

Correlation of Memory Ability with Learning Outcomes Students at Elementary School

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Abstract

This study aims to examine the correlation of students' memory skills to the mathematics learning outcomes of fourth grade students at SDN Jurumudi 4, Tangerang city. The method used is quantitative correlation. The data analysis technique uses a significance of 0.05 with a prerequisite test consisting of a normality test, linearity test, hypothesis testing (product moment person correlation and correlation coefficient significance test with the t test). The results of this study: (1) students' memory skills through descriptive statistical analysis found that there were 32 students in grade IV C at SDN Jurumudi 4 Tangerang city with an average memory score of 81.09 in the high category. (2) The learning outcomes of students in class IV C at SDN Jurumudi 4 Tangerang city in learning mathematics about fractional material equal to the number of students as many as 32 people with an average score of 76.31 in the high category. (3) The results of hypothesis testing through inferential statistics show that there is a correlation between students' memory skills and the mathematics learning outcomes of fourth-grade students at SDN Jurumudi 4, Tangerang City, with a correlation coefficient (r) of 0.429 and sig.0.014. It can be seen from the table of the level of correlation and the strength of the relationship. between the two variables is at the magnitude of 0.40-0.599 indicating that there is a moderate or sufficient correlation. Furthermore, to test the hypothesis using the correlation coefficient significance test with the t test and the results obtained are $t_{count} > t_{table}$ ($2.601 > 2.042$) the hypothesis is accepted.

Penelitian ini bertujuan untuk menelaah korelasi kemampuan daya ingat siswa terhadap hasil belajar matematika siswa kelas IV di SDN Jurumudi 4 kota Tangerang. Metode yang digunakan adalah kuantitatif korelasi. Teknik analisis data menggunakan signifikansi 0,05 dengan uji perasyarat yang terdiri dari uji normalitas, uji linierlitas, uji hipotesis (korelasi product moment person dan uji signifikansi koefisien korelasi dengan uji t). Hasil dari Penelitian ini : (1) kemampuan daya ingat siswa melalui analisis statistik deskriptif ditemukan bahwa siswa-siswi kelas IV C SDN Jurumudi 4 kota Tangerang berjumlah 32 orang dengan nilai rata-rata kemampuan daya ingat sebesar 81,09 dalam kategori tinggi. (2) Hasil belajar siswa kelas IV C SDN Jurumudi 4 kota Tangerang pada pembelajaran matematika materi pecahan senilai dengan jumlah siswa sebanyak 32 orang nilai rata-rata sebesar 76,31 dalam kategori tinggi. (3) Hasil uji hipotesis melalui statistik inferensial bahwa terdapatnya korelasi kemampuan daya ingat siswa terhadap hasil belajar matematika siswa kelas IV di SDN Jurumudi 4 kota Tangerang dengan koefisien korelasi (r) 0,429 dan sig.0,014, dapat dilihat dari tabel tingkat korelasi dan kekuatan hubungan



antara kedua variabel berada pada besaran 0,40-0,599 dinyatakan terdapatnya korelasi yang sedang atau cukup. Selanjutnya untuk pengujian hipotesis menggunakan pengujian signifikansi koefisien korelasi dengan uji t dan diperoleh hasil thitung > ttabel (2,601 > 2,042) hipotesis diterima.

Keywords: *Correlatio; Students' Memory Ability; Learning Outcomes.*

INTRODUCTION

In the world of education, a person's achievement in learning can be influenced by several factors and teaching methods. In addition, memory ability is also part of the internal factors that come from within students that can affect student achievement in learning. According to Gagne, learning is a combination of behaviorism and cognitivism (Aprida Pane and Muhammad Darwis Dasopang, 2017). When someone does learning activities all the knowledge gained will require memory ability to be able to remember what has been learned, because learning activities cannot be separated from the process of remembering, and vice versa. Memory is an individual's ability to recall information that has been obtained and stored in the brain (Rudi Nofindra, 2019). Memory is closely related to the brain's ability to store various kinds of information, knowledge, events, experiences, all of which are stored in the form of memory.

Students have the ability to remember or memory with such a large capacity. Memory plays a very important role for students in the learning process. Memory is divided into three including sensory memory, short-term memory, and long-term memory (Rudi Nofindra, 2019). The difference between the three types of memory lies in the time when the stimulus occurs and reappears as output. Each student has a different memory. The memory ability possessed by each student can affect the learning outcomes achieved. Memory ability has the most important role in the learning process related to all subjects, especially learning mathematics. Mathematics is a science that produces various formulas and requires an understanding of concepts. The formulas contained in mathematics material are formulas that are not only used for one lesson but the formulas are continuous with one topic to another, to be able to solve problems in mathematics students first remember the formulas and symbols in mathematics, this is the key to solving problems in mathematics. But the fact is that students have difficulty solving these problems due to a lack of understanding based on their ability to remember, especially in the material of fractions worth, the material of fractions worth sometimes makes students confused with the formula that will be used to solve these problems, therefore the role of memory is very important. The sharper the student's memory, the more problems that are easily solved, so that the learning outcomes achieved are also getting better.

If students have low memory ability, it will have an impact on low learning outcomes as well, this risks students being bullied by their peers. Bullying cases related to students' ability to achieve learning outcomes occur in many educational institutions. So to avoid this incident, the memory ability of students must be known by the teacher during the learning process, to achieve success in teaching and learning activities. Knowledge and understanding resulting from students' memory abilities are very useful for achieving brilliant future goals, if students have good memory abilities. Mrs. Miranda Puji Lestari, S.Pd as a homeroom teacher who teaches in class IV C SDN Jurumudi 4 Tangerang city, she said that:

The results of the interview with the fourth grade homeroom teacher, Mrs. Miranda Lestari, S.Pd said:

"The ability to remember is very important in the learning process. Especially in learning math fractions worth, material that at first glance is easy but often students get stuck, this is because it requires good memory skills and gives birth to good understanding as well. The ability to remember is the initial foundation for students in achieving learning outcomes. Students can be said to be good, moderate, or lacking seen from the learning outcomes they have achieved, so far in my teaching activities have not led to the development of students' ability to remember."

From the results of observations, teaching and learning activities of mathematics learning in class IV SDN Jurumudi 4 Tangerang City have not led to the development of memory skills. So that problems were found related to the low ability to remember students. This is also a result of their lack of focus when learning, playing a lot, lack of teacher creativity in developing methods to improve student memory, and not reviewing learning so that it has an impact on learning outcomes that decrease as well. This requires further proof, to find out how strong the relationship or correlation of students' memory ability to learning outcomes, so the researcher conducted a study with the title "Correlation of Students' Memory Ability to Learning Outcomes of Grade IV Students at SDN Jurumudi 4 Tangerang City".

Research Method

This research uses non-experimental quantitative methods with a correlational design. This study has two variables, namely memory ability (x) and learning outcomes (y), these variables will give birth to indicators that will be developed in the form of questions to measure these two variables and the data is analyzed using SPSS IBM 24 statistics. Therefore, this study uses quantitative methods, this is in accordance with the opinion of Creswell (John W Creswell, 2014). Quantitative research is a method of testing, the population of the entire objective theory by testing the relationship between variables. This variable can then be measured with an instrument, so that the data will be in the form of numbers that can be analyzed using statistics. This research was conducted at SDN Jurumudi 4 Tangerang city. The population in this study were all students of SDN Jurumudi 4 Tangerang city with a total of 444 students. The sample taken was 32 students from grade 4 with the sampling technique used nonprobability sampling type Purposive sampling. The research instrument used was an essay test of 5 questions with a rubric 1-3 scoring system and a multiple choice test of 15 questions. The test has passed the validity test, reliability test, question difficulty test, and question differentiator test. The author presents the data from the test results of the test instrument as follows:

Table 1. Outcome Test Instrument Validation Results

Question item	r _{hitung}	r _{tabel}	Criteria
1.	0,330	0,279	Valid
2.	0,498	0,279	Valid
3.	0,149	0,279	Not Valid
4.	0,445	0,279	Valid
5.	0,420	0,279	Valid

Table 2. Reliability Test

Reliability Statistics	
Cronbach's Alpha	N of Items
,620	5

Furthermore, to measure students' memory ability on learning outcomes in mathematics subjects, the data obtained from the distribution of test instruments which will later go through

pre-testing stages, namely validity, reliability, test the difficulty level of the test questions, test the distinguishing power of the questions, test the normality of Kolmogorov-Smirnova, test the linearity, then the Product Moment Person correlation analysis with SPSS aims to determine whether or not there is a relationship and to determine the amount of correlation coefficient is positive or negative and prove the significant level of the relationship between the two variables. Then hypothesis testing will be carried out using significance testing of correlation coefficients with the t test at significance = 0.05.

Result and Discussion of Findings

Memory Ability of Grade IV Students at SDN Jurumudi 4 Tangerang City

From the results of observations and interviews with the homeroom teacher of class IV at the school, problems were found that hampered students in achieving much better success. these problems are related to the memory ability of students who are still relatively low, it is known from the results of interviews that the school has not implemented learning related to memory development. Apart from these factors, this can also arise from within the students themselves, such as playing a lot and not reviewing the material at home. A person's memory ability cannot be equalized, because every human being has a different memory function and has a very large amount of memory, but due to various factors, not everyone can use this capacity to the fullest. Memory is an ability that individuals have to restore what information is taken and stored in the brain (Nofindra, 2019). Sidiarto (Ade Pratiwi Fuji, 2018) argues that memory as a very important element of cognitive function has a strategic role in the process of independence in a person. Makhfudin (Anselmus Yata Mones, 2020) formulates memory indicators including remembering, capturing information, reciting, and memorizing. A person must go through several stages to be able to remember something and to be able to bring it up again.

The stages are as follows namely learning (entering), retention (storing), re-evoking, this relates to re-evoking something in memory (Achiruddin Adnan Saleh, 2018). Memory can be divided into three: sensory memory, short-term memory, and long-term memory, Long term memory or long-term memory is divided into three including (Fadhilah Suralaga, 2021). Declarative knowledge (memorized knowledge or meaningful knowledge), Procedural knowledge (knowledge of a certain procedure), Episode knowledge (knowledge related to time, place, autobiography, events). The memory ability of students can be influenced by two factors including internal factors and external factors. It may happen that each person has a different ability to remember and the nature of memory that each person has is not the same. The nature of memory (memory power) is divided into 4 types including (Idi & Daheri Mirzon Warsah, 2021): a) Simple and fast memory, this kind of memory that a person has makes it quick and easy to store or memorize an impression. b) Broad and reliable memory, individuals who have memories like this, people with memories like this can get a lot of impressions as well as such a wide scope. c) Faithful memory or memory, in this memory the impression (effect) that has been received remains intact when receiving it. d) Obedient memory, in this memory the impression that has been recorded and stored will be reproduced more quickly. Of the various characteristics of memory, each individual does not have the same nature of memory between one individual and another.

The results showed that the descriptive memory ability of fourth grade students at SDN Jurumudi 4 Tangerang city had been carried out according to the procedures in the study. The results of the descriptive analysis of memory ability have been obtained as follows:

Table 3. Descriptive Output of Memory Ability Data

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Daya Ingat	32	33	93	81,09	14,407
Valid N (listwise)	32				

Source: Results of Data Processing with SPSS IBM 24

Based on the descriptive output table of memory ability data, it can be seen that the maximum value is 93 with a minimum value of 33 with an average value of 81.09 with a std. deviation of 14.407. Elementary school age is a phase where children have entered the concrete operational phase. In concrete operational cognitive children experience rapid development. Being in normal circumstances, the ability of children in elementary school age to develop in stages (Leny Marinda, 2020). Students can use their wits well, including in their memory ability. After knowing the minimum value, maximum value, and average value of memory ability, then the data categorization of the memory ability variable is carried out. Before determining the category of the assessment, first calculate the range (R), number of interval classes (K), and class length (p), including:

- a) Range (R) = skor max-min
= 93-33
= 60
- b) Number of Interval Classes (K) = $1 + 3,3 \log n$
= $1 + 3,3 \log 32$
= $1 + 3,3 (1,505)$
= 5,9665 rounded to 6
- c) Interval Class Length (p) = Range: Number of interval classes
= $60 : 6$
= 10

Then after obtaining the range value (R), many classes (K), and class length (p) of the student memory ability variable can be categorized as follows (Sri Wahyuning, 2021):

Table 4. Category of Memory Ability Assessment Score

No.	Class Interval	Categories
1.	33-42	Very Low
2.	43-52	Low
3.	53-62	moderately
4.	63-72	very sufficient
5.	73-82	High
6.	83-93	Very High

Based on the value of the calculation of the mean memory ability of class IV C students of 81.09, which is in the interval 73-82, the memory ability possessed by fourth grade students of SDN Jurumudi 4 Tangerang city is classified as high. Data on students' memory ability is obtained from the results of written tests to hone the power of remembering, from these data it shows that the ability to bring up memories of information is relatively fast. It can be interpreted that from the results of the average assessment of students' memory ability in good condition. this ability is a key to achieving student success in the world of education.

Learning Outcomes of Fourth Grade Students of SDN Jurumudi 4 Tangerang City

According to Rusman, these learning outcomes (Homroul Fauhah, 2021), is a variety of experiences obtained by students covering cognitive, affective, and psychomotor. In addition, the definition of learning outcomes according to Febryananda (Homroul Fauhah, 2021), that is, the

mastery or dominance that students have acquired after students absorb learning experiences. Learning is the main spear in educational endeavors. Without learning, education will not be born in the world. Learning as a process and learning is also a broad container in various fields of science in education. Change is the meaning contained in learning. Therefore, changes that occur in individuals are the result of learning. as for the indicators of learning outcomes put forward by Moore (Homroul Fauhah, 2021), There are three aspects, namely: cognitive, affective, and psychomotor. However, the author is more focused on the cognitive aspect.

According to Henry (Widia Hapnita et al, 2017), There are several individual differences that are most important in learning and remembering, which are as follows: a) Differences in Intelligence, b) Cognitive Styles, c) Learning Strategies, and d) Memory Ability. Some individual differences related to learning and remembering cannot be equalized they have differences from one another. This difference affects the amount or lack of information that is obtained. So if someone has a strong memory, it will signal good integrity as well.

In addition, student learning outcomes can be influenced by several factors, namely internal and external factors. Student learning outcomes in this study lead to mathematics learning. Mathematics has great power to teach a variety of skills and attitudes that people need to live intelligently in their environment and organize as many things as possible in this world (Hasratuddin, 2014). Understanding of mathematics is divided into two types (Dian Novitasari et al., 2015). Instrumental understanding is where a student only knows or remembers mathematical formulas and can use them to solve problems algorithmically. At this level, students cannot apply the formula or it cannot be applied to new situations that are bound. Second, relational understanding is an understanding skill that students can apply not only to know and remember mathematical formulas, but also to solve problems in other situations.

For learning outcome variables obtained from written tests in the form of multiple choice with an assessment range of 1-100. Data on learning outcomes obtained from 32 students were analyzed using descriptive statistics with the results of descriptive statistical output of mathematics learning outcomes worth fractions as follows:

Table 5. Learning Outcome Data Descriptive Output

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Learning Outcomes	32	26	100	76,31	18,564
Valid N (listwise)	32				

Source: Results of Data Processing with SPSS IBM 24

From the results of descriptive analysis of learning outcomes data, the maximum value is 100 with a minimum value of 26 with a mean of 76.31 with a Std. Deviation of 18.564. After knowing the mean value of learning outcomes, the categorization of the learning outcomes variable is then carried out. Before determining the category of the average value, first calculate the range (R), many interval classes (K), and class length (p) as follows:

- a) Range (R) = max - min Score
 = 100 - 26
 = 74
- b) Number of interval classes (K) = $1 + 3,3 \log n$
 = $1 + 3,3 \log 32$

$$\begin{aligned}
 &= 1 + 3,3 (1,505) \\
 &= 1 + 4,9665 \\
 &= 5,9665 \text{ Rounded to } 6 \\
 \text{c) Interval class length (p)} &= \text{Range : Number of interval classes} \\
 &= 74 : 6 \\
 &= 12,3333 \text{ Rounded to } 12
 \end{aligned}$$

Then after obtaining the range value (R), many classes (K), and the length of the interval class (p) of the learning outcomes can be categorized as follows (Sri Wahyuning, 2021):

Table 6. Category of Learning Outcome Assessment Score

No.	Class Interval	Categories
1.	26-37	Very Low
2.	38-49	Low
3.	50-61	moderately
4.	62-74	very sufficient
5.	75-87	High
6.	88-100	Very High

Based on the mean learning outcomes of class IV students of 76.31, it can be said that the mathematics learning outcomes of fractions worth obtained by class IV C students of SDN Jurumudi 4 Tangerang city are in the high category, it can be said that the learning outcomes of class IV C students are in good achievement. Learning outcomes are the spearhead to measure student achievement in learning. From the average results of the assessment of student learning outcomes in good condition or high category. Learning outcomes can be influenced by several factors, one of which is the ability of student memory. The two cannot be separated.

Correlation of Students' Memory Ability with Grade IV Mathematics Learning Outcomes at SDN Jurumudi 4 Tangerang City

Testing in this study uses product moment person correlation. The product moment person correlation aims to determine the relationship and state the magnitude of the relationship between variables. This study uses product moment person correlation because there are only two variables, namely variable X (memory) and variable Y (learning outcomes). Furthermore, to determine the hypothesis in this study, the authors tested the significance of the correlation coefficient with the t test at the significance level = 0.05. The following is the formulation of the hypothesis in this study, namely:

H_0 : There is no correlation between students' memory ability and fourth grade mathematics learning outcomes at SDN Jurumudi 4, Tangerang city..

H_a : There is a correlation between students' memory ability and the learning outcomes of fourth grade mathematics at SDN Jurumudi 4, Tangerang City..

Test the correlation analysis of product moment person by comparing the significance (sig) probability of 0.05 or comparing r_{hitung} with r_{tabel} . If the significance <0.05 there is a relationship between variables, but on the contrary, if the significance > 0.05, it is stated that there is no relationship between variables. And if $r_{hitung} > r_{tabel}$ then there is a relationship between the two variables. If $r_{hitung} < r_{tabel}$ it is stated that there is no relationship between variables. In this study, researchers used the IBM 24 SPSS program for testing product moment correlation analysis. The results of the product moment correlation analysis can be seen from the following table:

Tabel 7. Output Correlations Product Moment

Correlations			
		Daya Ingat	Hasil Belajar
Daya Ingat	Pearson Correlation	1	,429*
	Sig. (2-tailed)		0,014
	N	32	32
Hasil Belajar	Pearson Correlation	,429*	1
	Sig. (2-tailed)	0,014	
	N	32	32

*. Correlation is significant at the 0.05 level (2-tailed).

Source: Results of Data Processing with SPSS IBM 24

From the Product Moment Correlations Output, it can be seen that the significance value is $0.014 < 0.05$, and $r_{hitung} 0,429 > r_{tabel} 0,349$. Furthermore, to see how much or the strength of the relationship between the memory ability variable and the learning outcome variable, it can be seen from the table below (Imam Machali, 2017):

Table 8. Correlation Level and Relationship Strength

No.	Correlation Score (r)	Relationship Level
1.	(+/-) 0,00 - 0,199	Very Low
2.	(+/-) 0,20 - 0,399	Low
3.	(+/-) 0,40 - 0,599	moderately
4.	(+/-) 0,60 - 0,799	Srong
5.	(+/-) 0,80 - 1,000	Very Strong

The table of the level of correlation and strength of the relationship between the memory ability variable and the learning outcome variable, it can be seen the level of greatness or strength of a relationship between the two variables, so that there is a positive relationship between the two variables with a correlation of 0.429, which means that the higher the student's memory, the greater the learning outcomes achieved and vice versa. It is known that the results of the magnitude or strength of the correlation between the two variables state that students' memory ability on grade IV math learning outcomes at SDN Jurumudi 4, Tangerang city is classified into the moderate or moderate category.

Then hypothesis testing is carried out using the correlation coefficient significance test with the t test at the significance level = 0.05 with the following formula:

$$\begin{aligned}
 t &= \frac{r\sqrt{n-2}}{\sqrt{1-r^2}} \\
 t &= \frac{0,429\sqrt{32-2}}{\sqrt{1-0,429^2}} \\
 t &= \frac{0,429\sqrt{30}}{\sqrt{1-0,184041}}
 \end{aligned}$$

$$\begin{aligned}
 t &= \frac{0,429 \cdot 5,4772255750}{\sqrt{0,815959}} \\
 t &= \frac{2,34972977}{0,9033044890} \\
 t &= 2,601
 \end{aligned}$$

The results of the correlation coefficient significance test are then compared with the t table with a significance level of 5% and $dk = n-2 = 32-2 = 30$, then obtained $t_{tabel} = 2,042$, and from the results of the correlation coefficient significance test, the price of $t_{hitung} = 2,601$ which means that the value of $t_{hitung} > t_{tabel} = 2,601 > 2,042$, then H_0 rejected and H_a Accepted. The hypothesis in this study is accepted, which means that "There is a correlation between students' memory ability and fourth grade math learning outcomes at SDN Jurumudi 4, Tangerang city".

High memory ability will make it easier for students to understand lessons at school and there will be opportunities for students to achieve good learning outcomes as well. The more information students get, the more often one information with other information is related to each other. In accordance with Sidiarto's opinion (Ade Pratiwi Fuji, 2018). Memory as a very important element of cognitive function has a strategic role in the process of independence in a person. Memory ability is part of cognitive, if students have a strong cognitive which includes memory ability, these students will be free from ignorance.

This is also supported by the theory of Walgito, who states that memory is part of cognitive information. Memory ability can also affect learning outcomes. It is in this memory that people build ideas and experiences with other information to support and remember information when needed. More and more often there is a relationship between one information and other information. All incoming data leaves a trace in the memory that is provided when the memory is needed.

Conclusion and Suggestion

Based on the results of data analysis in research conducted by the author on grade IV students of SDN Jurumudi 4 Tangerang city, and referring to the formulation of the problem, it can be concluded that: 1) The memory ability of students in class IV C SDN Jurumudi 4 Tangerang city, with a sample size of 32 students, can be seen from the results of the memory ability test related to mathematics worth fractions has obtained the lowest score of 33, the highest score of 93, a mean of 81.09, and Std. Deviation of 14.407. So with the mean results of the memory ability of class IV C students classified as high, it can be concluded that class IV C students have relatively good memory ability. 2) The learning outcomes of students in class IV C SDN Jurumudi 4 Tangerang city, with a sample size of 32 students, can be seen from the learning outcomes test which covers cognitive aspects related to mathematics worth fractions, the lowest score is 26, the highest score is 100, the mean is 76.31, and the Std. Deviation of 18.564, with the mean value of the learning outcomes of class IV C students said to be classified as high, therefore it can be concluded that the learning outcomes achieved by class IV C students are in good condition. 3) Based on the results of the correlation analysis of students' memory ability on learning outcomes, it was obtained $r_{hitung} > r_{tabel}$ ($0,429 > 0,349$) dan significance $0,014 < 0,05$, then there is a positive correlation between memory ability and fourth grade math learning outcomes at SDN Jurumudi 4 Tangerang city with the magnitude or strength of the correlation classified as sufficient. The correlation between memory ability and learning outcomes is positive, which means that the memory ability possessed by each student will affect the learning outcomes they get. Then the results of this researcher's hypothesis testing in testing the significance of the correlation coefficient with the t test and the results obtained are as follows $t_{hitung} > t_{tabel}$ ($2,601 > 2,042$) the hypothesis is accepted. So, the higher the ability of students' memory, the higher the

learning outcomes achieved. For readers or further researchers, it can be used as reference material in further research. It is suggested that future researchers can develop research variables.

Reference

- Creswell, John W. *Research Design: Qualitative, Quantitative and Mixed Methods Approaches*. London: Sage, 2014.
- Fauhah, Homroul. "Analisis Model Pembelajaran Make A Match Terhadap Hasil Belajar Siswa Analisis Model Pembelajaran Make A Match Terhadap Hasil Belajar ..." 9 (2021): 321-34.
- Hapnita, Widia, Rijal Abdullah, Yuwalitas Gusmareta, and Fahmi Rizal. "FAKTOR INTERNAL DAN EKSTERNAL YANG DOMINAN SISWA KELAS XI TEKNIK GAMBAR BANGUNAN SMK N 1 PADANG TAHUN 2016 / 2017" 5, no. 1 (2017).
- Hasratuddin. "Membangun Karakter Melalui Pembelajaran Matematika." *Pendidikan Matematika Paradikma* 6 (2014): 130-41.
- Kognitif, Ranah. "KKO Edisi Revisi Teori Bloom," n.d., 1-4.
- Machali, Imam. *Statistik Itu Mudah*. Yogyakarta: UIN Sunan Kalijaga Yogyakarta, 2017.
- Marinda, Leny. "Teori Perkembangan Kognitif Jean Piaget Dan Problematikanya Pada Anak Usia Sekolah Dasar," n.d. 2020, 116-52.
- Mones, Anselmus Yata. "Upaya Meningkatkan Daya Ingat Siswa Kelas IV Melalui Penerapan Metode Praktek Dan Latihan Terstruktur Pada Mata Pelajaran Pendidikan Agama." *Jurnal Selidik* 1, no. 2 (2020): 23-39.
- Nofindra, Rudi. "Ingatan, Lupa, Dan Transfer Dalam Belajar Dan Pembelajaran" IV, no. April (2019): 33-35.
- Novitasari, Dian, Universitas Muhammadiyah Tangerang, Kemampuan Pemahaman, and Konsep Matematis. "Pengaruh Penggunaan Multimedia Intraktif Terhadap Kemampuan Pemahaman Konsep Matematika Siswa," 2015, 8-18.
- Pane, Aprida, and Muhammad Darwis Dasopang. "Belajar Dan Pembelajaran." *FITRAH: Jurnal Kajian Ilmu-Ilmu Keislaman* 3, no. 2 (2017): 333. <https://doi.org/10.24952/fitrah.v3i2.945>.
- Pratiwi Fuji, Ade. "Peningkatan Daya Ingat Anak Usia Dini Melalui Media Mind Mapping Pada Kelompok Al-Muttaqin Kota Jambi," 2018.
- Saleh, Achiruddin Adnan. *Pengantar Psikologi*. Makassar Sulawesi Selatan: Aksara Timur, 2018.
- Suralaga, Fadhilah. *Psikologi Pendidikan*. Depok: PT. Rajagrafindo Persada, 2021.
- Wahyuning, Sri. *Statistik Dasar-Dasar*. Semarang: Yayasan Prima Agus Tekdik, 2021.
- Warsah, Idi & Daheri Mirzon. *Psikologi Suatu Pengantar*. Vol. 9, 2021.