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The Correlation Between Metacognitive Reading Strategies and Students' Reading Achievement

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Abstract
This study investigates the relationship between metacognitive reading strategies and students' reading achievement at Universitas Negeri Padang. It aims to determine whether students who utilize metacognitive reading strategies exhibit higher academic performance, particularly in reading tasks. A correlational design with quantitative methods was employed, involving questionnaires to assess metacognitive strategy use and document analysis of reading scores for 54 students. Data analysis revealed a significant correlation by using IBM SPSS Statistics 25. Data analysis through Spearman coefficient showed value 0.659 ($p < 0.001$), suggesting that alternative hypothesis was accepted. It means frequent use of metacognitive strategies is associated with higher reading achievement.

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INTRODUCTION

Metacognitive reading strategies have become a key focus in educational research, especially in the context of improving reading comprehension and academic performance. First introduced by Flavell (1979), the concept of metacognition involves individuals' awareness and control over their own cognitive processes, including planning, monitoring, and evaluating how they think and learn. In the context of reading, metacognitive strategies enable students to engage dynamically with texts, track their comprehension, and make adjustments as needed to improve comprehension (Schraw & Dennison, 1994). As such, these strategies are essential in supporting students become more effective and independent learners, particularly in second-language acquisition settings like English as a Foreign Language (EFL).

Reading is a fundamental skill for language learners, directly influencing their overall language proficiency and academic success. However, mastering reading in a second language can be challenging for students due to several problems such as; vocabulary limitations, difficulty in understanding complex texts, and lack of motivation (Safura & Helmanda, 2020; Satriani, 2018). These challenges necessitate the use of appropriate strategies that enable students to better understand and retain information. Metacognitive reading strategies, which include planning, problem-

solving, and supporting activities such as taking notes and summarizing, have been shown to significantly improve students' reading abilities (Mokhtari & Reichard, 2002).

Previous studies have emphasized the potential of metacognitive strategies to improve reading comprehension and boost academic success. For instance, research by Ahmadi, Ismail, & Abdullah (2013) and Ghaith & El-Sanyoura (2019) demonstrated positive relationship between the application of these strategies and enhanced reading achievement among EFL learners. However, a study conducted at Universitas Negeri Padang by Wahyuni, Ratmanida, & Marlina (2018) found no significant relationship among metacognitive reading strategies and reading comprehension in English Department at Universitas Negeri Padang. These inconsistencies underscore the need for further investigation into how metacognitive strategies can be effectively applied to different educational contexts.

While the advantages of metacognitive strategies are well-known, many students and educators, particularly at Universitas Negeri Padang, may not be fully aware of or use them effectively. This has led the researcher to examine how English education students in the advanced reading class impact learning outcomes. By focusing on students' use of specific strategies, such as Global Reading Strategies, Problem-Solving Strategies, and Support Reading Strategies (Mokhtari & Reichard, 2002), this research seeks to provide empirical evidence on the role of metacognition in enhancing academic outcomes in reading.

METHOD

This study adopted a quantitative correlational design to examine the correlation between metacognitive reading strategies and reading achievement. The population consisted of second-year English education students at Universitas Negeri Padang. There were seven classes (K1-K7) in English Education Department 2022. The sample was selected through cluster random sampling. The chosen class was K2 and K3 with total sample 54 students.

The Metacognitive Awareness of Reading Strategies Inventory (MARSI) questionnaire and students' final scores in the Advanced Reading course was used to gather the data. To collect the data, the researcher distributed a questionnaire and obtained final reading scores to evaluate the use of metacognitive reading strategies and students' reading performance. Initially, students completed the 30-item Metacognitive Awareness of Reading Strategies Inventory (MARSI), which used a Likert scale for scoring. The questionnaire was administered digitally via Google Forms. Additionally, the researcher collected the students' final reading scores from the related lecturer who taught their Advanced Reading class.

The instruments used in this study were validated by Rizaldy Hanifa, S.Pd., M.Pd., a lecturer at Universitas Negeri Padang, to ensure that the questionnaire items were suitable, accurate, and aligned with the research objectives. The reliability of the study was assessed using Cronbach’s Alpha to ensure the consistency of the MARSI questionnaire results. The Cronbach's alpha values for the subscales were generally above 0.80, suggesting that the items in each subscale reliably measure the same concept.

Furthermore, the researcher performed two classical assumption tests: a test for normality and a test for linearity. The normality test assessed whether the distribution of data met the normal distribution criteria, which is important for determining the appropriate statistical tests to apply. The linearity test assessed whether a linear relationship existed between the variables, as linearity is essential for reliable correlation analysis. The results of these tests indicated that, while the data exhibited a linear relationship, it did not fully meet the assumption of normality. Consequently, the researcher selected the Spearman's Rank Correlation Coefficient for hypothesis testing, conducted through SPSS, as this non-parametric test is well-suited for data that may not follow a normal distribution. This method enabled the researcher to accurately assess the strength and nature of the connection between students' use of metacognitive reading strategies and their reading success, offering valuable insights into how these strategies might be linked to improved reading performance..

RESULT AND DISCUSSION

Research Finding

This research was conducted among students enrolled in the Advanced Reading class at Universitas Negeri Padang, focusing on second-year English education students. The research sample consisted of 54 students, chosen through cluster random sampling. Data were gathered using two tools: the Metacognitive Awareness of Reading Strategies Inventory (MARSI) and the students' final Advanced Reading scores, which reflected their reading achievement.

Table 1. Students' Tests Score

No.	Students' Initial	Reading Achievement Score	MARSI Score
1.	AA	78,1	116
2.	AP	82,35	117
3.	AF	77,4	116
4.	AR	78,9	113
5.	AAV	54,75	110
6.	AAF	84,9	126
7.	AAS	85,4	113
8.	DWS	57,75	98
9.	DTV	74,6	109
10.	DPA	78,6	107
11.	DHA	65,1	109
12.	FA	56	101
13.	FAA	67,15	113
14.	FNL	59,75	101
15.	FAR	63,6	117
16.	FR	64	98
17.	GGM	80,75	107
18.	GK	71,5	100
19.	GT	85,3	129
20.	GS	83,3	106
21.	GF	56,5	101
22.	HN	55	88
23.	HF	71	111

24.	KBA	81,4	125
25.	KNS	81,9	118
26.	KAA	79	109
27.	LA	80	121
28.	MA	80	123
29.	MS	84,7	119
30.	MAP	64	103
31.	MA	70	106
32.	MHR	59	114
33.	MSF	81,5	109
34.	MVK	85,7	122
35.	NK	78,7	103
36.	NA	68	103
37.	NF	85,2	108
38.	NH	77	117
39.	NI	77,1	108
40.	PR	79,6	114
41.	RA	79,8	108
42.	RPG	72	111
43.	RK	79,6	117
44.	RPN	64,6	104
45.	RN	52,75	100
46.	RS	79,6	107
47.	SR	85,2	111
48.	SAK	43,8	107
49.	SR	81,5	116
50.	SA	58,75	96
51.	THG	85,4	128
52.	VR	59,6	102
53.	WOP	58	97
54.	YA	69,1	115

The analysis of the metacognitive reading strategies employed by the sample revealed that 74.1% of students scored in the high range of strategy usage, while 25.9% scored in the medium range. None of the participants exhibited low use of metacognitive strategies. For reading achievement, 22.6% of students earned "very good" grades, and 20.6% achieved "excellent" grades, with only a small percentage (1.9%) scoring in the "poor" range.

Normality Test

To ensure the data were suitable for correlation analysis, the researcher conducted a Shapiro-Wilk normality test using SPSS. This test checks if the data follow a normal distribution, which is a key assumption for performing correlation analysis. A significance value greater than 0.05 suggests that the data are normally distribute. The outcomes of this normality test, including the test statistic and p-value, are showed in the table below.

Table 2: Normality Test Results

The outcomes, as shown in Table 2, revealed that the p-value for the

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	df	Sig.
Metacognitive Reading Strategies	.070	54	.200*	.989	54	.907
Students' Reading Achievement	.197	54	.000	.904	54	.000

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

metacognitive reading strategies was 0.907 (greater than 0.05), indicating that this variable was normally distributed. However, the reading achievement scores had a p-value of 0.000 (less than 0.05), meaning that the reading achievement variable did not follow a normal distribution. Due to the non-normal distribution of the reading achievement variable, the Spearman's Rank Correlation Coefficient was applied for further analysis.

Linearity Test

A linearity test was conducted to assess whether a linear relationship existed between students' metacognitive reading strategies and their reading achievement. A linear relationship is confirmed when the significance value for linearity is below 0.05. The findings from this test are shown in the tables below.

Table 3: Linearity Test Results

ANOVA Table

			Sum of Squares	df	Mean Square	F	Sig.
Students' Reading Achievement * Metacognitive Reading Strategies	Between Groups	(Combined)	4096.602	28	146.307	1.597	.120
		Linearity	2745.096	1	2745.096	29.964	.000
		Deviation from Linearity	1351.506	27	50.056	.546	.936
	Within Groups		2290.306	25	91.612		
	Total		6386.908	53			

As seen in Table 3, the p-value for linearity was 0.000 (less than 0.05), confirming a linear relationship between the two variables.

Hypothesis Test

After completing the classical assumption test that met the necessary assumptions of normality and linearity, a hypothesis test was carried out to investigate the connection between metacognitive reading strategies and students' reading achievement. This test was performed using Spearman's Rank Correlation Coefficient in IBM SPSS Statistics 25. The table below displays the hypothesis test results.

Table 4: Hypothesis Test Results

Correlations

			Metacognitive Reading Strategies	Students' Reading Achievement
Spearman's rho	Metacognitive Reading Strategies	Correlation Coefficient	1.000	.659**
		Sig. (2-tailed)	.	.000
		N	54	54
	Students' Reading Achievement	Correlation Coefficient	.659**	1.000
		Sig. (2-tailed)	.000	.
		N	54	54

The results, as presented in Table 4, indicated a significant positive correlation of 0.659, meaning that as the application of metacognitive reading strategies increased, students' reading achievement also improved. The results support the alternative hypothesis that there is a strong correlation among metacognitive reading strategies and students' reading achievement at Universitas Negeri Padang. The results support the alternative hypothesis, rejecting the null hypothesis.

Discussion

This study explores the connection between metacognitive reading strategies and students' reading achievement, specifically examining if students who use these strategies more effectively achieve higher academic results. Data were gathered through questionnaires and student scores, revealing a strong positive correlation between these variables. The Spearman correlation coefficient of 0.659 ($p = 0.000$) indicates that students who frequently employ metacognitive strategies tend to perform better in reading tasks.

The findings are supported by theories from Flavell (1979) and Schraw & Dennison (1994) on metacognitive knowledge and regulation. Most participants (74.1%) demonstrated a strong level of metacognitive awareness, which corresponded with their higher than average reading scores (79.6%). Higher MARSI scores, which reflect awareness of metacognitive reading strategies, tend to align with better final scores in Advanced Reading. For example, students with the highest MARSI score of 129 also achieved an Advanced Reading score of 85.3, which is close to the highest in the class. Meanwhile, students with MARSI scores around 108 to 111 still maintained good Advanced Reading scores between 80 and 85.2, though slightly lower than those with the highest MARSI scores. This supports the idea that strong metacognitive skills enhance academic performance through self-regulation, enabling students to overcome reading challenges and improve comprehension. Students effectively used problem-solving (PROB), global (GLOB), and support (SUP) strategies to enhance their reading processes, confirming Mokhtari & Reichard's (2002) theory.

The previous study by Wahyuni et al. (2018) at Universitas Negeri Padang found no correlation between students' metacognitive strategy awareness and reading comprehension, with participants displaying medium awareness and below-average reading scores. In contrast, the result of this research revealed a significant positive correlation, where students with high awareness of metacognitive strategies performed better in reading tasks. The key difference is that higher metacognitive awareness in

this study led to improved reading achievement, highlighting the importance of strategy training and effective application.

The study's results align with prior research by Fadilah, Ridwan, Putri, Prayoga, & Ihsan (2021) and Ahmadi et al., (2013), affirming the positive effect of metacognitive strategies on reading comprehension. However, the varied performance among students suggests that individual learning styles, instructional quality, and previous exposure to metacognitive training can affect strategy application. Ghaith & El-Sanyoura (2019) additionally observed that the effectiveness of these strategies depends on individual abilities and instructional support.

These findings suggest that metacognitive strategies are not merely helpful tools but important strategies for academic success in reading, especially in the context of foreign language learning. Therefore, integrating these strategies into the English language curriculum, as recommended by Wijaya & Mbato (2022), may positively influence students' reading skills in a meaningful way. The findings from this study provide valuable insights for language educators and curriculum designers in their efforts to improve student outcomes in reading.

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