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THE EFFECT OF THE FINGERPRINT METHOD ONTHE ABOUT CALCULATION OF CLASS III

Tia Latifatu Sadiah[1], Sinta Maria Dewi[2], Lutfi Dwi Lestari[3], Mochamad Kohar Mudzakar[4]

This study aims to determine the effect of the JARIMATIKA method on the ability to calculate multiplication of class III in Mathematics subject at SDN Karawang Wetan V, East Karawang District. This research is a quantitative type of research. The population used in this study were all grade III students of SDN Karawang Wetan V, East Karawang District, amounting to 74 students. A sample of 50 students from population members was taken from 25 students in the experimental class and 25 students in the control class. Data collection techniques in this study through the ability to count multiplication in Mathematics. The instrument in this study was in the form of a short test item. The data analysis technique used was statistical calculations. The results of the validity test about the students' ability to count multiplication in mathematics obtained 10 instruments which were declared valid from the 10 items tested. The results of the reliability test obtained an rxy value of 0.890. Hypothesis calculation using the t-test namely Independent sample T test and obtained at a significant level of 0.05 indicates that the probability value (significance) is 0.000. Because the significance value of 0.000 <α = 0.05, with the conference to the results of t arithmetic> t table (6.902> 1.675) then Ho is rejected. This proves that there is an influence of the use of the JARIMATIKA method on the ability to calculate multiplication in third grade students in the even semester of SDN Karawang Wetan V

Keyword: *JARIMATIKA Method, Ability to calculate multiplication, Mathematics*

I. INTRODUCTION

Mathematics is one of the lessons that are relevant to the times. Mathematics is one of the fields of study that supports the development of science and technology. But there are still many students who feel mathematics as a difficult subject, not fun, even a frightening specter. According to Wulandani (2007: 17) "Jarimatika method is a method of counting using the fingers as an aid in completing arithmetic (counting process) both addition, subtraction, multiplication and division". This method will attract the attention of students and can facilitate students in understanding the basic concepts of multiplication because they use concrete media and examples. Besides the Jarimatika method is a simple and practical method for students to use. The Jarimatika method is very fun to learn, fun, challenging, and doesn't overload the memory of the brain and its tools are always available. Even during exams students can use this Jarimatika method without having to be afraid of being confiscated by the teacher as well as other numerical aids, because the tool is students 'own fingers and can attract students' attention in the learning process.

[1]*Universitas Buana Perjuangan Karawang*
Widyatama University[4]
Corresponding author tia.latifatu@ubpkarawang.ac.id
sintamaria@ubpkarawang.ac.id sd15.lutfilestari@mhs.ubpkarawang.ac.id

One's understanding of what he has learned will be different from someone else's, this can be clearly seen in its application. According to Yusuf (2003: 129), argues that "ability is the ability to compute and apply concepts that have been understood in a relatively short time, with the right way and results". The abilities possessed by someone will be different from the abilities possessed by others, depending on the understanding of concepts and how often they are to practice.

Abilities are also needed in elementary school children such as the ability to calculate numbers. The ability of one child to another will differ depending on the child's understanding of the concept of numbers or arithmetic. The concept of numbers or arithmetic is needed in daily life according to Nagan (in Abdurrahman, 2003: 253) says that, "Arithmetic or arithmetic is a branch of mathematics with regard to the nature of the relationships of real numbers with their calculations, especially concerning the addition, subtraction, subtraction , multiplication, and division ". So it can be concluded that arithmetic or arithmetic is knowledge of numbers. According to Putri (2014: 3) "Numeracy is an activity of doing, doing calculations such as adding, subtracting, multiplying, dividing and manipulating mathematical numbers and symbols". Numeracy is an important ability and needs to be developed in students from an early age because it will be useful in future life. Given the importance of numeracy skills for students, it needs to be taught from an early age, using various methods and appropriate media so as not to damage the pattern of child development. Early learning must be done in a simple and appropriate way and carried out consistently and continuously in a conducive and pleasant atmosphere, then the child's brain will be trained to continue to develop so that children can master and even enjoy mathematics, Susanto (2011: 65) points out. The ability to count is very important for someone so often parents consciously or not, forcing children to immediately master the ability to count well. Even though someone can count well, a process is needed. Wulandani, Putra & Bernard, (2016: 02) said that there are several processes needed to be able to calculate properly, as follows:

1. Understand in advance about numbers and numerating processes,
2. Introduced by the symbol number,
3. Taught the concept of arithmetic operations,
4. Various methods and methods of calculation are introduced.

Based on the description that has been discussed, it can be concluded that the ability to count is an ability to apply some mathematical concepts which include addition, subtraction, multiplication and division, which are used as a basis for learning other Sciences in a short time with the correct method and results through practice activities. Mathematics is a tool to develop one's way of thinking, so mathematics is very necessary in daily life and in the face of advances in science and technology. The basic concept of mathematics learned at the elementary / MI level is a concept that is very necessary for students to understand mathematics in the next material. Basically, multiplication is a repetitive sum. Therefore the ability that students must have before learning multiplication is addition. According to Negoro & Harahap (2003: 275) said that multiplication can be defined "if a and b are chopped numbers, then axb is the sum of repeated numbers which is a term and each term is equal to b ie b + b + b ... a number of

a ". Therefore, before entering multiplication operations, students must master the first arithmetic operations.

II. RESEARCH METHOD

This study uses a quantitative approach to the type of research used in the form of experiments. The type of experimental method used is true experimental, because in this design, the researcher can control all external variables that affect the course of the experiment. Thus the internal validity (the quality of the research design) can be high. The main characteristic of true experimental is the sample used for the experiment as a control group is taken randomly from a certain population. The design used in this study is Pretest-Posttest Control Group Design (Sugiyono, 2017: 76). The design of this study is presented in Table 3.1 below:

Table 3.1 Pretest-Posttest Control Group Design Research Design

Class	***Pretest***	***Treatment***	***postest***
KE	O_1	X_1	O_2
KO	O_3	-	O_4

Information:

TO: Experiment Class KO: Control Class

O1: Pre-test the experimental class O2: Post-test experimental class O3: Pre-test control class

O4: Post-test control class

X1: Treatment of the experimental class using the Jarimatika method

The stages carried out in this study are: (1) conducting surveys and submitting licenses to schools, (2) making instruments, validating instruments and testing instruments, (3) conducting research surveys, (4) coordinating with teachers, (

5) carry out the initial test (pretest). The initial test (pre-test) was conducted to see the initial ability of the experimental group and the control group, (6) carry out learning using the Jarimatika method in the experimental class and the conventional method in the control class, and (7) carry out the final test (post-test) on the two experimental groups.

III. RESULT AND DISCUSSION

1. Description of Pretest Data for Experiment Class and Control Class

Table 4.1 Statistical Data Pre-test Value Operations Calculate Multiplication 6-9 Experiment Class and Control Class

No	**Class**	**N**	**Maksimum value**	**Minimum value**	**Mean**	**Median**	**Modus**	**Standard Deviation**

1	Exsperiment	25	70	30	51,60	50	50	11,431
2	Control	25	90	40	58,80	60	60	13,940

2. Posttest Data Description Experiment Class and Control Class

Table 4.4 Statistical Data Post-test Values Ability to Calculate Multiplication 6-9 Experimentation Class and Control Class

Interval class	**F**	**F k**	**Bottom edge**	**Top edge**
30 - 36	2	2	29.5	36.5
37 - 43	5	7	36.5	43.5
44 - 50	8	15	43.5	50.5
51 - 57	0	15	50.5	57.5
58 - 64	7	22	57.5	64.5
65 - 71	3	25	64.5	71.5
Total	25			

ANALISIS INFERENSIAL

1. Data Normality Test

Data normality test using SPSS version 25 in calculating the normality test produced sig values. (2-tailed) data requirements are normally distributed if the significance obtained from the calculation results is greater than the alpha level of 5% (significance> 0.05).

The results of the normality test of the pretest-posttest data distribution ability to calculate multiplication of the two study samples can be presented in the following table

Table 4.10 Normality Test Results Pretest Experiment Class and Control Class

	Clas s	**Shapiro-Wilk**		
		Statistic	**df**	**Sig.**
Multiplication Ability	Pre Test Eksperimen class	.924	25	.063
	Pre Test control class	.929	25	.082

Table 4.11 Post-test Normality Test Results Experimentation Class and Control Class

	Class	Shapiro-Wilk		
		Statistic	df	Sig.
Multiplication Ability	Post Test Eksperimen class	.924	25	.063
	Post Test control class	.925	25	.066

This proves that both values from the experimental and control classes are greater than the alpha value of 0.05. because the significant value of both classes is greater than the value of alpha α = 0.05 (0.063> α = 0.05) and (0.082> α =

Homogeneity testing criteria are as follows:

a. If probability> 0.05, then Ho is accepted, meaning that the variance is declared Homogeneous. 0.05), and (0.063> α = 0.05 and 0.066> α =

0.05), the fourth class data have a normal distribution.

Homogeneity Test

b. If Probability <0.05, then Ho is rejected, meaning that the variance is expressed heterogeneous

Table 4.12 Pretest Homogeneity Test Results for Experiment Classes and Control Classes

Test of Homogeneity of Variance					
		Levene Statistic	**df1**	**df2**	**Sig.**
Multiplication Ability	Based on Mean	.827	1	48	.368
	Based on Median	.787	1	48	.379
	Based on Median and with adjusted df	.787	1	46.642	.379
	Based on trimmed mean	.922	1	48	.342

Table 4.13 Homogeneity Test Results Post-test Experiment Class and Control Class

Test of Homogeneity of Variance					
		Levene Statistic	**df1**	**df2**	**Sig.**
Multiplication Ability	**Based on Mean**	.003	1	48	.960
	Based on Median	.000	1	48	1.000
	Based on Median and with adjusted df	.000	1	48.000	1.000
	Based on trimmed mean	.003	1	48	.956

Based on the Test of Homogeneity of Variances table shows that the probability value is 0.368> α = 0.05 and 0.960> α = 0.05, then Ho is accepted. It can be concluded, that the sample class both pre-test and post-test has a probability> 0.05, meaning that the variance of the two samples is declared homogeneous.

HYPOTHESIS TESTING

Independent Sample Test

		Levene's Test for Equality of Variances				
		F	**Sig.**	**t**	**df**	**Sig. (2-tailed)**
Multiplication Ability	**Equal variances assumed**	.003	.960	6.902	48	.000
	Equal variances not assumed			6.902	47.997	.000

Based on table 4.14 Independent Samples test (Hypothesis test) shows that the probability value (significance) is 0,000. Because the significance value of 0.000 <α

= 0.05, with the conference to the results of t arithmetic> t table (6.902> 1.675) then Ho is rejected. This proves that there is an influence of the use of Jarimatika method on the ability to calculate multiplication of third grade students.

IV. DISCUSSION

This research was conducted at SDN Karawang Wetan V located in East Karawang sub-district, Karawang district. The use of Jarimatika method in this study can bring up concrete objects as a tool to complete multiplication count operations. The development of third grade students is in line with the opinion of J. Piaget (in Sri Esti Wuryani, 2006: 74) still in the stage of concrete operations in the cognitive development of children. Children are still related to things that are still concrete. Jarimatika method gives rise to concrete objects as a tool to complete multiplication count operations. Making it easier for students to understand the material compared to memorization methods. Research conducted can prove that the use of Jarimatika method affects the ability to count multiplication of students. This is evidenced by the increase in the value of the multiplication results in students after the Jarimatics method is applied which can be seen in the posttest results of the experimental class. There was an increase of 30% from the pretest value (before being treated by the Jarimatika method) compared to the posttest value (after being given the Jarimatika method).

When learning takes place the learning system that is used is by using the Jarimatika method. The use of the Jarimatika method is expected that students can improve their multiplication skills faster and with the right answers. Learning is also student-centered, the teacher is only a facilitator for students solving multiplication calculation problems, as illustrated in the picture below. Broadly speaking, the conditions of the implementation of the learning process by using the Jarimatika method that is preceded by learning the operations of counting numbers there are addition, subtraction, multiplication and division. Then students are given an understanding of the basic multiplication calculation material. After that students are introduced to the use of the Jarimatika method to solve multiplication operation problems for 6 - 9, both from the drawing of the symbol using fingers to the steps of finger fingers operation. The teacher as a facilitator when students do learning activities in class. The teacher only gives examples and students who carry out activities according to the teacher's direction. At the end of the core lesson activity, the teacher provides material reinforcement and direction and evaluates.

Learning in the control class is done by conventional learning. The method used is lecture, question and answer and assignment. In conventional learning the teacher explains the material then students are given the opportunity to complete the multiplication calculation problem. Then the teacher gives a student worksheet. The teacher gives an opportunity to ask students about things that are not yet understood. Learning with a conventional approach makes students just sit quietly listening to the teacher's explanation so that students become inactive in the learning process. This results in students being less able to accept the material being taught, thus affecting the learning outcomes that are less than optimal.

Learning by using the Jarimatika method can increase the speed of numeracy multiplication 6 - 9, while also increasing the ability to count multiplication in students. Wulandani (2008: 7) which states that Jarimatika provides arithmetic visualization, this makes it easy for children to do it. Evidenced by the comparison of the length of time spent on the pretest and posttest questions on students. In the work of pretest questions with 10 items students are able to

complete in less than 60 minutes. But after the Jarimatics method is applied students tend to be faster in working on posttest questions with approximately 30 minutes with the same number of questions.

After testing the above hypotheses, it is found that there is a difference between the results of the numeracy multiplication using the Jarimatics method is higher or better than the results of the multiplication numeracy ability with conventional learning. Based on the research data obtained, it shows that the value of the experimental class and the control class are different. With the final grade of the experimental class 81.60 higher than the average value of the control class of 59.20. Also based on the results of the calculation of the hypothesis test shows that the probability value (significance) is 0,000. because the significance value is 0.000 <α

= 0.05, then Ho is rejected. This proves that there is an influence of the use of Jarimatika method on the ability to count multiplication in students.

V. CONCLUSION

Based on the results of research and data analysis, it can be concluded that the use of Jarimatika method affects the ability to count multiplication in class III students at SDN Karawang Wetan V. This is evidenced by the increase in the value of multiplication results in students after the Jarimatika method can be seen in the posttest results experimental class. There was an increase of 30% from the pretest value (before being treated by the Jarimatika method) compared to the posttest value (after being given the Jarimatika method).

This study proves that there is a difference between the results of multiplication counting skills using the Jarimatics method is higher or better than the results of the ability to calculate multiplication with conventional learning. Based on the posttest results, it is found that the average multiplication ability in students using the Jarimatika method (experimental class) is higher than the average multiplication ability in students who are taught with conventional learning (control class). The average pretest value obtained by the experimental class is 51.60 The average pretest value of the control class is 58.80. After taking action on both classes, the average experimental class posttest is 81,60 and the control class is 59,20.

VI. SUGGESTION

So that students can improve their poetry writing skills, the writer gives the following suggestions:

1. The teacher should use the Jarimatika method in the learning process to improve the ability to count multiplication
2. Jarimatika method really needs to be applied to mathematics learning, especially in multiplication operations.
3. For researchers can be used as science and can be further enhanced in the ability to count multiplication in students. In addition, further research is needed to determine the ability to count multiplication by using the Jarimatika method to other students.

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