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Strategy improving students' understanding of multiplication concepts through abacus props abacus 100 beads class 2 sd Negeri 0119 banjar raja

Muhammad Asyhari Hasibuan[1], Nurhalimah Harahap[2], Era Mutiah[3]

[1 2 3] Barumun Raya Islamic College, Indonesia

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ABSTRACT

"Strategy to Increase Students' Understanding of Multiplication Concepts through 100 Bead Abacus Props in Class II of SD Negeri 0119 Banjar Raja." Thesis, Madrasah Ibtidaiyah Teacher Education Study Program (PGMI). STAI Barumun Raya Sibuhuan. 2023. This study aims to determine (1) the understanding of the concept of multiplication of second grade students of SD Negeri 0119 Banjar Raja. (2) strategies to improve students' understanding of the concept of multiplication through abacus props 100 beads class II SD Negeri 0119 Banjar Raja. The type of research used is Classroom Action Research (PTK) which consists of 2 cycles, each cycle consisting of planning, implementation, observation and reflection. This research was conducted in class II SD Negeri 0119 Banjar Raja, The data sources in this study were divided into two, namely (1) primary data of class II students of SD Negeri 0119 Banjar Raja, (2) secondary data, namely class II teachers of SD Negeri 0119 Banjar Raja. Data collection techniques in this study were obtained through interviews, observations, written tests and documentation. The data analysis technique in this research is qualitative data analysis technique. Based on the results of the study it can be concluded that (1) Understanding the concept of multiplication of grade II students of SD Negeri 0119 Banjar Raja is still below KKM, it can be seen that 1 student or 6.67% who have an understanding of the concept in multiplication 'very good' 2 students or 13.33% understanding of the concept in multiplication 'good', 3 students or 20.00% understanding of the concept in multiplication 'enough', 8 students or 53.33% understanding of the concept in multiplication ' less', 1 student or 6.67% understanding of the concept in multiplication 'very less'.

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Corresponding Author:

Muhammad Asyhari Hasibuan,
Barumun Raya Islamic College, Indonesia,
Jl. Kihajar Dewantara No.66, Huta Ibus, North Sumatra, Indonesia, 22763.
Email: asyharihasibuan1@gmail.com

1. INTRODUCTION

Education is a human effort to develop personality and abilities in accordance with the values in the nation's culture. Therefore, education is very important to create a quality and skilled successor generation, so that students are able to utilize, train and develop their potential to have spiritual strength, self-control, personality, intelligence, good morals, and be responsible to society, nation and state. In line with the importance of education, Allah will prioritize and elevate the status of those who are knowledgeable.

Mathematics is a component of a series of learning that plays an important role in education. Mathematics is also a field of study that supports the development of technology and science. However, until now there are still many students who do not like mathematics and feel that mathematics is a difficult subject because many students still have difficulty in doing math problems. Although mathematics is considered to have a level of difficulty, everyone must learn it because it is a tool related to everyday life. Relating to everyday life includes knowledge of calculating, measuring, and using information (Lamuhamad, Laruli, and Concepts 2022:51).

Multiplication in elementary school begins to be taught in grade II. As a beginner, so that learning becomes meaningful and can provide life skills, a contextual approach is needed whose problems are taken from stories that are close to the context of students' lives. Multiplication is a very crucial/important topic in mathematics learning because its application is often found in everyday life. Like other operations, multiplication learning is divided into two things, namely basic multiplication and advanced multiplication. The basic multiplication in question is the multiplication of 2 single-digit numbers, while advanced multiplication is multiplication involving at least a 2-digit number (Raharjo, Marsudi 2009:7).

Multiplication is identical to the operation of adding numbers that is repeated up to a certain multiple. Multiplication is a mathematical operation that multiplies one number by another number to produce a certain definite value, the symbol for the multiplication operation is a cross (×) (Heruman 2021:23). Many students have difficulty and are confused during multiplication lessons because they have to scribble on their books if they don't prepare scratch paper and it takes a long time. Multiplication is the key to the next material, if they can't then the next material will be difficult.

Mathematical misconceptions by teachers in elementary school teaching can result in conceptual errors or basic misunderstandings that continue to be carried over to higher education. This is because the characteristics of mathematical learning materials are interrelated and continuous with other materials. To study one of the mathematical topics at an advanced level must be based on reasoning from basic knowledge or previous prerequisite knowledge. If someone experiences a mathematical misconception in the first learning and is not immediately corrected, it will have an impact on subsequent mathematics learning (Kusmaryono 2019:3).

According to Mulyono (2019:9) learning difficulties are deficiencies in one or more areas of specific subjects such as reading, writing and mathematics or in various skills that are more general in nature such as listening, speaking, and thinking. Thus, more treatment is needed, and in this context the use of the abacus method was chosen in learning multiplication operations. According to the mental theory of mathematics, this abacus can make children able to master and optimally use all their potential and creativity, including absorbing advanced knowledge later.

Based on the test results that the author conducted on Monday, May 15, 2023 in class II of SD Negeri 0119 Banjar Raja, that students' understanding of the concept of multiplication is still below the KKM 75, many students feel bored and tired when learning takes place. The teacher only uses the lecture method, where the teacher is the one who delivers the material and the students receive the material. Occasionally the teacher reprimands students who do not pay attention to the teacher's explanation and provides motivation so that students are enthusiastic about learning. Students' abilities in understanding lessons vary, sometimes teachers feel confused about determining what kind of teaching method is right so that children who have difficulty learning to count can follow their friends who can already count. In reality, what often happens in the process
teaching and learning mathematics students are still slow in operating numbers, especially in multiplication operations. This happens because multiplication is only taught by rote, and even more fatally students are wrong in operating multiplication. This is due to a lack of understanding of the concept of multiplication, namely repeated addition.

In counting activities, multiplication cannot be separated. To foster motivation and counting skills, various learning media have been developed to overcome students' difficulties in operating numbers when learning mathematics, one of which is by using the 100-maik abacus teaching aid. Abacus is an abbreviation of the Right Brain Potential Optimizing Education System. Learning the

abacus can activate the right and left brain in humans in a balanced way. Through the abacus media, students are expected to be able to work on and answer addition and subtraction calculation questions easily and correctly (Wijayanti and Suswandari 2022:60)

In learning the abacus, children will be required to use their hands, logic and imagination. When children calculate numbers in a mathematical operation, then indirectly the child will use their imagination to calculate the numbers and after that the child will use their creativity to show the results through the abacus beads so that the child's left and right brains will work simultaneously. When students are going to do a mathematical operation, then indirectly the student will use their imagination to calculate the numbers. After that, the student will use their creativity to show the results through the abacus beads. So that the right brain and left brain of the student will work together. Therefore, it is important to introduce and learn the use of the abacus as a tool in learning mathematics in lower elementary school classes.

2. RESEARCH METHOD

The research period was one month, namely July of the 2023/2024 Academic Year and this research was located at SD Negeri 0119 Banjar Raja, Barumun District, Padang Lawas Regency, Padang Lawas Regency. The type used in this research is classroom action research (CAR). CAR is known as classroom action research, abbreviated as CAR. CAR or CAR has become a concern for world education experts, along with changes in society's perspective on the duties of educators as a profession that is no longer inferior. World education practitioners are trying to position the work of teachers as a profession that is on par with other professions. If in the past teachers were considered a semi-profession, currently the work of teachers is being led to become a full profession (Priatna 2022:20). The subjects in this Classroom Action Research (CAR) were class II of SD Negeri 0119 Banjar Raja, Barumun District, Padang Lawas Regency, Padang Lawas Regency, totaling 36 students, consisting of 17 male students and 19 female students.

3. RESULTS AND DISCUSSIONS

Description of results

Based on the pre-cycle results, the understanding of the multiplication concept of class II students at SD Negeri 0119 Banjar Raja is still below the KKM, as can be seen in the following table:

Table 1. Results of Students' Understanding of Multiplication Concepts Pre-cycle

No	Success Predicate	Amount	Percentage
1	Very good	1	6.67
2	Good	2	13.33
3	Enough	3	20.00
4	Not enough	8	53.33
5	Very less	1	6.67
	Friday	15	100

good" 2 students or 13.33%, "good", 3 students or 20.00%, "sufficient", 8 students or 53.33%, "less", 1 student or 6.67% "very less".

Description of Cycle I Results

Based on the results of cycle I, the understanding of the multiplication concept of class II students of SD Negeri 0119 Banjar Raja using the 100-mainik abacus media has begun to increase and can be seen in the following table:

Table 2 Results of Students' Understanding of Multiplication Concepts in Cycle I

No	Success Predicate	Amount	Percentage
1	Very good	4	26.67
2	Good	9	60.00
3	Enough	2	13.33

4	Not enough	0	0.00
5	Very less	0	0.00
	Friday	15	100

Based on the table above, it can be seen that the understanding of the concept of multiplication of students in cycle I has begun to increase, namely 4 students or 26.67% who are in the "very good" category, 9 students or 60.00%, the "good" category, 1 student or 13.33%, the "sufficient" category, no students in the "less" category, no students in the "very less" category.

Description of Cycle II Results
Based on the results of cycle II, the understanding of the multiplication concept of class II students of SD Negeri 0119 Banjar Raja using the 100-mainik abacus media has increased and can be seen in the following table:

Table 3 Results of Students' Understanding of Multiplication Concepts in Cycle II

No	Success Predicate	Amount	Percentage
1	Very good	12	80.00
2	Good	3	20.00
3	Enough	0	0.00
4	Not enough	0	0.00
5	Very less	0	0.00
	Friday	15	100

Based on the table above, it can be seen that the understanding of the concept of multiplication of students in cycle II has increased, namely 12 students or 80.00%, who have the category "very good" 3 students or 20.00%, the category "good", there is no category "enough", there are no students in the category "Less", there are no students in the category "very less".

Based on the results of the research conducted, the research findings can be presented, namely before the use of the abacus100 beads media, the researcher conducted an observation of the understanding of the multiplication concept of grade II students of SD Negeri 0119 Banjar Raja which was still below the KKM, namely only 1 student or 6.67% who had the category "very good" 2 students or 13.33%, "good", 3 students or 20.00%, "enough", 8 students or 53.33%, "less", 1 student or 6.67% "very less". The understanding of the multiplication concept of students in cycle I has begun to increase, namely 4 students or 26.67% who have the category "very good" 9 students or 60.00%, category "good", 1 student or 13.33%, category "enough", no students in the category "less", no students in the category "very less". The understanding of the concept of multiplication of students in cycle II has increased, namely 12 students or 80.00%, who have the category "very good" 3 students or 20.00%, the category "good", there is no category "sufficient", there are no students in the category "Less", there are no students in the category "very less".

The discussion contains descriptions and explanations of the results of the classroom actions carried out. The things discussed in the discussion are things related to the research problems and action hypotheses. The results of this study are a collaborative work between researchers and responses from teacher II of SD Negeri 0128 Banjar Raja, Barumun District, Padang Lawas Regency who were involved in this study. Learning carried out using the 100-bead abacus media during the action has increased. The teacher has provided sufficient encouragement and motivation to students in improving students' understanding of the concept of multiplication so that they are active in using the abacus media, actively asking questions, actively answering questions and students are active in facing the lessons delivered by the teacher and better understand the material given and apply it to the use of the 100-bead abacus media.

This research has been said to be successful by running 2 cycles. The increase in the results of understanding the concept of multiplication can start from the pretest posttest cycle I and posttest cycle II can be seen in the following graph:

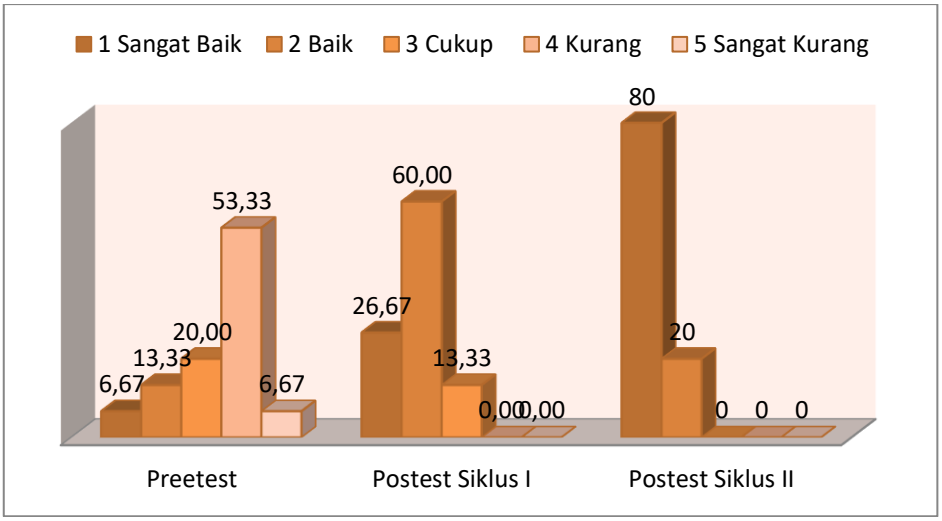

Figure 1 Comparison of Observation Results of Increasing Understanding of Multiplication Concepts Pretest, Posttest Cycle I and Posttest Cycle II

The graph above explains that the pre-cycle results were only 1 student or 6.67% who had the category "very good" 2 students or 13.33%, "good", 3 students or 20.00%, "enough", 8 students or 53.33%, "less", 1 student or 6.67% "very less". The understanding of the concept of multiplication of students in cycle I has begun to increase, namely 4 students or 26.67% who have the category "very good" 9 students or 60.00%, the category "good", 1 student or 13.33%, the category "enough", no students in the category "less", no students in the category "very less". The understanding of the concept of multiplication of students in the post-test cycle II has increased, namely 12 students or 80.00%, who have the category "very good" 3 students or 20.00%, the category "good", there is no category "enough", there are no students in the category "Less", there are no students in the category "very less".

4. CONCLUSION

Based on the results of the research conducted by the author, the following conclusions and suggestions can be put forward: The understanding of the multiplication concept of class II students of SD Negeri 0119 Banjar Raja is still below the KKM, namely only 1 student or 6.67% who have the category "very good" 2 students or 13.33%, "good", 3 students or 20.00%, "enough", 8 students or 53.33%, "less", 1 student or 6.67% "very less". The strategy to improve students' understanding of the multiplication concept through the 100-bead abacus teaching aids of class II SD Negeri 0119 Banjar Raja, namely in cycle I has begun to increase, namely 4 students or 26.67% who have the category "very good" 9 students or 60.00%, category "good", 1 student or 13.33%, category "enough", no students in the category "less", no students in the category "very less". The understanding of the concept of multiplication of students in cycle II has increased, namely 12 students or 80.00%, who have the category "very good" 3 students or 20.00%, the category "good", there is no category "sufficient", there are no students in the category "Less", there are no students in the category "very less".

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