

# PROCEEDINGS OF THE 3<sup>RD</sup> INTERNATIONAL CONFERENCE ON ISLAMIC EDUCATION AND SCIENCE DEVELOPMENT (ICONSIDE)

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## THE EFFECT OF READING COMPREHENSION ABILITY ON THE ABILITY TO SOLVE MATH STORY PROBLEMS OF FIFTH GRADE AT MI NURUL QUR'AN PAGUTAN IN THE 2024/2025 ACADEMIC YEAR

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### Abstract

This study aims to determine the effect of reading comprehension ability on the ability to solve math story problems of V grade at MI Nurul Qur'an Pagutan in the 2024/2025 academic year. This type of research is ex post facto research with a simple correlation design. Population of this research is all fifth grade students at MI Nurul Qur'an Pagutan. The sample of this study amounted to 58 samples with the technique of determining the sample using simple random sampling. The instrument used in this study was a description test instrument. The data analysis used is the prerequisite test in the form of normality and linearity tests while for hypothesis testing using simple correlation tests and simple regression equations. Based on the hypothesis test conducted, the results show that there is a positive and significant influence between reading comprehension ability on the ability to solve math story problems. This is indicated by a correlation coefficient of 0.902 and a coefficient of determination of 81%. The significance value obtained through the regression equation is  $\hat{Y} = -3.619 + 1.001X$ . Thus, there is an effect of reading comprehension ability on the ability to solve math story problems of v grade at mi nurul qur'an pagutan in the 2024/2025 academic year

**Keywords:** Reading Comprehension Ability; Ability to Solve Math Story Problems

### INTRODUCTION

Language skills consist of four important aspects: speaking, reading, listening and writing. Of these four aspects, reading skills hold the most important role. As an ability that must be possessed by students, reading skills not only enrich vocabulary and broaden horizons, but also train pronunciation, hone thinking skills, and provide opportunities for a person to respond to the reading material he learns (Ambarita et al, 2021). Reading is a series of processes in which the reader tries to capture the ideas expressed by the author

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through words or writing, and find the meaning of the words contained therein (Harianto, 2020).

In reading skills, there are two stages, namely the beginning reading stage and the advanced reading stage. According to Rahmi (2008), beginning reading is taught to low grade students in grades I and II, while advanced reading is taught to high grade students from grades III to VI. In the beginning reading stage, students are taught to recognize and encode (decoding) letters into words, which is the process of translating graphic symbols into sounds or words, while in the advanced reading stage, the focus is on understanding the meaning of the text read, known as reading comprehension. Reading comprehension is a series of actions a person takes to fully understand what they are reading. This process is carried out by connecting the reader's prior knowledge with the new information they obtain while reading, so that with reading activities the comprehension process is maximally built (Prihatin and Sari, 2020).

Reading comprehension skills are not only needed in the learning process, but also important in dealing with various types of tests. tests held at the elementary school level are still mostly in the form of written tests. In a written test, the first step is for students to understand the instructions for completing the test in order to follow the procedure and answer correctly. In answering a written test, students need to understand the information contained in the question and understand what is asked or what must be resolved. Difficulty in understanding the information and instructions in the problem can result in students not being able to answer the test correctly (Anwar et al, 2022). The ability to understand reading is also needed to solve story problems in mathematics.

Skills in solving math story problems are highly dependent on reading comprehension. Students need to understand not only the math concepts, but also the information conveyed in text form. Story problems hide mathematical data in the narrative, so students must filter relevant information, understand the context, and determine what to solve. Errors in understanding the text can lead to incorrect choices of mathematical operations, resulting in incorrect answers. Thus, reading comprehension skills are very important in order to be able to work on story problems correctly. In addition, critical thinking and strategizing skills are also important for success in working on math story problems.

From the results of observations made at MI Nurul Qur'an Pagutan on September 30, 2024, it shows that reading comprehension ability has a relationship with the ability to solve math story problems. Students who have good reading comprehension tend to find it easier to work on story problems, while students who are still weak in reading comprehension seem to have difficulty in understanding the contents of the problem and determining how to solve it. This can be seen when students work on tasks given by the

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teacher, where those who lack reading comprehension often experience confusion in solving story-shaped math problems.

The results of the interview with the homeroom teacher 5B MI Nurul Qur'an Pagutan mentioned that the ability to read comprehension is very impactful on the ability to solve metamatics story problems. Students with good reading comprehension skills tend to be easy to understand lessons both in math learning and in other learning. Meanwhile, students with poor reading comprehension skills tend to be lacking in capturing learning, especially in math story problems. Students who have difficulty in understanding reading are often confused in determining important information and choosing the right solution steps. Although the teacher has provided story problem exercises gradually, the results obtained are still not optimal. Based on this, it can be seen that there is a relationship between reading comprehension skills and the ability to solve math story problems.

Furthermore, to provide a clearer picture between the relationship between reading comprehension skills and the ability to solve math story problems. The following are presented the results of the Midterm Summative (STS) in the subjects of Indonesian language and Mathematics class V in the 2024/2025 academic year at MI Nurul Qur'an Pagutan. In Indonesian subjects by looking at students' ability to understand narrative-shaped questions while in math subjects by looking at students' ability to solve math story problems. The results of the students' Midterm Summative (STS) can be presented in the following table.

Table 1: Midterm Test Score of Class V MI Nurul Qur'an Pagutan in the 2024/2025 academic year.

Number	Class	Percentage of Completion	
		Indonesian Language	Math
1	5A	79,16 %	83,33 %
2	5B	69,56 %	52,17 %
3	5C	28,57 %	23,8 %
Average		59 %	53,1 %

Based on the table above, it can be observed that there is a clear relationship between the percentage of students' learning success in Bahasa Indonesia and Mathematics. There is a clear relationship between students' reading comprehension skills and their ability to solve math story problems. Good reading skills help students more easily interpret math story problems, so they can solve math narrative problems

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more precisely. Therefore, improving reading skills in Indonesian language learning can have a positive impact on student achievement in Mathematics.

Referring to the results of previous research relevant to this study, (Siarnagama et. al, 2023) revealed that there is a positive and significant influence between students' reading comprehension ability on their ability to solve math story problems in grade V MI Al-Zaytun. Similar findings were also obtained from research (Anwar et al, 2022). which shows a positive influence between reading comprehension ability on the ability to solve math story problems for fifth grade students at Cilendek Timur 1 State Elementary School in Bogor City in the 2020/2021 academic year. These two studies reinforce that reading comprehension skills have an important role in helping students solve math story problems effectively. From the explanation of the problems above, the researcher is interested in raising the research title "The Effect of Reading Comprehension Ability on the Ability to Solve Mathematical Story Problems of Grade V Students at MI Nurul Qur'an Pagutan in the 2024/2025 Academic Year".

## METHOD

The research approach used in this study is to use a quantitative approach with the type of ex post facto research. The variables in this study consist of independent variables, namely reading comprehension ability and dependent variables, namely the ability to solve math story problems. This research was conducted at MI Nurul Qur'an Pagutan in the even semester of the 2024/2025 academic year. The population in this study were all grade V students at MI Nurul Qur'an Pagutan with a total of 68 students. The sample used in this study was 58 students with sampling techniques using simple random sampling.

The instruments used in this study used test instruments in the form of description questions consisting of 9 questions on each question. The test was prepared based on indicators of reading comprehension ability and ability to solve math story problems. Before being given to students, an instrument test was carried out in the form of a validity test, reliability test, difficulty test and differentiation test. Validity and reliability tests are used to see how valid and reliable the instruments used are (Yusuf and Daris, 2018).

The data collection techniques used in this study were tests, documentation and interviews. The data analysis technique in this study is in the form of prerequisite test analysis in the form of normality and linearity tests while for hypothesis testing using correlation and simple regression analysis.

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## FINDINGS AND DISCUSSION

### Descriptive Statistics Results

The results of descriptive statistics in this study are to see the distribution of data collected in this study. The data in this study are statistical data in the form of reading comprehension ability test results with a test of the ability to solve students' math story problems. The following are presented the results of the reading comprehension ability test and the ability to solve students' math story problems.

**Table 2. Test Results of Grade V Students at MI Nurul Qur'an Pagutan in the 2024/2024 Academic Year**

	Reading Comprehension Ability Test	Test of Ability to Solve Math Story Problems
Number of Students	58	58
Highest Score	97	92
Lowest Score	17	14
Average	68,39	64,80

Table 2 shows that in the ability to read comprehension the highest score obtained was 97 and the lowest score was 17 with an average of 68.39. As for the ability to solve math story problems, the highest score is 92 and the lowest score is 14 with an average of 64.80.

### Results of Inferential Statistics

#### Normality Test

Normality test in research to determine whether the data is normally or abnormally distributed (Muchson 2017). In this study, the formula for the normality test used the Kolmogorov Smirnov test (Fitri, et. al 2023) with decision making if the Signification value  $> 0.05$ , then the data is considered normally distributed. Conversely, if the significance value  $< 0.05$ , the data is declared not normally distributed. The following are the results of the normality test in this study.

**Table 3. Data Normality Test Results**

Variable	Sig Value	Significance Level	Conclusion

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Reading comprehension ability	0,137	0,05	Normally Distributed
Ability to solve math story problems	0,343	0,05	Normally Distributed

Based on table 3, it can be concluded that the reading comprehension ability obtained a significance value of  $0.137 > 0.05$  and the ability to solve math story problems of  $0.343 > 0.05$ . So it can be stated that the data is normally distributed and can be used in parametric analysis.

## Linearity Test

The linearity test in this study is to determine whether the data has a linear relationship. The following are the results of the linearity test in this study:

**Table 4. Linearity Test Results**

Variable	Sig. deviation from linearity	Significance Level	Conclusion
X with Y	0,213	0,05	Linear

Based on Table 4, the sig. deviation from linearity value  $> 0.05$  is obtained, so it can be concluded that there is a linear relationship between variables X and Y variables.

## Hypothesis Test

After the prerequisite test is fulfilled, namely that the data is normally distributed and there is a linear relationship, then proceed to test the hypothesis using a simple correlation test and a simple regression test. The following are the results of hypothesis testing in this study:

- Correlation coefficient (r) and Coefficient of Determination (R Square)

**Table 5. Summary of Simple Correlation Test**

Variable	R Value	R Square
X with Y	0,902	0,814

Based on Table 5, the correlation coefficient value is 0.902. This shows that there is a strong positive relationship between reading comprehension ability (X) and the ability to solve math story problems (Y). In addition, the coefficient of determination (R Square) of 0.814 indicates that 81% of the variability in the ability to solve math

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story problems can be explained by reading comprehension ability, while the remaining 19% is influenced by other factors.

## b. Simple Regression Test

**Table 6. Simple Regression Test Results**

Constant (a)	Coefficient (b) X
-3,619	1,001

Based on Table 6, the value of  $a = -3.619$  and the coefficient value of variable X is  $b = 1.001$  so that the regression model equation can be arranged as follows:  $Y = -3.619 + 1.001 X$

The relationship shows that the regression coefficient value is positive affecting the ability to solve math story problems. The regression coefficient of 1.001 indicates that every one unit increase in reading comprehension ability will increase the ability to solve math story problems by 1.001 units.

## DISCUSSION

Based on the results of this study, the data on the ability to read comprehension of students and the ability to solve math story problems of fifth grade students at MI Nurul Qur'an Pagutan show the results that there is a significant influence between the two variables. Based on the results of hypothesis testing in this study also shows the results that there is a positive and significant influence between reading comprehension ability (x) on the ability to solve math story problems (Y) with a correlation coefficient of 0.902 which shows a strong positive influence so that the hypothesis is accepted there is an influence between reading comprehension ability on the ability to solve math story problems. The simple regression equation model in this study is  $Y = -3.619 + 1.001 X$  which can be explained that the ability to read comprehension positively affects the ability to solve math story problems. The regression coefficient of 1.001 indicates that every one unit increase in reading comprehension ability will increase the ability to solve math story problems by 1.001 units. This shows that reading comprehension is not only a supporting skill, but also the main foundation in solving math story problems. The contribution of the effect of reading comprehension ability on the ability to solve math story problems of fifth grade students at MI Nurul Qur'an Pagutan is 81%, which means that if the reading comprehension ability of students increases, the ability of students to solve math story problems also increases and the remaining 19% is caused by other factors.

In line with research by Fahrozy (2023) also suggests that students who have good reading comprehension skills tend to be better able to understand the context of story problems, identify relevant information, and apply mathematical concepts appropriately.

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In addition, good reading skills also help students in connecting the given information with the concepts they have learned before, so that their thinking process becomes more systematic and structured. Thus, these findings provide important implications for educators to integrate reading learning with mathematics to improve students' overall achievement, both in understanding problems more deeply and in developing more effective problem-solving skills. Furthermore, (Muhsetyo in 2016) stated that math story problems are a type of problem presented in the form of a narrative or story. Therefore, reading comprehension skills are needed to translate problems expressed in sentence form into mathematical representations, such as numbers, symbols, or sketches. This ability helps students understand the context of the problem, identify important information, and determine the right solution steps. Thus, improving reading comprehension skills can directly contribute to students' success in solving math story problems.

## CONCLUSION

Based on the results of the analysis and discussion in this study, it can be concluded that the ability to read comprehension has a positive and significant effect on the ability to solve mathematical story problems of grade V students at MI Nurul Qur'an Pagutan in the 2024/2025 academic year. This is indicated by the acquisition of a coefficient value ( $r_{xy}$ ) of 0.902 and a determination coefficient of 81%. The significance value with the regression equation in the study is  $\hat{Y} = -3.619 + 1.001X$ .

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