

# The Correlation Between Metacognitive Reading Strategies, Vocabulary Mastery and Reading Comprehension of The Ninth-Grade Students In SMP Negeri Hindu 2 Payangan

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## Abstract

Reading is a process of getting information and understanding the message of printed material. The research objective was to know 1) How much do metacognitive reading strategies contribute to students' reading comprehension of ninth- grade students. 2) How much does vocabulary mastery contribute to students' reading comprehension in the ninth-grade students in SMPN 2 Payangan. 3) How much do metacognitive reading strategies and vocabulary mastery simultaneously contribute to students' reading comprehension of the ninth-grade students. The research instruments, tests and questionnaire, were administered to collect the required data. The samples of this study were 164 students. They were selected through total sampling technique. Linear regression and multiple regression were carried out to analysis the data that assisted by SPSS 26.0 version. Based on the results of the research instruments, it could be concluded. The contribution of students' metacognitive contribute of 33,3% towards reading comprehension and there is a significant contribution of metacognitive reading strategies to students' reading comprehension of the ninth-grade students in SMPN 2 Payangan in the academic year 2023/2024. Moreover, students' vocabulary mastery contributes 50,8% towards reading comprehension and there is a significant contribution of metacognitive reading strategies to students' reading comprehension of the ninth-grade students in SMPN 2 Payangan, and the contribution of metacognitive reading strategies and vocabulary mastery to students' reading comprehension was 35.1%. There is a significant contribution of metacognitive reading strategies to students' reading comprehension of the ninth-grade students in SMPN 2 Payangan.

**Keywords:** *Metacognitive Reading Strategies, Vocabulary Mastery, Reading Comprehension*

## Introduction

Reading is an excellent way for students to expand their knowledge and acquire new information. The purpose of reading is to understand the idea of the written text (Brevik, 2019; Yeboah, 2021). Reading helps students learn a language. Reading requires the use of background knowledge, vocabulary, and reader experience so that the reader can understand the text. However, there are several difficulties faced by students in reading comprehension. According to Kilpatrick et al. (2019), the problems of reading comprehension are that poor readers have difficulties with high-level comprehension skills, which arise as a result of difficulties with the one word, and poor readers have difficulty with the syntactic and semantics of the text. In addition, vocabulary is essential for reading comprehension because readers cannot understand

what they are reading without knowing the meaning of most of the words (Zhang & Xiaoxi, 2022).

In addition, vocabulary is essential for reading comprehension because readers cannot understand what they are reading without knowing the meaning of most of the words (Zhang & Xiaoxi, 2022). Furthermore, the researcher found that the students become fearful cause of the long passage, which makes the whole must-read text. It means that the students forget what they already learn, and sometimes the students need to be made aware of their reading strategies in the classroom. Metacognition is one of the keys to comprehending some reading text. According to Muhid et al. (2020), strategies are regarded as "high-order executive skills that use knowledge of the cognitive process and constitute an attempt to regulate one's learning utilizing planning, monitoring, and evaluating. Metacognitive reading strategies, define as metacognition, refers to thinking about thinking. It means the students systematically think about their goals during the learning process. There are several previous types of research along the lines of this study. Ghaith and El- Sanyoura (2019) found that metacognitive reading strategies positively correlated with reading comprehension. Moreover, Sitepu (2018) has found a significant correlation between student vocabulary mastery and reading comprehension. A strong correlation explained that students' reading comprehension was influenced by their vocabulary mastery. Goyi et al. (2021) found a positive correlation between metacognitive reading strategies and vocabulary mastery on students' reading comprehension. Based on primary observation in SMPN 2 Payangan found that the students have difficulties understanding the text because of the lack vocabulary an less attention to the strategies used while their reading. Therefore, there must be a positive and significant contribution on students' metacognitive reading strategies, vocabulary mastery to students' reading comprehension.

Moreover, based on the previous research focused on investigating the correlation between metacognitive reading strategies, vocabulary mastery, and reading comprehension. The previous research only focused to find weather those variables have relationship or not. Therefore, in this current research, the researcher would like to know how much the contribution of those variables. In addition, most of the previous research conducted at the senior high school or university. Meanwhile, the current research conducted for junior high school students. To sum up, this research would like to investigate how much the contribution of metacognitive reading strategies, vocabulary mastery, to students' reading comprehension of the ninth students in SMP Negeri 2 Payangan in academic year 2023/2024. this study aims to investigate how much metacognitive strategies contribute to students' reading comprehension. The second is to investigate how much vocabulary mastery contributes to students' reading comprehension of ninth grade students. The third is how much the correlation between metacognitive reading strategies and vocabulary mastery contributes to students' reading comprehension of ninth-grade students in SMPN 2 Payangan in the academic year 2023/2024. This study's results are expected to have theoretical and practical relevance to the field of study. Theoretically and practically, the current research results are for English teachers, this research is expected to reveal the teaching reading comprehension results, for the students this research is expect to help them solve their problems, especially in reading comprehension and for other researchers, become a reference that can help future researchers improve and develop their research related to the correlation between the research variables: metacognitive reading strategies, vocabulary mastery, and reading comprehension.

## Method

In this present study, the researcher used the correlational study to find out how much metacognitive reading strategies contribute to students' reading comprehension, how much vocabulary mastery contribute to students' reading comprehension, and how much metacognitive reading strategies, vocabulary mastery contribute to students' reading comprehension of the ninth-grade students in SMPN 2 Payangan in the academic year 2023/2024. The population of this study was 164 students consist of 91 male and 73 female. The researcher used a total sampling technique to take the sample because the researcher got more valid data. In other words, in the present study, the researcher used the whole population or all of the ninth-grade students of SMPN 2 Payangan.

In addition, data were collected through a questionnaire known as Survey of Reading Strategies (SORS), multiple choice test for vocabulary mastery, and a reading comprehension test namely short answer task. The questionnaire was adapted from the work of Mokthri and Shoerey namely Survey of Reading Strategies (SORS). The questionnaire statements are written in *Bahasa Indonesia* to avoid misunderstanding. The researcher also would like to give the samples clear instructions so that the samples were understood. The researcher used multiple-choice question consisted of 60 question to measure students' vocabulary mastery. The students chosen the correct answer and if the sample's answer was right, the score is one (1) and if the sample' answer was wrong, the score is zero (0). Moreover, to measure the student's reading comprehension, the researcher will use short answer tasks as the instruments. The students will give some descriptive text and write their answers. Moreover, have 45 minutes to answer the questions through Google From. In the present study, the researcher decided to use ninth-grade students in SMPN 2 Payangan as the population of the study. The ninth-grade students of SMPN 2 Payangan are divided into five classes. Therefore, 164 students (91 male and 73 female) were considered as the population as presented in the table below.

Table 1. The Population of The Research

Class	Number of Students
IX A	32
IX B	32
IX C	34
IX D	33
IX E	33
Total	164

The researcher used a total sampling technique to take the sample because the researcher got more valid data. In other words, in the present study, the researcher used the whole population or all of the ninth grade students of SMPN 2 Payangan. After the instruments were validated by the experts, they were tried – out for the students before being applied to the real sample. The try-out of instruments was conducted in SMP Negeri 4 Tegallalang with the number of students was 60 students as a sample in Grade IX D and IX E on Saturday, 18 June 2023. Data collection is the process of collecting data by administering the research instruments. Validity, empirical validity and reliability performed the quality of the research instruments while the appropriateness of the method carried out to collect the data that performed quality data collection.

## Results

The analysis of the pre-requisite consisted of normality, multicollinearity, heteroscedasticity, autocorrelation, and linearity test. In addition, SPSS 26.0 version for Windows was used in the present study to analyze the data statistically. It made the data more accurate. Furthermore, the normality, multicollinearity, heteroscedasticity, autocorrelation, and linearity test of the data should be carefully computed since it was important in the present analysis.

Table 2. The Summary of Normality Test with Kolmogorov-Smirnov  
Unstandardized Residual

N		164
Normal	Mean	0.000
Parameters <sup>a</sup>	Std.	4.630
	Deviation	
Most Extreme	Absolute	0.068
Differences	Positive	0.051
	Negative	-0.068
Test Statistic		0.873
Asymp. Sig. (2-tailed)		0.430

Based on table 2, it can be clearly seen that the level of significance of all groups of data that were analyzed by using Kolmogorov-Smirnov showed that the figures were above 0.430. In short, it means the data of variables, metacognitive reading strategies, vocabulary mastery, and reading comprehension have already had a degree of normality. The researcher should do the second step before the hypothesis testing; it is a multicollinearity test. The results of the analysis could be summed up in the following table.

Table 3. The Summary of Multicollinearity Test

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-6.700	4.294		-1.560	0.08402778
	X <sub>1</sub>	0.065	0.035	0.10277778	1.864	0.064
	X <sub>2</sub>	0.08125	0.065	0.1	1.817	0.071

Table 3 clearly pointed out that the significant values of the research variables were above the tolerance value for the metacognitive reading strategies variable (X1) is  $0.936 > 0.10$  and the VIF value is  $1.069 < 10$ . In summary, the data have already fulfilled the pre-requisite analysis in terms of multicollinearity test, and the analysis can be continued to the hypothesis testing.

Table 4. The Summary of Heteroscedasticity Test With Glejser

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-6.700	4.294		-1.560	0.08402778
	X <sub>1</sub>	0.065	0.035	0.10277778	1.864	0.064
	X <sub>2</sub>	0.08125	0.065	0.1	1.817	0.071

Based on table 4, it can be clearly seen that the level of significance of X1 (metacognitive reading strategies) and X2 (vocabulary mastery) of data that were analyzed by using the Glejser test showed that the figure was more than 0.05. It could be concluded that the data have already fulfilled the heteroscedasticity test or there is no heteroscedasticity. The next test is autocorrelation test. The autocorrelation test aims to

test whether, in linear regression, there is a correlation between the confounding errors in period t with confounding errors in period t-1 (previously).

Table 5. The Summary of Autocorrelation Test

R	R Square	Durbin-Watson
0.592	0.351	2.022

Based on the table above the value of the Durbin-Watson statistic is 2.022. Because the value of the Durbin-Watson statistic lies between dU and 4-dU, namely  $1.769 < 2.022 < 2.231$ . Then the assumption of non-autocorrelation is fulfilled. In other words, autocorrelation symptoms did not occur in the regression model. Moreover, the next test is Linearity test.

Table 6. The Summary of Linearity Test

	Variabel	Sig.
<i>Deviation from Linearity</i>	$X_1 * Y$	0.088
	$X_2 * Y$	0.075

Based on the table above, the sig. Deviation from Linearity in each variable interaction is more than 0.05. This shows that the correlation between metacognitive reading strategies data and vocabulary mastery data on students' reading ability data for each variable as a whole is linear. After completing the classical assumption test and it was proven that the data are normally distribute, no multicollinearity, homoscedasticity. This study used multiple linear regression analysis to predict how much influence the independent variables have on the dependent variable. The calculation of this test was carried out with the help of SPSS 20. The results of the multiple linear regression analysis test can be seen in the following table.

Table 7. The Summary of Multiple Regression

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-18.540	6.569		-2.822	0.005
	$X_1$	0,23125	0.054	0,28333333	6.220	0.000
	$X_2$	0,35277778	0.099	0,23402778	5.140	0.000

$$Y = -18.540 + 0.333X_1 + 0.508X_2 + e$$

Based on the above equation can be explained as follows.

1. The constant value is -18,540 which means that if there is no change in the value of the variables  $X_1$  and  $X_2$  then the value of the Y variable is -18,540.
2. The regression coefficient on the metacognitive variable ( $X_1$ ) is 0.333 and has a positive value, meaning that the value of the metacognitive variable ( $X_1$ ) has increased by 1 unit significantly and the independent vocabulary variable has a fixed value. it increased the reading ability variable (Y) by 0.333.
3. The regression coefficient on the vocabulary variable ( $X_2$ ) is 0.508 and has a positive value, meaning that the value of the vocabulary variable ( $X_2$ ) has increased by 1 unit. significantly and the metacognitive independent variable has a fixed value. it increased the reading ability variable (Y) by 0.508.

The purpose of coefficient determination is to know far the ability of the model in explaining the variations of the dependent variable.

Table 8. The Summary of Coefficient Determination

R	R Square	Adjusted R Square
0.592 <sup>a</sup>	0.351	0.343

Based on the test results of the coefficient of determination above. the R Square value of the regression model is 0.351. this means that 35.1% of the variability of the reading ability variable (Y) can be explained by the metacognitive variable (X1). and variable vocabulary (X2). The remaining 65.9% is explained by other variables outside the research.

Table 9. The Summary of F-test Result

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	1887.126	2	943.563	43.469	0.000 <sup>a</sup>
Residual	3494.746	161	21.706		
Total	5381.872	163			

Based on the results of the analysis in the table above, the significant value is 0.000 and it less than the probability value 0.05, then H0 is rejected and H1 accepted. It means that the independent variables which are metacognitive reading strategies and vocabulary mastery have positive and significant contribution on students' reading comprehension simultaneously. Refers to the basis for decision making. H0 is rejected, which means that there is a significant effect simultaneously on the metacognitive variable (X1) and the vocabulary variable (X2) on the reading ability variable (Y). The T-test result can show in table below.

Table 10. The Summary of T-test Result

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-18.540	6.569		-2.822	0.005
	X <sub>1</sub>	0.333	0.054	0.408	6.220	0.000
	X <sub>2</sub>	0.508	0.099	0.337	5.140	0.000

Based on the table 10, the hypothesis result will be explained as follow:

1. Hypothesis Test for Metacognitive Reading Strategies (X1)

Table 10 shows that the coefficient regression (B) is 0,333 and sig. or probability value (p-value) is 0.000 < a (0,05). P value < 0,05 means significant. It means metacognitive reading strategies has positive and significant contribution on students' reading comprehension. Furthermore, first hypothesis (H1) is accepted.

2. Hypothesis Testing for Vocabulary Mastery

Table 10 shows that the coefficient regression (B) is 0,508 and sig. or probability value (p-value) is 0.000 < a (0.05) means significant. It means that students' vocabulary master has positive and significant influence on students' reading comprehension.

## Discussion

After analysing the data, the researcher has already answered the research hypotheses. The explanation of the findings was described as follows:

### **The Contribution of Metacognitive Reading Strategies to Students' Reading Comprehension**

In this research, the researcher used multiple regression to know how much metacognitive reading strategies contribute to reading comprehension. The result of the analysis revealed that the B was 0.333. It means that students' metacognitive contribute of 33,3% towards reading comprehension and 66,7 % was contributed by other variables not examined in the research. Therefore, this research showed that that there was positive contribution between metacognitive reading strategy toward reading comprehension, with the significant level was less than alpha ( $\alpha$ ) ( $0.00 \leq 0.05$ ). Good reader use metacognitive reading strategy is to think about and have control over their reading.

Finding of this current study was consistent with the finding of Ghaith and El-Sanyoura (2019) which showed that metacognitive reading strategies positively correlated with reading comprehension. Another finding that in line with this study was Maryam et al. (2019) researched metacognitive reading strategies and reading comprehension. The researchers have found a significant correlation between metacognitive reading strategies and reading comprehension among 1st Year EFL students in West Java. Zhanetta et al. (2017) also conducted similar research about the correlation between metacognitive reading strategies and students' reading comprehension. They assumed a positive correlation between metacognitive reading strategies and students' reading comprehension. In conclusion, the readers who have good metacognitive reading strategies awareness also showed have good of reading comprehension. Moreover, this finding confirms the first hypothesis of this research, indicating that there is a significant contribution of metacognitive reading strategies to students' reading comprehension of the ninth-grade students in SMPN 2 Payangan in the academic year 2023/2024.

### **The contribution of Metacognitive Reading Strategies to Students' Reading Comprehension**

In addition, the result of the analysis revealed that the B was 0.508. It means that students' vocabulary mastery contributes 50,8% towards reading comprehension. Meanwhile, 49,2% was contribute from outside factors unrelated to other variables within the study. The result of regression indicates that vocabulary mastery give contribution to reading comprehension, it meant that every improvement of vocabulary mastery will be followed by the improvement of reading comprehension. It means the better students master vocabulary knowledge, the better they to comprehend a text. In this case, there positive between vocabulary mastery toward reading comprehension with the significant value was lower than alpha ( $\alpha$ ) ( $0.00 \leq 0.05$ ).

Moreover, this finding agreed with Fahrurrozi (2017) on vocabulary mastery and reading comprehension. The researcher has found a significant correlation between students' vocabulary mastery and reading comprehension. Lusianah (2017) conducted a study to find the correlations between vocabulary mastery and reading comprehension of second-year junior high school students. The results showed a positive correlation between vocabulary mastery and reading comprehension.

Moreover, Setyowati et al. (2020) also found a similar finding. They found a significant correlation between vocabulary mastery and reading comprehension of 6th-semester students of the Islamic University of Sunan Ampel Surabaya. To collect the data, the researcher used a test. It is similar to a study conducted by Bahri (2019). The study was conducted on the seventh-grade students of MTs DAARUL IHSAN. vocabulary mastery and reading comprehension relate to each other, then they cannot be separated. In the other words, by having and mastering vocabulary we will know the meaning of vocabulary in context. It can also help the students to avoid making mistake in misunderstanding. Vocabulary is very important to reading comprehension; readers cannot understand what they are reading without knowing what most of the word mean. In conclusion, as expected, the second hypothesis accepted and showed there is a significant contribution of metacognitive reading strategies to students' reading comprehension of the ninth-grade students in SMPN 2 Payangan in the academic year 2023/2024.

### **The contribution of vocabulary mastery and metacognitive reading strategy to reading comprehension**

In addition to answer the third research problem, how much do metacognitive reading strategies and vocabulary mastery contribute to reading comprehension of ninth grade students in SMP Negeri Hindu 2 Payangan. Based on the test results of the coefficient of determination above the R Square value of the regression model is 0.351 this means that 35.1% of the variability of the reading ability variable (Y) can be explained by the metacognitive variable (X1) and variable vocabulary (X2) and 65.9% was unexplained factor value. Based on F- test, the significant value was 0.000 and it less than the probability value 0.05, then H0 is rejected and H1 accepted. It means that the independent variables which were metacognitive reading strategies and vocabulary mastery have positive and significant contribution on students' reading comprehension simultaneously. In agreement with earlier study by Goyi et al. (2021) that found a significant positive relationship between students' reading comprehension, vocabulary mastery, and metacognitive reading strategies of students in Rungus Tribe and Kudat Sikuati II Government Secondary School. It meant that if the students master vocabulary well and control their reading strategy it will be easy to comprehending a text. Moreover, the finding of this study can support the previous study which found that both metacognitive reading strategies and vocabulary mastery have significant contribution to students' reading comprehension.

### **Conclusion**

After collecting the data on the students' metacognitive reading strategies, vocabulary mastery, and reading comprehension, the researcher computed and analyzed the data. The data analysis results, namely the pre-requisite test, hypothesis testing, and regression analysis. The data obtained can be said to meet the research requirements. Based on the data analysis above, it was figured out that there was a significant contribution of metacognitive reading strategies to reading comprehension of the ninth-grade students of SMP Negeri Hindu 2 Payangan in academic year 2023/2024; there was significant contribution of vocabulary mastery to reading comprehension of the ninth-grade students of SMP Negeri Hindu 2 Payangan in academic year 2023/2024; there was significant contribution of metacognitive reading strategies and vocabulary mastery to reading comprehension of the ninth-grade



students of SMP Negeri Hindu 2 Payangan in academic year 2023/2024. It can also be clearly seen from the data that have been carefully collected by administering the valid and reliable research instruments in the present study. In other words, the hypothesis that has been stated was finally accepted. Based on the finding than have been described before, the implication of this research are there is positive and significant contribution of students' metacognitive reading strategies and students' vocabulary mastery to students' reading comprehension. The researcher would like to propose some implication to English teachers and the teacher should motivate their students more about the importance of metacognitive reading strategies and students' vocabulary mastery to contribute their reading comprehension. The teachers should monitor the learners' process in reading, give instruction that enable them to use reading strategies frequently the teacher should put more attention to the strategies used while reading. They should be taught and be made aware of a variety of strategies. This will allow them to use the strategies while reading a variety of tasks. The English teachers of SMP Negeri Hindu 2 Payangan are suggested to pay more attention to motivate and stimulator the students. For the ninth-grade students in SMP Negeri Hindu 2 Payangan , they are suggested to be more prepared in joining the lessons so that when the lessons begin, they have already known about the learning material. For other researchers, this research can be used as a reference for other researchers to make better research. In addition, this provides some information about students' metacognitive reading strategies, vocabulary mastery and their ability to comprehend the tex

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