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The Influence of Using Multiplication Board Media on Students' Mathematics Learning Outcomes Multiplication Concept Material in Class II SDN 3 Raguklampitan

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Abstract: This research aims to determine the effect of using multiplication board media on students' mathematics learning outcomes regarding multiplication concepts in class II at SDN 3 Raguklampitan. This research uses a quantitative type of research. Method research used in research This is Pre- Experimental Design and with a One Group Pretest-Posttest Design. The location of this research will be carried out in class II of SDN 3 Raguklampitan. The population in this study was all Class II students at SDN 3 Raguklampitan. The sample in this study used one class, namely class II students, totaling 20 students. The data collection technique in this research is in the form of a test. Data analysis was carried out using a parametric statistical test, namely the Paired Sample T-test. The research results show that the significance value is 0.000 <0.05, which means H_o it is rejected. So it can be concluded that there is an influence of the use of multiplication board learning media on the mathematics learning outcomes of class II students at SDN 3 Raguklampitan.

Keywords: Multiplication Board Media, Learning Results, Mathematics

1. Introduction

Education is a process life in developing each individual to be able to survive. Education for human life is an absolute thing that must be fulfilled throughout life. Education is a process of interaction between teachers and students in learning and teaching activities designed to grow and develop potential and instill values and norms (Alpian et al., 2019). The success of a teaching and learning activity process is influenced by several factors, namely teacher, student, applied learning, the surrounding environment and the learning resources used (Ozcan, 2021; Asvio, Arpinus & Suharmon, 2017).

Education is very important for the development and progress of a country, especially Indonesia. Indonesia has a state goal in the fourth paragraph of the opening of the 1945 Constitution, namely, to make the nation's life intelligent. In making the nation's life more intelligent, the step taken is education in schools, especially at the elementary school level. The aim of education in elementary schools is that students are prepared with the ability to write, calculate, read and basic skills that are useful in student development to prepare them for the next level.

Elementary schools have subjects that are important for people's lives, namely mathematics. Mathematics is one of the subjects found in school and in everyday life. This subject is often called deductive science. Not a few students think that learning mathematics is difficult and makes them lazy to practice (Ukobiza et al., 2021; . Those who think that mathematics is difficult are not correct but tend to be concrete and rational and can be proven to be true. Mathematics as deductive reasoning. So, teachers must be able to bridge between children who do not yet think deductively so that they can understand the deductive world of mathematics.

Mathematics is studied from elementary school to high school to college. This shows the importance of mathematics in the academic field. Many students are still slow in understanding multiplication, so facilities are needed to support and encourage the learning process. Many teachers still use the lecture learning method. This method emphasizes active teachers and passive students so that many students are bored and do not understand what is being explained. Therefore, a learning method or media is needed that can make students interested and independent in studying mathematics. The right learning media can increase learning interest in mathematics and influence learning outcomes.

Learning activities require media or supporting facilities to achieve maximum learning results. Many schools rarely use media in teaching and learning activities. Still using conventional methods. Achieving educational goals will be

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successful if the teaching and learning process is carried out by professional teachers. One of them is using interesting learning media to be able to improve children's learning abilities. According to Panggabean et al. (2021) stated that in the learning process which utilizes media as a way for the teaching and learning process to be carried out well, it results in the emergence of new desires, interests, motivation and has an impact on students' psychology. Apart from that, according to Farista & M, (2018) the use of learning media will really help the effectiveness of the learning process and delivery of messages and learning materials.

Previous research related to the use of multiplication smart board media written by Kanti et al. (2023) with the title "The Effect of Using Multiplication Smart Board Media for Grade 2 Students' Mathematics Learning Outcomes at MI Al-Quraniyah South Bengkulu" states that there is an influence of use multiplication smart board media for mathematics learning outcomes for grade 2 students at MI Al-Quraniyah South Bengkulu. Where the posttest results obtained by experimental group II A students obtained an average score of 79.82 on the posttest, while the control group II B obtained an average of 70.42 which shows that student learning outcomes vary in class II at MI Al-Quraniyah South Bengkulu between multiplication smart board media users Students who received either t calculated t table or t, indicating that the research rejected the null hypothesis (Ho) and supported the alternative hypothesis (Ha).

Other research related to the use of puzzle media written by (Hariati et al., 2023) with the title "The Effect of Using Puzzle Media on Student Learning Outcomes in Mathematics Subjects in Class III of SD Negeri 106154 Village Kota Rantang" states that there is an influence of puzzle media on learning Fractional mathematics material on the learning outcomes of class III students at SD Negeri 106154, Rantang City Village. Where, based on the t-test calculation using SPSS Statistics 20, the tcount is 2,480 with a Sig value. 0.025. Because the sig value. 0.025 < 0.05 then H0 is rejected.

Based on the results of observations at SD Negeri 3 Raguklampitan, it was found that the material about multiplication in class II was material that was considered difficult, because students had difficulty adding multiplications as repeated additions and had difficulty solving multiplications in the form of story problems. Some of the class II students at SDN 3 Raguklampitan are still lacking in learning multiplication, therefore the teacher tries as hard as possible with the methods taught, such as memorizing multiplication which is made into music, which is easier for many children to understand. Apart from that, SDN 3 Raguklampitan does not yet have adequate teaching and learning facilities. Limited infrastructure and facilities are the reason for the minimal use of existing learning media. The use of learning media at SDN 3 Raguklampitan, especially in mathematics learning, is only limited to using concrete objects that exist in everyday life.

From the several problems above, researchers are encouraged to find solutions using attractive and fun learning media in understanding mathematics, namely multiplication board media. Multiplication board media is a tool in the form of a board that is used to convey multiplication material in order to stimulate students' understanding and interest in learning. With the help of multiplication board media, students learn actively and can improve their learning outcomes in mathematics multiplication. Seeing this, the researchers were interested in conducting research on " The Effect of Using Multiplication Board Media on Students' Mathematics Learning Outcomes on Multiplication Concept Material in Class II SDN 3 Raguklampitan".

2. Methodology

This research uses a quantitative type of research. Quantitative research is a process of discovering knowledge that uses numerical data as a tool for analyzing data. Quantitative research uses data in the form of numbers and exact knowledge to answer research hypotheses. The research method used in this research is Pre-Experimental Design and One Group Pretest-Posttest Design. "One-Group Pretest-Posttest Design which includes one group which during the pre-test stage observes research subjects followed by providing treatment and giving post-test questions at the end of the learning process." The treatment results obtained are more accurate because there is a process of comparing the conditions before and after treatment so that the effect can be known.

The population in this study were all class II students at SDN 3 Raguklampitan. The sample in this study used one class, namely class II students, totaling 20 students. The data collection technique in this research is in the form of a test. The data collection technique in the form of a test is carried out by asking students to fill in pre-test and post-test questions to determine the value of cognitive mathematics learning outcomes before and after being given treatment.

The data analysis technique for this research is the Normality Test and Paired Sample T-test hypothesis test. The Normality Test in this study used the Shapiro-Wilk formula assisted by SPSS. Normality test to find out whether the data is normally distributed or not. Data is said to be normally distributed if the significance level value is greater than the significance level of 0.05 (sig > 0.05). Meanwhile, data is said to be abnormal if the significance level value is smaller than the significance level of 0.05 (sig < 0.05). After carrying out a normality test and the data obtained is normally distributed, the next step is to carry out a hypothesis test, namely the Paired Sample T-Test. The Paired Sample T-Test was used to determine the average difference before and after the action was given. Then researchers can formulate a hypothesis whether there are differences in students' mathematics learning outcomes between before and after being given treatment using multiplication board media.

Table 1: One Group Pretest-Posttest Design Research Design

Pretest	Treatment	Posttest
O_1	X	O_2

Information:

O_1= Pretest before treatment

O_2= Posttest after treatment

X= Treatment given

3. Results

This research aims to find out whether there is an influence of the learning media used on students' mathematics learning outcomes. The data analyzed was obtained from the results of the pretest and posttest scores carried out by the students, so that the following results were obtained:

Table 2: Pretest and Posttest Results Data

Test Indicator	Min Value	Max Value	Average
Pre Test	65	75	70.1
Post Test	74	80	77.1

The data table shows that the average student learning outcomes have increased from 70.1 during the pretest to 77.1 during the posttest. The value data will then be tested using a normality test to find out whether the data is normally distributed or not and after that a paired sample t-test is carried out as a hypothesis test.

3.1 Normality test

In the results of calculations using SPSS, the following results were obtained:

Table 3. SPSS Output Normality Test Results

	Kolmogorov-Smirnov [a]			Shapiro-Wilk		
	Statistics	df	Sig.	Statistics	df	Sig.
pretest	.143	20	,200 *	,945	20	,301
posttest	.126	20	,200 *	,967	20	,681

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

The Normality Test in this study used the Shapiro-Wilk formula because the sample size was less than 50 students. To state that data is normally distributed, you can rely on its significant value. The normality test is carried out to determine whether the data distribution for each variable analyzed is normally distributed or not (Novenia et al., 2020) . Data is said to be normally distributed if the significance value α > is 0.05. Conversely, if the significance value α < is 0.05 then the data is said to be not normally distributed.

Based on the SPSS table above, it can be seen that the significant values obtained from the normality test are as follows. The pretest value has a significant value of 0.301 > 0.05 and the posttest value has a significant value of 0.681 > 0.05. From the SPSS calculation results, both data have a significant value of > 0.05, which means the data comes from a normally distributed population.

3.2 Paired Sample T-Test

Paired Samples T-Test is used to determine the hypothesis of an experiment or treatment. The basis for making hypothesis testing decisions is:

H_O = There is no effect of using multiplication board learning media on students' mathematics learning outcomes

H_a = There is an influence of the use of multiplication board learning media on students' mathematics learning outcomes

Significant level α= 0.05

Criteria:

If it is significant > 0.05, then it H_O is accepted

If it is significant < 0.05, then it H_0 is rejected

The criteria used are if the significant value is > 0.05, then H_0 it is accepted, which means that the multiplication board media has no influence on the mathematics learning outcomes of class II students at SDN 3 Raguklampitan. Meanwhile, if the significant value is <0.05, then H_0 it is rejected, which means that the multiplication board media has an influence on the mathematics learning outcomes of class II students at SDN 3 Raguklampitan.

Table 4. Paired Samples Test Results

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	pretest - posttest	-7.00000	3.06079	.68441	-8.43249	-5.56751	-10,228	19	,000

Based on the SPSS test results table above, a significant value of 0.000 <0.05 is obtained, which means H_0 it is rejected. Thus it can be concluded that there is an influence of the use of multiplication board learning media on the mathematics learning outcomes of class II students at SDN 3 Raguklampitan.

4. Discussion

The results of the research conducted show that there is an influence of the use of multiplication board media on students' mathematics learning outcomes. This is proven by the average student learning outcomes increasing from 70.1 during the pretest to 77.1 during the posttest. Using the help of the SPSS application, testing the Paired Sample T-Test hypothesis produces a significant value of 0.000 < 0.05, meaning H_0 it is rejected . This shows that the use of multiplication board media influences the mathematics learning outcomes of class II students at SDN 3 Raguklampitan.

Strengthened by the results of this research, it proves that the use of this learning media can improve the quality of the teaching and learning process which will ultimately improve student learning outcomes. Learning media can help educators to enrich students' insight so that the teaching and learning process is enjoyable. Educators must design learning facilities (media), so that students' learning activities can be made easier and encourage students' learning processes. By implementing this multiplication board learning media, it is hoped that students will be able to understand the concept of multiplication easily.

Using learning media can stimulate students to improve and motivate them in learning and have a good influence on students' psychology. Learning media can make the process of teaching and learning activities clearer and easier for students to understand, which refers to the present and future. in the future so that it can continue to follow current developments (Aliyah & Purwanto, 2022) . In Mathematics subjects, especially in the lower grades, learning media are needed that are interesting, effective and interactive so that they get the attention of students to pay attention to the material being presented. Learning media can also influence the learning outcomes of students in education. Therefore, educators in choosing media also need to consider students' learning interests. Because with the influence of this learning media, Mathematics learning outcomes depend on students' learning interests (Tiwow et al., 2022) .

The findings of this research are in line with research conducted by Kurniawati (2022) with the title "Improving Student Learning Outcomes in Multiplication Material Using the Mathematical Smart Multiplication Board (Panlintarmatika)" which explains that the use of the mathematics smart multiplication board media is more meaningful, fun, and students can play an active role in the learning process. Students can discover the concept of multiplication with this media. Activities carried out by students in learning can make learning more meaningful and enjoyable so that the concept of multiplication can be easily remembered by students. This is in line with research conducted Jannah et al. (2021) which stated that student able to understand the concept of multiplying numbers through meaningful learning with problem-solving on student worksheets and test that linked previous mathematical understanding with a new understanding of the concept of multiplying numbers. This research can be used as alternative learning for other inclusive schools, especially for students with special needs with the same criteria.

The use of multiplication board media in mathematics learning, multiplication material becomes more meaningful and fun, and students can play an active role in the learning process. Students can discover the concept of multiplication by using this media. Activities carried out by students in learning can make learning more meaningful and enjoyable so that the concept of multiplication can be easily remembered by students. This is in accordance with the opinion (Anas, 2018) that the multiplication board media can clarify the meaning so that participants It is easier for students to understand multiplication material and makes students more active in doing it learning such as observing, practicing and so on.

The Multiplication Board Learning Media in this research is useful for making it easier for students to remember and memorize multiplication. Apart from that, this learning media can also support the multiplication learning method through children's musical rhythmic song lyrics which has been carried out by the class II teacher at SDN 3 Raguklampitan. The application of this learning media also aims to attract students' attention and interest in learning mathematics, multiplication material. Thus, the application of this learning media is expected to help students master and understand multiplication material.

5. Conclusion

Based on the results of research and data analysis, it shows that class II students at SDN 3 Raguklampitan are better able to understand the concept of multiplication if they use the multiplication board learning media. This is proven by an increase in students' mathematics scores from 70.1 during the pretest to 77.1 during the posttest. Next, the Paired Sample T-test hypothesis test was carried out, namely obtaining a significant value of 0.000 < 0.05, which means H_O was rejected. So it can be concluded that there is an influence of the use of multiplication board learning media on the mathematics learning outcomes of class II students at SDN 3 Raguklampitan.

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Conflict of Interest

The authors declare no conflicts of interest.

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