

The Correlation between Students' Cognitive Reading Strategies and Their Reading Comprehension Achievement

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Abstract

This study investigated the correlation between cognitive reading strategies and reading comprehension achievement and explored the influence of cognitive reading strategies on reading comprehension achievement of undergraduate English major students of Universitas Islam Negeri Raden Fatah Palembang. A total of 103 fifth semester students as a sample completed the reading section of TOEFL test, and the survey of reading strategies (SORS). Descriptive statistics, Pearson product-moment correlation and regression analysis were employed to analyze the data. The result of correlation analysis revealed that the correlation coefficient or the r ($.618 > r\text{-table } .193$). Then, the level of probability (p) significance (sig.2-tailed) was p ($.000 < .05$). Thus, there was a significant correlation between the students' cognitive reading strategies and their reading comprehension achievement. In addition, it was found that students' cognitive reading strategies significantly influenced on their reading comprehension achievement with the contribution of 38.1%.

Keywords: *cognitive reading strategies, reading comprehension, cognitive*

A. Introduction

Reading is a fundamental skill in learning a language, especially for students who are acquiring English as a second language. Being proficient in reading is essential for academic success as it helps students understand and process information efficiently. According to Nasri and Biria (2016), reading is a key skill that students need to develop in order to succeed in their studies. Additionally, Harmer (2007) states that reading greatly benefits second-language acquisition, as frequent reading exposure enhances fluency. As reading comprehension plays a crucial role in both academic and personal growth, this study

focuses on how cognitive reading strategies can help students improve their reading comprehension.

From an academic perspective, reading comprehension promotes critical thinking and helps students analyze texts effectively, which is vital for their studies. In practical terms, it allows them to understand written materials in everyday situations. Sari (2016) explains that reading comprehension enables students to grasp the meaning and context of texts, enhancing their language proficiency and adaptability. However, many students struggle with reading comprehension due to limited vocabulary, difficulties with grammar, and a lack of effective reading strategies. Using cognitive reading strategies can help students improve their ability to process and retain information, thus enhancing their reading skills.

Numerous studies have explored the connection between cognitive reading strategies and reading comprehension. Oxford (as cited in Saifullah & Mughni, 2019) categorizes reading strategies into cognitive, metacognitive, and socio-affective strategies. Cognitive strategies focus on internal processes like repetition, summarization, and inferencing to aid comprehension (Marzuki, Alim, & Wekke, 2018). Research by Nazurty et al. (2019) emphasizes that cognitive strategies enable students to analyze, remember, and apply the information they read. Suyitno (2017) also highlights that these strategies encourage active engagement with texts and improve comprehension. These findings suggest that cognitive reading strategies significantly enhance students' reading abilities.

Despite extensive research on reading comprehension strategies, gaps remain in understanding the effectiveness of cognitive strategies among university students. Many existing studies focus on younger learners or general reading strategies without distinguishing between specific cognitive techniques. Moreover, there are inconsistencies in identifying which cognitive strategies are most effective for struggling students. This study aims to address these gaps by examining the cognitive reading strategies used by students at

Universitas Islam Negeri Raden Fatah Palembang and their impact on reading comprehension. The study's main contribution is providing empirical evidence on the relationship between cognitive strategies and reading comprehension achievement, particularly among university students learning English as a second language.

The central research problem in this study is how cognitive reading strategies influence students' reading comprehension achievement. The research explores how frequently students use these strategies, identifies the most commonly applied strategies, and evaluates their effectiveness in improving comprehension. The objectives include analyzing students' reading difficulties, assessing the role of cognitive strategies in overcoming these challenges, and determining their overall impact on academic performance. This study is set within the context of Universitas Islam Negeri Raden Fatah Palembang, with university students as the main focus of analysis. This article is structured as follows: the next section presents a literature review detailing cognitive reading strategies, followed by the research methodology outlining the study's design, participants, and data collection techniques. The findings and discussion section examines the research results and their implications for students' reading comprehension. Finally, the conclusion summarizes the key findings, explains their significance, and provides recommendations for educators and future research. By concentrating on cognitive reading strategies, this study aims to contribute valuable insights into effective techniques for improving reading comprehension among English learners.

B. Research Methodology

This study employed a correlational research design and utilized quantitative analysis techniques. The objective of this quantitative study was to assess the cognitive reading strategies that students used and the relationship between these strategies and their reading comprehension. Creswell (as cited in Fath, 2018) explained that in correlational research

designs, correlation statistical tests were applied to characterize and determine the strength of the correlation between two or more variables or score sets. The study aimed to demonstrate how students responded to various cognitive reading strategies and the degree of correlation between these strategies and reading comprehension. Quantitative research, which follows systematic, structured specifications, was used in this study (Sari, 2020). Fraenkel (2012) stated that correlation research examined potential relationships between two variables, which might have been more general in nature.

The researcher used the Survey of Reading Strategies (SORS) to assess students' cognitive reading strategies. The reading comprehension test, adapted from the college-level TOEFL reading comprehension section, was employed to evaluate students' reading proficiency. The collected data from questionnaires and reading tests were analyzed using the Statistical Package for Social Science (SPSS) to determine the correlation between variables. This study aimed to generalize its findings to a broader population (Fraenkel et al., 2012). The research population consisted of all students enrolled in the English Education study program at Universitas Islam Negeri Raden Fatah Palembang during the 2023–2024 academic year. The total population comprised 470 students.

The sample consisted of students from the fifth semester who had completed all stages of the reading subject. The researcher employed purposive sampling, which, according to Johnson and Christensen (2014), involves selecting individuals based on specific characteristics relevant to the study. Fifth-semester students enrolled in critical reading courses were chosen because their coursework aligned with cognitive reading strategies. Based on Fraenkel et al. (2012), a minimum sample size of 50 was required for correlational studies. The total sample in this study comprised 103 students from four classes.

To assess cognitive reading strategies, the researcher adapted the Survey of Reading Strategies (SORS) developed by Mokhtari and Sheorey (2002). The questionnaire contained

17 items categorized into problem-solving and support reading strategies. Respondents rated each item on a five-point Likert scale. The questionnaire provided quantitative data on students' cognitive reading strategies.

Table 1. Subcategories of SORS specific items

Strategy Category	Description	Number of Item
Problem solving strategies	Problem solving reading included employing techniques to read the text's more challenging passages.	3.4.6.8.9.11. 13.15
Support reading strategies	Support reading strategies entailed employing devices and strategy to comprehend the material.	1.2.5.7.10.1 2.14.16.17

The degree to which students use various reading strategies varies was referred to in this study as the "frequency of reading strategy use." Mokhtari and Sheorey (as cited in Sari, 2017) employed Oxford's (1990) scale, which was displayed in table 4, to examine the frequency of methods employed by the participants. The standard for interpretation mean scores could be seen as follows:

Table 2. Frequency of strategy use

Mean Score	Frequency Scale	Evaluation
4.5 - 5.0	High	Always or almost always used
3.5 - 4.4		Usually used
2.5 – 3.4	Medium	Sometimes used
1.5 – 2.4	Low	Generally not used
1.0 – 1.4		Never or almost never used

Students' reading comprehension was assessed using a multiple-choice test derived from the college-level TOEFL. The test contained 70 multiple-choice questions, with one point awarded for each correct answer. The students had 60 minutes to complete the test.

$$\text{Reading Test Score} = \frac{\text{Number of the right answer}}{\text{The Total number of the test}} \times 100$$

Students' qualifications were determined by their score, which indicated whether they are very poor, poor, average, good, very good, or excellent.

Table 3. Range of students' achievement

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80.00-100.000	A	Excellent
70.00-79.00	B	Very Good
60.00-69.00	C	Good
50.00-59.00	D	Average
0.10-49.00	E	Poor
00.00-0.00	F	Very Poor

The analysis of reading test was based on the score criteria by UIN Raden Fatah Palembang. The degree of achievement of the students in reading comprehension was determined based on the scores they obtained in this test.

C. Results and Discussion

1. Result

As shown in the table, the Pearson Product-Moment correlation coefficient results revealed that the correlation coefficient *r-count* was 0.618, which is higher than the *r-table* value of 0.193. According to Guilford as cited in Rosalina (2022), 0.41-0.70 was moderate. It meant that the category of correlation was moderate. In addition, the significance level (2-tailed) was 0.00, which is below the threshold of 0.05. It concluded that H_a was accepted and H_0 was rejected. This indicated that there was a significant correlation between students' cognitive reading strategies and their reading comprehension achievement at Universitas Islam Negeri Raden Fatah Palembang.

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Table 4. Correlations Analysis Results

		Cognitive Reading Strategies	Reading Comprehension Achievement
Cognitive Reading Strategies	Pearson Correlation	1	.618**
	Sig. (2-tailed)		.000
	N	103	103
Reading Comprehension Achievement	Pearson Correlation	.618**	1
	Sig. (2-tailed)	.000	
	N	103	103

The results indicated that students' cognitive reading strategies significantly influenced reading comprehension, with a value of 7.890, which is higher than the table value of 1.983, and a significance value (p) of 0.000, which is lower than the probability threshold of 0.05. This shows a significant effect of students' cognitive reading strategies on their reading comprehension achievement at Universitas Islam Negeri Raden Fatah Palembang, confirming that using cognitive reading strategies significantly impacts reading comprehension.

Table 5. Influenced Analysis Results

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.656	8.153		-.081	.936
	Cognitive Reading Strategies	1.001	.127	.618	7.890	.000

To determine the percentage of how cognitive reading strategies influence reading

comprehension achievement, the R-Square value was calculated. The analysis revealed an R-Square (R²) of 0.381. This indicates that the use of reading strategies significantly affected reading comprehension achievement, accounting for 38.1% of the variance, while 61.9% remains unexplained.

Table 6. Model Summary Results

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.618 ^a	.381	.375	11.646

This indicates that the use of reading strategies significantly affected reading comprehension achievement, accounting for 38.1% of the variance, while 61.9% remains unexplained.

2. Discussion

To strengthen the value of this research, interpretations are made based on the results of data analysis. Based on these findings, there was a significant correlation between the use of cognitive reading strategies and reading comprehension achievement. Apart from that, cognitive reading strategies had a significant effect on reading comprehension.

The results of statistics descriptive of SORS (Survey of Reading Strategies) showed the mean score of overall cognitive reading strategy used was 63.59 and the standard deviation was 9.085. This means that the participants' use of cognitive reading strategies when they read English was high. The mean score of reading comprehension achievement was 63.03 and the standard deviation was 14.743. This mean indicated that the reading comprehension was high. In addition, the level of sig. (2-tailed) between cognitive reading strategies and reading comprehension achievement was (.000). It showed that there was a significant correlation between the students' cognitive reading strategies and their reading comprehension

achievement in the level of moderate. Furthermore, the result of regression analysis of cognitive reading strategies and reading comprehension at Universitas Islam Negeri Raden Fatah Palembang ($r^2 = .381$, $p > .05$). This shows that using cognitive reading strategies significantly impacted reading comprehension achievement with the contribution of 38.1%.

When the result compared to those of other studies using the SORS as an instrument measuring participants' use of cognitive reading strategies, the result of this study was similar to that Nabilah (2021) by using the SORS written by Mokhtari and Sheorey (2002). The similarity between previous study and current research was the instrument used SORS from Mokhtari and Sheorey. The results of correlation between students' cognitive reading strategies and reading comprehension was significantly found correlated. Whereas the correlation coefficient of this research was found ($r = .371$). Thus, it can be concluded that students' cognitive reading strategies and students' reading comprehension was positively correlated. Moreover, Marzuki et al. (2018) states that cognitive reading strategies has a various strategy which considered can make the students be a proficient reader. Because the cognitive strategy is an internal process that control the learning process such as rehearsing, organizing, inferring, summarizing, deducing, imaging, transferring, elaborating. Hence, if the students can control the internal process well, they will be able to comprehend the text easily. Suyitno (2017) explains that applying cognitive reading strategies will help the students solve their own problem and deliver the ideas while reading. Furthermore, Wahyono (2019) concludes that the application of cognitive reading strategies is a must because this strategy has contributed to students' reading comprehension. Because they are mental routines or procedures to achieve cognitive goals.

In addition, the significant correlation between the use of strategies and reading comprehension achievement showed great importance to train the language learners to use the

appropriate strategies and employed them as frequently as possible. These strategies can lead the reader towards a new understanding of reading and help students to comprehend the message of the written text and communicate with the author properly. Therefore, it is of great importance for language educators to pay attention to their students and train them to employ strategies as frequently as possible. The reading strategies employed by students significantly impact their reading comprehension achievement. Students who utilize more effective strategies tend to achieve better reading comprehension. Hall (as cited in Sari, 2017) argues that there are two factors that influence the students' reading comprehension, reader factor and text factor. Reader factors include the background knowledge that readers bring to the reading process as well as the strategies they use while reading and their motivation and engagement during reading. Text factors include the author's ideas, the words the author uses to express those ideas, and how the ideas are organized and presented. Both reader factors and text factors affect comprehension.

In short, the total contribution of students' cognitive reading strategies and their reading comprehension achievement showed significant correlated and influenced. However, the unexplained factors also had contribution on students' reading achievement. The findings of the study may have some pedagogical implications for foreign language teachers, course designers, parents, next researchers, and students. Finally, this study was success in investigating the correlation and the influence between students' cognitive reading strategies and their reading comprehension achievement at Universitas Islam Negeri Raden Fatah Palembang.

C. Conclusion and Suggestion

Conclusion

After the research was conducted at the Universitas Islam Negeri Raden Fatah

Palembang, the major findings are summarized as follows. Firstly, according to the results of Pearson product moment correlations, it was found that students' cognitive reading strategies use significantly correlated with their reading comprehension and the category of correlation was moderate. The result of correlation analysis revealed that the correlation coefficient or the r (.618 > r -table .193). Then, the level of probability (p) significance (sig.2-tailed) was p (.000 < .05). It concluded that H_a was accepted and H_0 was rejected. As the result, there was a significant correlation between students' cognitive reading strategies and their reading comprehension at Universitas Islam Negeri Raden Fatah Palembang. Secondly, the result indicated that students' cognitive reading strategies significantly influenced on their reading comprehension achievement with the contribution of 38.1%. It meant that students' cognitive reading strategies significantly impacted on their reading comprehension achievement at Universitas Islam Negeri Raden Fatah Palembang.

Suggestion

Based on the previous conclusion about this study, the researcher offers some suggestions to English teachers, students, and the future researchers. First, this research is expected to giving about how importance of the reading strategies used, so that the teacher should introduce and train the students about reading strategies to the students and guide the students to choose an appropriate strategies in learning reading successfully.

Second, there are several recommendations for students in relation to this study. Students are suggested to read a lot and using all reading strategies, in order to improve their reading comprehension achievement. It is advised to them to practice their reading strategies more often in order to know which reading strategies they may lack and should be improved.

Third, this study is expected to be useful as a reference for future studies with similar problems or variables. The findings of this study were difficult to generalize because of a small number of samples. Therefore, it is recommended for future researchers to examine

larger samples.

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