKET MEDIA

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ABSTRACT

This paper discusses the improvement of the second-grade students' learning outcomes at SDN Lakarsantri I/472 Surabaya in Mathematics learning subject on multiplication and division using Doraemon Pocket media. The research method used was classroom action research (CAR) in the form of cycles, which consist of action plans, implementation of actions, observation, and reflection. Data were collected by using instruments in the form of test sheets to measure students' achievement. The analysis results indicate that there is increasing activity and learning achievement in mathematics about multiplication in class II students at SDN Lakarsantri I/472 Surabaya. It is evidenced by the results of research data processing that indicate increasing students' activity and learning achievement in cycle 2. In the pre-cycle, students' percentage scores reached 58%. After conducting treatment by applying Doraemon Pocket in cycle 1, it increased to 82%. And in cycle 2, it increased to 92%. Thus, it can be concluded that Doraemon Pocket media can improve the students' learning achievement in class II on the subject matter of multiplication.

Keywords: students' learning outcomes, multiplication, Doraemon pocket

MENINGKATKAN HASIL BELAJAR SISWA KELAS II SEKOLAH DASAR PADA MATERI POKOK PERKALIAN MENGGUNAKAN MEDIA KANTONG DORAEMON

ABSTRAK

Artikel ini membahas peningkatan hasil belajar siswa kelas II SDN Lakarsantri I/472 Surabaya pada pembelajaran matematika materi perkalian menggunakan media Kantong *Doraemon*. Metode penelitian menggunakan penelitian tindakan kelas (PTK) yang berbentuk siklus dimana tiap siklusnya berisi rencana tindakan, pelaksanaan tindakan, observasi dan refleksi. Data dikumpulkan menggunakan instrumen yaitu lembar tes untuk mengukur prestasi belajar peserta didik. Hasil analisis menunjukkan bahwa ada peningkatan aktivitas serta prestasi belajar matematika mengenai perkalian pada siswa kelas II di SDN Lakarsantri I/472 Surabaya. Hal tersebut terbukti dari hasil olah data penelitian yang memperlihatkan ada peningkatan aktivitas siswa serta hasil belajarnya pada siklus 2. Nilai siswa sebelum siklus 1 mencapai 58%. Pada siklus 1 setelah mendapatkan perlakuan menggunakan Kantong *Doraemon* mengalami peningkatan menjadi 82%. Serta pada siklus 2 meningkat jadi 92%. Sehingga dapat disimpulkan bahwasanya penggunaan media Kantong *Doraemon* bisa meningkatkan prestasi belajar siswa kelas II pada materi pokok perkalian.

Kata Kunci: hasil belajar siswa, perkalian, kantong *Doraemon*

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INTRODUCTION

The quality of human resources determines the progress of a country, the quality of human resources itself is very dependent on the quality of education. Education has a very important role for a democratic, intelligent, open and peaceful society. Education is a conscious effort to create a learning environment so that students can actively develop their abilities to

acquire the skills needed for themselves, for society and for the State (Febriliyanti, 2018). Education is not only the process of imparting the intellectual skills of reading, writing and arithmetic, but also the process of maximizing the intellectual, social and personal development of students. Education functions to change the human mindset so that it can give birth to creative

ideas and develop in various ways of life, to bring about positive change. Education can be carried out anytime, anywhere, and anyone. One of the important educational materials is mathematics, because of its significant role in life (Hadi & Putra, 2021). Mathematics is one of several important materials that need to be taught in educational institutions from elementary to high school levels (Sogen et al., 2023). Learning mathematics is a process of forming principles and concepts related to one another. Because learning mathematics in elementary school is a way of providing students with the ability to understand mathematical material in the form of facts, concepts, principles, and accuracy in solving problems when faced with mathematical problems (Hartatik & Rahayu, 2018).

From the results of observations in class II at SDN Lakarsantri I/472 Surabaya, there are a number of factors that cause students to have difficulty understanding multiplication material. Among them is the lack of optimal teachers in using learning media in learning activities. In addition, there is also a lack of reference books that can help students learn the material. Learning methods that only rely on students sitting, listening, and writing have proven to be ineffective in increasing student understanding. So, it takes effort from the teacher to create more active and creative learning in order to attract students' interest. In this way, students can be more active and get motivated to be involved in learning activities, so they can increase their understanding in learning mathematics (Erwandri, 2022). During the learning process, the teacher has provided opportunities for students to practice multiplication skills by providing practice questions. However, unfortunately students often do not do it. During class learning, students can understand the material that the teacher conveys along with examples of problems. However, when given homework with questions that were somewhat different from the previous example, students found it difficult to do them and even forgot about the teacher's explanation in class.

This situation shows that students do not actually understand mathematical concepts which

results in low student mathematics learning outcomes. The role of the media is very much needed in the teacher's teaching process, especially in the field of mathematics where the concept of each material must be understood. Media is a learning aid that is processed or prepared by the teacher consciously and systematically to convey content or lesson material, so that students can be directly involved in teaching and learning activities.

Based on the results of the daily evaluation of multiplication material in class II Mathematics at SDN Lakarsantri I/472 Surabaya in the 2022/2023 school year, with a total of 28 children, only 42% of participants achieved the minimum mastery standard (KKM) of 75. In this evaluation, 16 students completed and 12 children incomplete.

Therefore, based on the explanation above, it is suggested that teachers pay attention to the use of appropriate media in learning, especially in mathematics with the topic of multiplication. Among the media that is considered suitable and relevant in teaching and learning mathematics is the Doraemon pouch, because it refers to the popular children's cartoon character, namely Doraemon and will help students learn multiplication concepts more easily through the character's magical pouch. (Ilmi et al., 2022). Utilizing Doraemon's pouch as a teaching medium in mathematics lessons, especially in multiplication material, is able to provide hands-on experience and make it easier for children to understand concepts related to the material being taught. This is in line with the explanation that has been submitted (Zairida et al., 2019). The use of mathematics teaching media is very important for teachers in order to introduce students to the basic concepts of mathematics. The use of Doraemon pouches as teaching media supports students in understanding multiplication concepts more easily (Astuti et al., 2022).

Based on the background above, the problem of this research focuses on improving student learning outcomes in the subject matter of Mathematics multiplication using Doraemon media which is fun for students and can improve

student learning outcomes. So that students do not get bored in carrying out learning activities.

LITERATURE REVIEW

Mathematics has a central position as the basis of knowledge in various fields, therefore it is essential to learn. Therefore, it is important to include mathematics as a compulsory subject to be taught at every stage of education, from elementary education to university. Mathematics lessons are really needed to be given to all students from an early age in order to improve their ability to think critically, analytically, creatively, systematically, and be able to work together effectively. This is needed so that later students can control and utilize the information obtained to survive in uncertain situations, constantly changing and full of competition. So, from the description above learning can be said that a process conscious self-improvement through the process that a person goes through in the form of a change in behavior which includes a person's cognitive, emotional and mental changes.

Learning and Learning Outcomes

Learning is part of the human life cycle that does not stop and is always related to human activities in meeting the needs of life, both spiritually and materially. Learning involves one's actions to change behavior as a whole, which is the result of experience gained from interactions with the surrounding environment (Bela et al., 2021). Learning is an activity carried out by individuals to acquire knowledge, skills and behavior through the development of educational materials to get better and better where during the learning process individuals use the cognitive, affective and psychomotor domains (Oktavia, 2022). Meanwhile, according to (Makkasau et al., 2022) learning is a process of seeing, observing and understanding something and acting through experience. Learning is also an event that occurs when students actively interact with the learning environment controlled by the teacher. Therefore, students participate directly in learning and interact with all the circumstances around them.

According to (Dasopang & Darwis, 2023) suggests that learning outcomes are the result of

an activity obtained in patterns of behavior, attitudes, understanding, appreciation, skills. In addition (Lina rosidah et al., 2020) believes that learning outcomes can indicate students' ability to complete evaluations conducted by teachers and schools as a sign of their success. The results of learning achievement are also the result of several aspects that contribute to the overall learning process (Kamaladini et al., 2021). Learning outcomes refer to the level of ability that students achieve when participating in teaching and learning activities that have been determined based on educational goals, which consist of cognitive, affective, and psychomotor aspects (Setyawati & Rusdiana, 2023).). From the explanation regarding the understanding of learning outcomes, it can be concluded that learning outcomes are the accumulation of knowledge that students get which includes cognitive, affective and psychomotor aspects during learning activities. Thus, many methods, models, techniques, strategies, and teaching media are used to improve the quality of learning outcomes in the field of mathematics studies.

Media Pouch Doraemon

The use of Doraemon's pouch as a teaching medium in the field of mathematics, especially in multiplication material, can provide direct experience to students and help them understand the concept of place value and the technique of storing in multiplication. As mentioned by (Wulandari, 2020) good teaching media is very important for teachers in order to teach basic mathematical concepts to students. Therefore, learning media from Doraemon's pocket is considered as an effective tool to help students understand the concept of multiplication. This learning media is based on the popular cartoon character for children, namely Doraemon. One of Doraemon's unique abilities is having a magic pouch that can fulfill people's wishes. In this learning media, the magic bag is used to learn multiplication techniques. The number of bags displayed is adjusted to the material of multiplying two numbers that is being studied, with properties similar to Doraemon's magic pouch which is able to grant wishes. Doraemon

bags can be made from basic materials using plywood or cardboard, then for the bags you can make flannel or origami paper. It is hoped that the use of Doraemon's pouch as a learning medium will increase students' understanding of the concept of multiplication, so that it will have a positive impact on their learning outcomes.

METHOD

The research carried out is a type of classroom action research (PTK) or classroom action research which in each cycle is composed of planning, action, observation, reflection (Agustin & Anwar, 2019). The next step in the cycle is the revision or improvement of planning, action, observation, and reflection. PTK is a careful study of teaching and learning activities in the form of intentional actions that occur and take place in the classroom context together (Mulyati & Evendi, 2020).). In this study, the sample used was class II students at SDN Lakarsantri I/472 Surabaya who were studying multiplication material. There are 28 students namely 16 female students and 12 male students who were the subject of this study. The research procedure uses three research steps, namely pre-cycle, cycle 1, and cycle 2. Each stage is carried out in the following steps: planning, implementing, observing and evaluating, analyzing, and reflecting.

Below is the research implementation schedule:

- a. The pre cycle will be held on Monday, 22 May 2023 at 10.00-11.00 WIB
- b. Cycle 1 learning improvements were carried out on Monday, May 29 at 10.00-11.00 WIB
- c. Cycle 2 repairs will be carried out on Wednesday, 5 June 2023 at 10.00-11.00 WIB

Procedures for improving learning through cycles composed of the stages of planning, implementing, observing, and reflecting, are designed through careful assessment. At the Pre-Cycle planning stage, problems were encountered where students did not fully understand the concept of multiplication and, which were finally resolved through the design of learning media. The implementation

stage involves the teacher or researcher to carry out learning that is adapted to the learning media that has been planned, such as using the Doraemon pocket media to improve the mathematics learning achievement of class II students. The observation/data collection stage involved student activities through the use of observation sheets and formative tests. In the reflection stage, the researcher drew the conclusion that the demonstration method could increase the level of students' understanding of the material, but it was not optimal in fulfilling the specified KKM. Problems that arise in cycle 1 become material for carrying out improvements in cycle 2.

After making improvements in cycle 2 based on observations, students' understanding of multiplication material increased and their learning outcomes met the KKM, as seen in the results of formative tests.

Data collection techniques in research are using tests and observations. The test was carried out by researchers to collect student learning outcomes from the use of Doraemon pocket media, data on the results of this test were taken from each cycle. Observations were made by researchers to directly observe students using Doraemon pocket media in learning Mathematics. The success of this research was marked by an increase in student learning outcomes from each cycle, this was indicated by student learning completeness of 90%.

RESULTS AND DISCUSSION

The results of the research conducted on class II students at SDN Lakarsantri I/472 Surabaya related to learning achievement in mathematics about multiplication using Doraemon pocket media, which was carried out to improve learning in cycles 1 and 2

Learning pre-cycle math class II SDN Lakarsantri I/472 Surabaya lesson 2022/2023 with the subject matter of multiplication, was held on Monday, 22 May 2023 the results were not satisfactory. The results of pre-cycle learning can be seen from the following table.

Tabel 1. Analysis of Pre-Cycle Formative Test Results

No	Range	Frequency
1	41-50	4
2	51-60	7
3	61-70	5
4	71-80	12
5	81-90	2
6	91-100	-
Jumlah		28

From the results of the evaluation of the mathematics test on multiplication material in the pre-cycle, it is known that out of 30 students, 4 of them got a score of 41-50, 7 students got a score of 51-60, 5 students got a score of 61-70, 12 students got a score of 71-80, and the remaining 2 students scored 81-90.

Based on the results of the pre-cycle evaluation, it was found that the smallest score was 48 and the highest score was 86, while the average value was 66.20. Through table 1, it can be concluded that 42% of students have achieved KKM 75, while 58% have not reached KKM. Therefore, the mathematics lesson on multiplication in class II students has not met the standards of success and completeness.

After the learning process ends, the value of the summative test will be obtained. Previously, the teacher gave an assessment in order to find out how well the students mastered the material the teacher taught in pre-cycle learning. On Monday 29 May 2023, improvement of cycle 1 learning was carried out by involving class II students as learning objects. In order to assist the evaluation, the researcher works closely with colleagues who act as observers. Learning was successfully carried out as planned and the results of the final evaluation showed good success. The results of cycle 1 learning improvements are presented in Table 2.

Tabel 2. Analysis of Cycle 1 Formative Test Results

No	Renge	Frequency
1	41-50	-
2	51-60	4
3	61-70	1
4	71-80	4
5	81-90	14
6	91-100	5
Jumlah		28

From cycle 1 evaluation data, there is a smallest number of 58 and a largest number of 96 with an average score of 81.50. Based on the table above, it can be concluded that 82% of students succeeded in fulfilling KKM 75, while the remaining 18% of students had not achieved it. This condition shows the progress of student learning outcomes after receiving treatment in cycle 1.

After that, in cycle 2 the researcher carried out the plans that had been prepared and teaching and learning activities could be carried out smoothly. At the end of the lesson, they carry out an evaluation to determine the success of student learning. Data on the results of improvements in cycle 2 are contained in Table 3.

Tabel 3. Analysis of Cycle 2 Formative Test Results

No	Rentang	Frekuensi
1	41-50	-
2	51-60	-
3	61-70	1
4	71-80	3
5	81-90	16
6	91-100	8
Jumlah		28

Based on the evaluation test in cycle 2, the smallest number is 74 while the largest number is 100, which means the average value is 87.20. From the results of the information table above, it can be concluded that 92% of students succeeded in fulfilling KKM 75, where the completeness standard was 85%. Therefore,

learning mathematics about multiplication in class II can be said to be successful and according to the standards of success and completeness.

From Table 1, Table 2, Table 3 it can be concluded and compared the completeness of student learning as presented in Table 4.

Tabel 4. Learning Outcomes and Improved Average Scores

No	Completeness	Pre Cycle		Cycle 1		Cycle 2	
		Amount	%	Amount	%	Amount	Siklus 2
1	complete	12	42	23	82	26	92
2	Not finished	16	58	5	18	2	8
3	Average value	66,20		81,50		87,20	

From the table above it can be seen that in the Pre-Cycle of students who achieved KKM, only 42%. However, in cycles 1 and 2, the percentage of students who met the KKM standard was 82% and 92%. This shows that the success of student learning is very dependent on the methods and approaches in learning used. In terms of students' average scores, there was a significant increase from the initial score of 66.20 to 81.50 in Cycle 1 and increased again to 87.20 in Cycle 2 after learning improvements were made..

process. For example, this media can be used as a visual tool to introduce the concept of multiplication, such as putting several objects in Doraemon's pouch and multiplying the number of objects by a certain number. This will help students to understand the concept of multiplication in a more concrete and visual way.

In addition, Doraemon's pocket media can also be used in various interactive activities. For example, the teacher can create a game or challenge that involves using Doraemon's pouch media. Students can be asked to find multiplication solutions by using the objects in Doraemon's bag or answer multiplication questions by looking at the pictures in the bag.

Another advantage of using Doraemon pouch media is its relevance to context student's daily life. Doraemon is a popular character among children, so the use of this media can increase students' interest in learning multiplication. They will feel more

Discussion

Doraemon pocket media is a type of media that can be used to improve student learning outcomes in multiplication material. This media has several advantages, such as attractive visuals, strong emotional appeal, and can provoke students' interest in learning. By using Doraemon pocket media, students can be actively involved in the learning

connected to the learning material because they can associate it with something that is familiar and liked. In using Doraemon pocket media, it is important for the teacher to design learning activities that suit the learning objectives. Previous research conducted by (Ayu Fitri et al., 2019) in socializing learning media for Doraemon bags to improve learning mathematics, found that these activities were able to increase 84% of students' motivation in learning mathematics in grade 3 with addition and subtraction material.

This media should be used as a means to introduce, describe, and practice the concept of multiplication, not just as entertainment. It should also be remembered that the use of this media should be adapted to the characteristics and needs of students, as well as integrated with effective teaching methods. By utilizing Doraemon's pocket media effectively, it is hoped that it can increase students' interest and understanding of multiplication material. In addition, the use of interesting and interactive media can also help students to remember and apply the multiplication concept better.

Doraemon pouch media can be an effective tool to increase students' interest in learning. Doraemon characters that are popular and liked by children can make them more enthusiastic in participating in learning. Interest in the media can motivate students to actively participate in learning activities and overall increase their level of involvement. Doraemon pouch media can also be used in interactive activities that encourage active student involvement. The results of previous research conducted by found that Doraemon pouch media had a significant positive effect on student learning outcomes in Mathematics with a significance value of $0.006 < 0.05$ with a value pretest 58,00 and posttest 77.50. Teachers can arrange various games or challenges involving the use of this media. For example, students can be asked to remove

objects from Doraemon's bag and multiply them by the number indicated by the teacher. This will encourage students to think creatively, interact with the media, and involve themselves in the learning process.

The use of Doraemon's pocket media helps create positive associations with multiplication material. When students feel joy and pleasure in learning to use this media, they tend to associate the positive experience with the concept of multiplication itself. This can help reduce the tendency for students to perceive mathematics as a difficult or boring subject. Previous researchers (Zairida et al., 2019) said that interesting learning media such as pictures, videos, animations, or multimedia presentations can provoke interest and attention student. They tend to be more involved and participate actively in learning, because the media is able to turn abstract concepts into something concrete and easier to understand.

CONCLUSIONS AND RECOMMENDATION

The use of Doraemon pocket media in learning mathematics can provide several benefits that can improve student learning outcomes. This media can attract interest and motivation to learn, help visualize mathematical concepts, improve memory, facilitate problem solving, and be used in various learning activities. Student learning outcomes are proven to increase from pre cycle 42% students had not reached KKM 75, in cycle I it was seen that 82% of students had reached KKM 75, and for cycle II 92% of students had achieved KKM 75 or had achieved the research success target of 90%.

In an effort to improve mathematics learning outcomes, it is also important to consider students' preferences and needs and utilize a variety of other learning aids and approaches. The use of Doraemon pocket media can be a creative and interesting way to facilitate mathematics learning, but it is not the only approach used.

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