Jurnal WANJAMBEY : *Journal of Islamic Education*
E-ISSN: 2722-9505
P-ISSN : 2722-9661
Vol. 6 No. 1, Juni 2025

THE EFFECT OF USING THE JARIMATIKA METHOD AND THE PYTHAGOREAN MULTIPLICATION TABLE ON SOLVING MATHEMATICAL CONCEPTS OF MULTIPLICATION OPERATIONS

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ABSTRACT

This study aims to determine the effect of students' numeracy skills by using the jaritmatika method and the Pythagorean multiplication table on student learning outcomes significantly in mathematics lessons on student multiplication operations. The method used in this research is the *quasi* experimental method of experimental research which is basically the same as cause-and-effect research but is carried out using pseudo-experimental methods. This research was conducted at SDN Sungai Jingah 5 with saturated sampling of grade III. The results showed that the numeracy skills of experimental grade students using the jaritmatika method and tables can be seen from the average results of 82.13 are in the "Very Good" qualification, while the numeracy skills of control grade students using the interactive discussion method 73.87 are in the "Good" qualification. Based on the calculation with the Independent Simple T Test "T Test" with asymp, Sig (2-tailed) is 0.041, because 0.041 <0.05 then H $_0$is rejected and H $_a$is accepted so it can be concluded that there is a significant difference in the learning outcomes of the ability to count multiplication of the experimental grade (using the jaritmatika method and table) and the control grade (using interactive discussions). The implication of this research can be used as an alternative method of learning mathematics calculation for elementary school students.

Keywords: Jarimatika Method, Pythagorean Multiplication Table, Multiplication Counting Operation

ABSTRAK

Penelitian ini bertujuan untuk mengetahui pengaruh kemampuan berhitung siswa dengan menggunakan metode jaritmatika dan tabel perkalian Pythagoras terhadap hasil belajar siswa secara signifikan pada pelajaran matematika materi operasi perkalian siswa. Metode yang digunakan dalam penelitian ini adalah metode *quasi* eksperimen penelitian percobaan (experimental) yang pada dasarnya sama dengan penelitian sebab-akibat namun namun dilakukan dengan menggunakan metode eksperimen semu. Penelitian ini dilakukan pada SDN Sungai Jingah 5 dengan sampling jenuh kelas III. Hasil penelitian menunjukkan bahwa kemampuan berhitung siswa kelas eksperimen dengan menggunakan metode jaritmatika dan table dapat dilihat dari hasil rata-rata yaitu 82,13 berada pada kualifikasi " Amat Baik ", sedangkan kemampuan berhitung siswa kelas kontrol dengan menggunakan metode diskusi interaktif 73,87 berada pada kualifikasi " Baik". Berdasarkan perhitungan dengan Uji Independent Simple T Test "Uji T" dengan asymp,Sig (2-tailed) adalah 0,041,karena 0,041<0,05 maka H_0 ditolak dan H_a diterima sehingga dpaat disimpulkan bahwa terdapat perbedaan yang signifikan hasil belajar kemampuan berhitung perkalian kelas eksperimen (menggunakan

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metode jaritmatika dan table) dan kelas control (menggunakan diskusi interaktif). Implikasi dari penelitian ini dapat dijadikan alternatif metode pembelajaran hitung matematika siswa Sekolah Dasar.

Kata Kunci: Metode Jarimatika, Tabel Perkalian Pythagoras, Operasi Hitung Perkalian

INTRODUCTION

Mathematics is a science that has an important role in shaping the thinking of students, because in mathematics students are required to have reasonable, regular, analytical thinking skills along with problem-solving skills. Various efforts have been made by teachers when developing the skills of students when providing understanding of mathematics subjects[1] . However, the results that are dreamed of are not optimal and the learning and teaching process is not encouraging and tends to be bored by students[2] . Counting is a fundamental part of mathematics that cannot be separated from everyday human life. Not only at the elementary school level the ability to count is also needed up to the college level. Mathematics trains students to think logically, critically, systematically, and creatively[3] .

There are a number of numeracy skills that primary school students need to have and master, one of which is the ability to count basic multiplication. Basic multiplication is an ability in mathematics that must be learned. One of them is Multiplication. Learning basic multiplication has existed since grade II of elementary school, but there are many difficulties in teaching mathematics multiplication operations. Difficulty in calculating multiplication can be expressed as a situation in the learning process which is symbolised by the existence of difficulties or obstacles in it when achieving mathematics learning goals. The difficulty that students experience when completing mathematics is not understanding the concept, difficulty in understanding the mathematical concept of multiplication tables causes students to have

[1]M. A. R Pitasari, A Zainudin, dan N Laila, "Pengaruh Penggunaan Media Tabel Perkalian dan Pembagian terhadap Hasil Belajar Siswa Pelajaran Matematika Kelas III di Madrasah Ibtidaiyah Nurus Syakur," *Jurnal Review Pendidikan dan Pengajaran* 6, no. 3 (2023): 580–86, https://doi.org/10.31004/jrpp.v6i3.19151; Azis Azis, "Pengaruh Kecerdasan Emosional Terhadap Prestasi Belajar Matematika Siswa SMP Negeri 1 Kapontori," *Square : Journal of Mathematics and Mathematics Education* 3, no. 2 (2021): 81–97, https://doi.org/10.21580/square.2021.3.2.7567; Ririn Aprianita, "Penerapan Metode E-Tutor Sebaya dalam Pembelajaran Matematika di Masa Pandemi Covid-19," *EDUMAT : Jurnal Edukasi Matematika* 12, no. 1 (2022): 12–20, https://doi.org/10.53717/edumat.v12i1.258; Jami Ahmad Badawi, Ratih Purnama Pertiwi, dan Sri Enggar Kencana Dewi, "Pengaruh Penggunaan Model Pembelajaran Air (Auditory, Intellectualy, Repetition) Terhadap Hasil Belajar Mata Pelajaran Matematika Pada Siswa Kelas IV SDN Nusa Tenggara," *Jurnal Riset Madrasah Ibtidaiyah (JURMIA)* 2, no. 2 (2022): 209–19, https://doi.org/10.32665/jurmia.v2i2.322.

[2]Ratna Wiidianti Utami, Bakti Toni Endaryono, dan Tjipto Djuhartoni, "Kemampuan Peserta Didik dalam Menyelesaikan Soal Cerita Matematika," *Faktor: Jurnal Ilmiah Kependidikan* 5, no. 3 (2018): 187–92, http://dx.doi.org/10.30998/fjik.v5i3.2719.

[3]Kadek Suarca, Soetjiningsih Soetjiningsih, dan IGA. Endah Ardjana, "Kecerdasan Majemuk pada Anak," *Sari Pediatri* 7, no. 2 (2016): 85, https://doi.org/10.14238/sp7.2.2005.85-92.

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difficulty when solving problems given by their teachers .[4]

In addition to not understanding the next concept is that students have difficulty in the operation counting multiplication is difficult to teach counting skills this is due to the use of counting operations such as subtraction, addition and division, this results in many students experiencing errors when counting[5] . Problem solving is the application of conceptualisation and skills[6] . The growth of indicators on problem solving is stated for students who do not continue their work when working on problems. the difficulty of problem solving in story problems states that students cannot interpret the sentences in the story description and do not determine the stages of solving the problem correctly so that they cannot solve the problem correctly .[7]

It is not easy when implementing the teaching experienced when getting an understanding of the learning given by the teacher, because the teacher only explains one-way learning in the pattern, and the methods used tend to memorise and lecture methods and the teacher only holds on to the guidebook, and still uses concepts and learning activities are still monotonous and pay less attention to student skills, as a result students have difficulty in understanding and lack of interest in participating in teaching mathematics. In addition to the difficulty in understanding the teaching they are also charged with mathematical symbols which are considered not easy to understand and provide so many problems. So that students find it difficult to understand the learning of arithmetic they are also difficult in solving the questions given by the teacher .[8]

Third grade students of SDN Sungai Jingah 5 on average do not understand basic multiplication and the concept of basic multiplication, many students are less able to calculate

[4]Novitasari Ballo, "Perhitungan Matematika Dasar Berbasis Multimedia Menggunakan Metode Jarimatika," *Jurnal Teknologi Terpadu* 2, no. 2 (2017), https://doi.org/10.54914/jtt.v2i2.53.

[5]Risha Ardhanty, Mila Karmila, dan Suyitno Suyitno, "Keefektifan Model Make a Match Berbantu Media Tabel Perkalian terhadap Motivasi Belajar Matematika," *Journal for Lesson and Learning Studies* 2, no. 3 (2019): 361–69, https://doi.org/10.23887/jlls.v2i3.19510.

[6]Pitasari, Zainudin, dan Laila, "Pengaruh Penggunaan Media Tabel Perkalian dan Pembagian terhadap Hasil Belajar Siswa Pelajaran Matematika Kelas III di Madrasah Ibtidaiyah Nurus Syakur."

[7]D. R Amalia, F. Chan, dan M Sholeh, "Analisis Kesulitan Siswa Belajar Operasi Hitung Perkalian Pada Pembelajaran Matematika di kelas IV," *Jurnal Pendidikan Dan Konseling (JPDK)* 4, no. 3 (2022): 945–57, https://doi.org/10.31004/jpdk.v4i3.4549; Fitriadi Fitriadi dan Yanti Fitria, "Pengembangan Lembar Kerja Peserta Didik (LKPD) Pembelajaran Matematika Berbasis Metode Guided Discovery untuk Meningkatkan Kemampuan Pemecahan Masalah Siswa Sekolah Dasar," *Jurnal Inovasi Pendidikan dan Pembelajaran Sekolah Dasar* 6, no. 1 (2022): 265–265, https://doi.org/10.24036/jippsd.v6i1.114807; F Febriani, M Tawil, dan SS Sari, "Pengaruh Model Pembelajaran Berbasis Masalah terhadap Keterampilan Pemecahan Masalah Peserta Didik dalam Pembelajaran Fisika Ditinjau Dari Gender," *Al-Musannif* 3, no. 2 (2021).

[8]Fitri Hamidah, Andas Nida Khoffiya, dan Aurellia Faradita Putri, "Analisis Penggunaan Media Pembelajaran Jaritmatika pada Mata Pelajaran Matematika di Sekolah Dasar," dalam *Proceedings Conference of Elementary Studies* (Malang: Universitas Muhammadiyah Malang, 2022).

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the multiplication of many students who do not understand the basic concepts of multiplication. According to the results of interviews and observations of third grade teachers at SDN Sungai Jingah 5, Banjarmasin, that the part that third grade students face in learning mathematics is the lack of understanding of the multiplication calculation operation, in addition to this, students also experience difficulty in each stage of the calculation. So that the conceptualisation is not understood and the learning provided by the teacher is not delivered correctly. The method used in the classroom is the rote method, which students only memorise so that students only memorise and lack understanding of the basic multiplication concept .[9]

Nowadays, many ways of calculating have been developed, each of which is used in the learning process. All students have the right to learn the techniques in a learning method, so that students are rich in knowledge about a technique in the learning method. Examples of methods that have been developed in teaching mathematics, especially in multiplication operations, are when using the jarimatika method and multiplication tables[10] . The jarimatika method is a method or way of teaching counting skills for children when enabling fingers to be a tool in the calculation stage. That way it is expected that the jarimatika method can develop the activeness and achievement of learning Mathematics. However, in the use of this jarimatika method, students must first understand multiplication 1-5 in order to make it easier for students to learn multiplication calculations. Pythagorean multiplication table is a learning media on the symbols of numbers .[11]

The Jarimatika method and the pythagorean multiplication table are options that can be used for teachers in mathematics teaching so that students can understand more clearly in mathematics lessons based on real and visible facts, and make it easier for students when trying to understand the learning of multiplication. Therefore, the stages of teaching the material of the multiplication calculation process in grade III SDN Sungai Jingah 5, in the new school year or the following year can improve the learning of mathematics multiplication operation material when using the jarimatika method and using the phytagorean multiplication table. The application of these methods can have a positive impact on students' multiplication counting

[9]Andi Quraisy dkk., "Pelatihan Penggunaan Metode Jaritmatika dan Perkalian Cepat Bagi Siswa SMP," *Jurnal Abdimas Indonesia* 2, no. 2 (2022): 286–93, https://doi.org/10.53769/jai.v2i2.248.

[10]Pitasari, Zainudin, dan Laila, "Pengaruh Penggunaan Media Tabel Perkalian dan Pembagian terhadap Hasil Belajar Siswa Pelajaran Matematika Kelas III di Madrasah Ibtidaiyah Nurus Syakur."

[11]Pegi Putri Lismayana, Nora Surmilasari, dan Jayanti Jayanti, "Pengaruh Media Tabel Perkalian Pintar (TAKALINTAR) terhadap Hasil Belajar Matematika Siswa Kelas III SD Negeri 95 Palembang," *Didaktik : Jurnal Ilmiah PGSD STKIP Subang* 9, no. 3 (2023): 270–82, https://doi.org/10.36989/didaktik.v9i3.1417.

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skills. The jarimatika method and the pythagorean multiplication table are a choice of teaching methods that can be used so that students can better understand multiplication, and can make it easier for students when understanding multiplication lessons.

RESEARCH METHODS

The type of research used is field research and uses a quantitative approach that is the presentation of a fact, describing with statistics in stating the relationship between variables. The researcher brings together some of the data needed and examines it with the jarimatika method and the phytagorean multiplication table on the ability to calculate the multiplication counting operation of grade III SDN Sungai Jingah 5. This research uses an experimental research experiment (experimental) which is fundamentally similar to cause-and-effect research but is done by manipulating the cause variable by using the *quasi* experiment method, quasi experiment is almost similar to an experiment. The difference in using subjects is that in quasi experiments, random assignment is not carried out but uses existing classes. So that in this study there are 2 classes, namely the control grade and the experimental grade .[12]

The study used a *pretest-posttest* design, each student in the grade was given a pretest to determine the initial ability and used a *posttest* for the final ability. There are two groups in the formation of this research design, namely the control group and the experimental group. In this study what is seen is the effect of two variables, namely the effect of learning results using the jarimatika method and the jarimatika method and the pythagorean multiplication table as the independent variable (X) and the ability to calculate the multiplication calculation operation of grade III students at SDN Sungai Jingah 5 as the dependent variable (Y). There is a hypothesis in this study $H_a$and $H_{(0)}$, $H_a$means that there is an influence of jarimatika method and pythagorean multiplication table on the completion of mathematical concepts of multiplication arithmetic operations to grade III students at SDN Sungai Jingah 5. While H_0means that there is no influence of jarimatika method and pythagorean multiplication table on the completion of mathematical concepts of multiplication arithmetic operations to grade III students at SDN Sungai Jingah 5.

The population in this study were grade III students of SDN Sungai Jingah 5 totalling 92 students, in this study using *nonprobability sampling* techniques using *purposive sampling*,

[12]Sugiyono, *Metode Penelitian Kuantitatif, Kualitatif dan R & D*, 28 ed. (Bandung: Alfabeta, 2018).

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because it takes into account the characteristics and factors of certain factors such as: number, student intelligence and others[13] . The grade used was grade III A as an experimental grade with a sample of 30 students and grade III B as a dick grade with a sample of 30 students.

RESEARCH RESULTS AND DISCUSSION

Pretest description of students in experimental and control classes

The pretest data is used as the initial ability of students in the experimental grade or in the control grade. The initial ability of students in the experimental grade and control grade. The total distribution of students who took the initial ability test can be seen in the table below.

Description of student learning outcomes in the experimental grade

Data on *pre-test* results in the Experiment grade can be seen in the distribution below:

Table 1 Percentage of Pretest Score Qualification in Experimental Classes

No.	Value	Description	Frequency	Percentage %
1	80 - 100	Very good	3	10
2	66 - 79	Good	7	23,33
3	56 - 65	Good enough	2	6,67
4	46 - 55	Less	6	20
5	0 - 45	Very Less	12	40
	Total		**30**	**100**

According to Table 1, it can be seen that in the experimental grade there were 3 students who were included in the "Very good" qualification or 10%, students who got the "Good" score qualification were 7 people or 23.33%, students who got the "Good Enough" score qualification were 2 people or 6.67%, students who got the "Lack" score qualification were 6 people or 20%, students with the "Very Lack" score qualification were 12 people or 40%.

Description of student learning outcomes in the Control grade on the *Pre-Test*

Pre-test data in the control grade will be presented in the following distribution:

Table 2. Percentage Qualification of *Pre-test* Score in Control Class

No.	Value	Description	Frequency	Percentage %
1	80 - 100	Very good	2	6,67

[13]Sugiyono.

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2	66 - 79	Good	7	23,33
3	56 - 65	Good enough	2	6,67
4	46 - 55	Less	7	23,33
5	0 - 45	Very Less	12	40
	Total		**30**	**100**

According to Table 2. it was found that in the control grade there were 2 students who were included in the "Very good" qualification or 6.67%, students who got the "Good" score qualification were 7 people or 23.33%, students who got the "Good Enough" score qualification were 2 people or 6.67%, students who got the "Lack" score qualification were 7 people or 23.33%, students with the "Very Lack" score qualification were 12 people or 40%.

***Posttest* description of students in experimental and control classes**

Description of *Post-Test* Results of Experimental grade students

The *posttest* was done after the learning ended. *Posttest* was conducted in experimental and control classes with a total of 30 students each. The total distribution of students who took the *posttest* can be seen in the table below:

Table 3. Percentage Qualification of *Post-Test* Score in Experimental Classes

No.	Value	Description	Frequency	Percentage %
	180 - 100	Very good	21	70
	266 - 79	Good	5	16,67
	356 - 65	Good enough	1	3,33
	446 - 55	Less	2	6,67
	50 - 45	Very Less	1	3,33
	Total		**30**	**100**

According to table 3. it can be seen that in the experimental grade there were 21 students who were included in the "Very good" qualification or 70%, students who obtained the "Good" score qualification were 5 people or 16.67%, students who obtained the "Good Enough" score qualification were 1 person or 3.33%, students who obtained the "Lack" score qualification were 2 people or 6.67%, students with the "Very Lack" score qualification were 1 person or 3.33%.

Description of *Post-Test* Results of Control Class Learners

In the Control grade, the *Pre-test* results data will be presented in the following distribution:

Table 4. Percentage Qualification of Post-Test Score in Control Class

No.	Value	Description	Frequency	Percentage %
1	80 - 100	Very good	15	50

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2	66 - 79	Good	9	30
3	56 - 65	Good enough	3	10
4	46 - 55	Less	1	3,33
5	0 - 45	Very Less	2	6,67
Total			**30**	**100**

Based on table 4. it can be stated that in the control grade there were 15 students who were included in the "Very good" qualification or 50%, students who got the "Good" score qualification there were 9 people or 30%, students who got the "Good Enough" score qualification there were 3 people or 10%, students who got the "Lack" score qualification there were 1 person or 3.33%, students with the "Very Lack" score qualification there were 2 people or 6.67.

Analysis of learners' *Pretest* Results.

From the results of the pretest data, the calculation of the average, standard deviation and variance of students can be seen in the description of the results of the student pretest can be seen in the table:

Table 5. Description of Students' Pre-Test Results

Class	Average	Standard Deviation	Variance
Experiment	51,67	18,724	350,575
Control	50,77	17,498	306,185

Table 5 illustrates that the pretest variance value, average, and standard deviation, students in the experimental grade and control grade are not the same and have a difference. The table shows that the average value of the pretest results of experimental and control grade students has a difference of 0.9. In order to be clearer, it is tested with a t-test. Furthermore, the Normality Test was carried out in order to know the normality of the data distribution using the *Kolmogrov-Smirnov* test. And a summary of the normality test results can be shown in the following table:

Table 6. SPSS output version 21 *Student Pre-test* Normality Test *One-Sample Kolmogorov-Smirnov Test*

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Class	Kolmogorov-smirnov		Sig Level	Conclusion
	N	Probability Number		
Experiment	30	0,660	0,05	Data is normally distributed
Control	30	0,324		Data is normally distributed

According to table 6, it is known that the value at the significant level of the experimental grade student value data is 0.660 then 0.660> 0.05 so in the experimental grade the data is normally distributed while the sig of the control grade student value data is 0.324> so that in the control grade the data is normally distributed. After the data is known to be normally distributed, the test continues on the homogeneity test. This test intends to understand the skills of students in the experimental grade and control grade have the same nature or not. To make it clearer, it is illustrated in the table below:

Table 7. SPSS 21 Output Homogeneity Test PreTestTest of Homogeneity of Variances

Class	N	Probability Number	Conclusion
Experiment	30	0,612	Homogeneous
Control	30		

According to table 7, it can be understood that at the level of $\alpha = 0.05$, the sig. value in the *Test of Homogenetty of Variancee* table in the sig column is 0.612, which means 0.612> 0.05. This means that the two classes have the same characteristics. The data is homogeneous and the distribution is normal so the different test used is the *Independent-Sample T Test* by getting a significance result of 0.612. Based on table 8. t test calculation used *Independent-Sample T Test*. The calculated value is 0.848> 0.05, so H_0 is accepted and H_a is rejected. So it can be seen that there is no effect on the *pretest* results of experimental and control grade students. The *posttest* was done after the learning ended.

Analysis of Students' *Pretest* Results

Data on the calculation of the mean, standard deviation and variance of student posttest results and an overview of student *posttest* results can be seen in the table below:

Table 8. Mean, Standard Deviation, and Variance

Class	Average	Standard Deviation	Variance

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Experiment	82,13	15,449	238,671
Control	73,87	15,154	229,637

Table 8 states that the mean value, standard deviation, and variance of student learning outcomes in the experimental grade and control grade are not the same. The table explains that the average value of the pretest results of experimental and control grade students has a difference in value of 8.26. To make it clearer, it is tested in a different test. Furthermore, the Normality Test was carried out in order to understand the normality of the data distribution using the *Kolmogrov-Smirnov* test at the 0.05 significance level. The summary of the normality test results can be seen in the table below:

Table 9. *Post-Test* Normality *Test*

Class	**Kolmogorov-smirnov**		**Sig Level**	**Conclusion**
	N	**Probability Number**		
Experiment	30	0,461	0,05	Data normally distributed
Control	30	0,839		Data normally distributed

Table 9 above explains the normality test on the use of the *Kolmogrov- Smirnov Test* spss using SPS version 21. According to the table, the value in the significant level of the experimental grade student value data is 0.461 then 0.461> 0.05 so in the experimental grade the data is normally distributed while the sig of the control grade student value data is 0.369> 0.05 so in the control grade the data is normally distributed. After the data is known to be normally distributed, the test continues using the homogeneity test. This test intends to understand whether the students in the experimental grade and control grade have the same characteristics or not. For more details see the table below:

Table 10: *Post-Test Homogeneity* (*Test of Homogeneity of Variances)*

Class	**N**	**Probability Number**	**Conclusion**
Experiment	30	0,723	Homogeneous
Control	30		

According to table 10, it can be stated that at the α = 0.05 level, the sig. value in the *Test* of *Homogenetty of Variancee* table in the sig column is 0.723, which means 0.723.

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> 0,05. This means that both classes are homogeneous. After the data is known to be normally distributed, the test continues on the homogeneity test. This test intends t o understand the skills of students in the experimental grade and control grade have the same nature or not. Calculation of the t test using the *Independent-Sample T Test*. According to the results of the calculation obtained the calculated value of 0.041< 0.05, at the significance level α 0.05, then H_a is accepted and H_0 is rejected. So it can be concluded that there is an effect of using the jarimatika method and the pythagorean multiplication table on the *post-test* results of students in the experimental grade and control grade in the subject of multiplication material in grade III SDN Sungai Jingah 5.

Teaching methods are the way teachers explain learning materials to students in the KBM (teaching and learning activities) environment. The learning stage is the stage of sharing knowledge by the teacher to students, which requires the right method so that the knowledge explained can be received properly. In short, from here it can be seen that the learning method in the KBM process is important, in addition to the main role of the teacher when sorting out the teaching method that is adjusted to the character of the students[14] . on optimising the advantages of the learning method used and reducing its shortcomings[15] . Accuracy in choosing learning methods is very important to support learning that takes place in the classroom, jarimatika learning methods and pythagorean multiplication tables can make it easier for students to understand, calculate, and solve problems regarding multiplication and this method is very suitable for students to use because this method can continue to be used to a higher level .[16]

In the experimental grade using the jarimatika method where each student is given a problem and given a problem about multiplication, then together Sam solves the problem and introduces the jarimatika method, as well as

using the jarimatika method as a tool in helping to solve problems. While in the control grade using the interactive discussion method, students are given problems and students are divided into groups and then students discuss in solving the problem together .[17]

[14]Suarca, Soetjiningsih, dan Ardjana, "Kecerdasan Majemuk pada Anak."

[15]Tika Hardianti, Atiaturrahmaniah Atiaturrahmaniah, dan Muh Yazid, "Pengaruh Teknik Jaritmatika terhadap Hasil Belajar Matematika Materi Penjumlahan dan Perkalian 1-10," *Prima Magistra: Jurnal Ilmiah Kependidikan* 2, no. 1 (2021): 116–23, https://doi.org/10.37478/jpm.v2i1.879.

[16]Linar, "Peningkatan Hasil Belajar Matematika Materi Perkalian Melalui Metode Latihan (Drill) di Kelas IV SD Negeri 72 Kendari," *Amanah: Jurnal Amanah Pendidikan dan Pengajaran* 2, no. 3 (2021): 234–43.

[17]Lismayana, Surmilasari, dan Jayanti, "Pengaruh Media Tabel Perkalian Pintar (TAKALINTAR) terhadap Hasil Belajar Matematika Siswa Kelas III SD Negeri 95 Palembang."

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According to the test results that have been described, the pretest results state the initial ability of students, the average student score of the initial test results shows that in the experimental grade with a large 51.67, which is in less qualification. But after being treated using the jarimatika method and the pythagorean multiplication table, the posttest results showed different average scores. The posttest results functioned to understand the learning outcomes of students. The results stated that the average value of the posttest of experimental grade students was 82.13 which was in very good qualification, higher than the average value in the control grade, the control grouping value was 73.87 which was in good qualification. The difference in the average results of the posttest was then carried out a different test.

The results of the experimental grade normality test in calculations using SPSS version 21, the significance level of the normality test is $\alpha = 0.05$. based on the cvbn table stated sig. in the Test Of Normality table. The data of the experimental grade students' scores is 0.461 so 0.641> 0.05 so that the data is normally distributed, while the sig value in the control grade is 0.389 so, 0389> 0.05 so that the data is normally distributed. Because both data are normally distributed, the next step is to carry out the homogeneity test. The results of the homogeneity test in the calculation using SPSS version 21, the significance level of the homogeneity test is $\alpha = 0.05$. in the homogeneity test of the two data is 0.723 then 0.723> 0.05 so the two data are declared to have the same nature.

Based on the results of researcher testing using SPSS version 21, with t test testing it is stated that the sig. value in the study is 0.041 so 0.041 <0.05 in the significance level $\alpha= 0.05$ so Ha is accepted and H0 is rejected. So it can be known that there is a significant effect of using the jarimatika method and the pythagorean multiplication table on the learning outcomes of solving the mathematical concept of multiplication operations at SDN Sungai Jingah 5. Which in the experimental grade is given treatment using the jarimatika method and the pythagorean multiplication table, while the control grade uses the interactive dialogue method.

Based on the treatment of the experimental grade and the control grade, there is an inequality in the learning outcomes of students. Based on the results of statistical tests, it can be seen that the average value in the experimental grade increased by 30.46 the average value of the initial test in the experimental grade was 51.67 and the average value of the final test in the experimental grade was 82.13, so it can be stated that the average value in the experimental grade increased. While the average value in the control grade increased by 23.1 from the average value

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of the control grade initial test of 50.77 and in the final test the average value increased to 73.87.

According to the results of the researcher's analysis of the ability to calculate the multiplication of students by using the jarimatika method and the pythagorean multiplication table in the experimental grade by using the interactive discussion method in the control grade, it can be seen that it shows the results of increased learning but the experimental grade by using the jarimatika method and the pythagorean multiplication table states better results than by using the interactive discussion method in the control grade. It can be seen in the average value, where the learning outcomes in the experimental grade show better results than the control grade.

The factor that gives rise to the difference in the average value of the results of the ability to calculate multiplication that is quite significant in the experimental grade with the control grade is the difference in the stages of the learning process. In the jarimatika method and the pythagorean multiplication table, students are guided individually, meaning that the learning process is not taught in groups. Furthermore, students are introduced to the symbols of jarimatika. Learners can directly practice the jarimatika method, and this method does not burden the brain, and the multiplication table is used to check whether the results of the multiplication practice carried out by students obtain the right results. While using the interactive discussion method during the learning process students are divided into several groups and in this method students are the ones who actively ask questions and solve existing problems, as well as conduct discussions in groups and with the teacher.

CONCLUSIONS

Based on the research conducted on the jarit matika method and the multiplication table, it can be concluded that there is a significant effect of using the jarikamtika method and the pythagorean multiplication table on the completion of mathematical concepts of multiplication operations at SDN Sungai Jingah 5. This method can be used as an alternative choice / reference for teachers in the implementation of mathematics learning in materials that contain multiplication in it because this method can improve student learning outcomes.

REFERENCES

Amalia, D. R, F. Chan, dan M Sholeh. “Analisis Kesulitan Siswa Belajar Operasi Hitung Perkalian Pada Pembelajaran Matematika di kelas IV.” *Jurnal Pendidikan Dan Konseling (JPDK)* 4, no. 3 (2022): 945–57. https://doi.org/10.31004/jpdk.v4i3.4549.

E-ISSN: 2722-9505
P-ISSN : 2722-9661
Vol. 6 No. 1, Juni 2025

Aprianita, Ririn. "Penerapan Metode E-Tutor Sebaya dalam Pembelajaran Matematika di Masa Pandemi Covid-19." *EDUMAT : Jurnal Edukasi Matematika* 12, no. 1 (2022): 12–20. https://doi.org/10.53717/edumat.v12i1.258.

Ardhanty, Risha, Mila Karmila, dan Suyitno Suyitno. "Keefektifan Model Make a Match Berbantu Media Tabel Perkalian terhadap Motivasi Belajar Matematika." *Journal for Lesson and Learning Studies* 2, no. 3 (2019): 361–69. https://doi.org/10.23887/jlls.v2i3.19510.

Azis, Azis. "Pengaruh Kecerdasan Emosional Terhadap Prestasi Belajar Matematika Siswa SMP Negeri 1 Kapontori." *Square : Journal of Mathematics and Mathematics Education* 3, no. 2 (2021): 81–97. https://doi.org/10.21580/square.2021.3.2.7567.

Badawi, Jami Ahmad, Ratih Purnama Pertiwi, dan Sri Enggar Kencana Dewi. "Pengaruh Penggunaan Model Pembelajaran Air (Auditory, Intellectualy, Repetition) Terhadap Hasil Belajar Mata Pelajaran Matematika Pada Siswa Kelas IV SDN Nusa Tenggara." *Jurnal Riset Madrasah Ibtidaiyah (JURMIA)* 2, no. 2 (2022): 209–19. https://doi.org/10.32665/jurmia.v2i2.322.

Ballo, Novitasari. "Perhitungan Matematika Dasar Berbasis Multimedia Menggunakan Metode Jarimatika." *Jurnal Teknologi Terpadu* 2, no. 2 (2017). https://doi.org/10.54914/jtt.v2i2.53.

Febriani, F, M Tawil, dan SS Sari. "Pengaruh Model Pembelajaran Berbasis Masalah terhadap Keterampilan Pemecahan Masalah Peserta Didik dalam Pembelajaran Fisika Ditinjau Dari Gender." *Al-Musannif* 3, no. 2 (2021).

Fitriadi, Fitriadi, dan Yanti Fitria. "Pengembangan Lembar Kerja Peserta Didik (LKPD) Pembelajaran Matematika Berbasis Metode Guided Discovery untuk Meningkatkan Kemampuan Pemecahan Masalah Siswa Sekolah Dasar." *Jurnal Inovasi Pendidikan dan Pembelajaran Sekolah Dasar* 6, no. 1 (2022): 265–265. https://doi.org/10.24036/jippsd.v6i1.114807.

Hamidah, Fitri, Andas Nida Khoffiya, dan Aurellia Faradita Putri. "Analisis Penggunaan Media Pembelajaran Jaritmatika pada Mata Pelajaran Matematika di Sekolah Dasar." Dalam *Proceedings Conference of Elementary Studies*. Malang: Universitas Muhammadiyah Malang, 2022.

Hardianti, Tika, Atiaturrahmaniah Atiaturrahmaniah, dan Muh Yazid. "Pengaruh Teknik Jaritmatika terhadap Hasil Belajar Matematika Materi Penjumlahan dan Perkalian 1-10." *Prima Magistra: Jurnal Ilmiah Kependidikan* 2, no. 1 (2021): 116–23. https://doi.org/10.37478/jpm.v2i1.879.

Linar. "Peningkatan Hasil Belajar Matematika Materi Perkalian Melalui Metode Latihan (Drill) di Kelas IV SD Negeri 72 Kendari." *Amanah: Jurnal Amanah Pendidikan dan Pengajaran* 2, no. 3 (2021): 234–43.

Lismayana, Pegi Putri, Nora Surmilasari, dan Jayanti Jayanti. "Pengaruh Media Tabel Perkalian Pintar (TAKALINTAR) terhadap Hasil Belajar Matematika Siswa Kelas III SD Negeri 95 Palembang." *Didaktik : Jurnal Ilmiah PGSD STKIP Subang* 9, no. 3 (2023): 270–82. https://doi.org/10.36989/didaktik.v9i3.1417.

Pitasari, M. A. R, A Zainudin, dan N Laila. "Pengaruh Penggunaan Media Tabel Perkalian dan Pembagian terhadap Hasil Belajar Siswa Pelajaran Matematika Kelas III di Madrasah Ibtidaiyah Nurus Syakur." *Jurnal Review Pendidikan dan Pengajaran* 6, no. 3 (2023): 580–86. https://doi.org/10.31004/jrpp.v6i3.19151.

Quraisy, Andi, Ilhamuddin Ilhamuddin, Abdul Gaffar, Randy Saputra Mahmud, Andi Alim

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P-ISSN : 2722-9661
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Syahrir, dan Muhammad Muzaini. "Pelatihan Penggunaan Metode Jaritmatika dan Perkalian Cepat Bagi Siswa SMP." *Jurnal Abdimas Indonesia* 2, no. 2 (2022): 286–93. https://doi.org/10.53769/jai.v2i2.248.

Suarca, Kadek, Soetjiningsih Soetjiningsih, dan IGA. Endah Ardjana. "Kecerdasan Majemuk pada Anak." *Sari Pediatri* 7, no. 2 (2016): 85. https://doi.org/10.14238/sp7.2.2005.85-92.

Sugiyono. *Metode Penelitian Kuantitatif, Kualitatif dan R & D*. 28 ed. Bandung: Alfabeta, 2018.

Utami, Ratna Wiidianti, Bakti Toni Endaryono, dan Tjipto Djuhartoni. "Kemampuan Peserta Didik dalam Menyelesaikan Soal Cerita Matematika." *Faktor: Jurnal Ilmiah Kependidikan* 5, no. 3 (2018): 187–92. http://dx.doi.org/10.30998/fjik.v5i3.2719.