

## Reading Strategies Used by EFL Students for Academic Texts

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### Abstract

Reading an academic text might pose a certain challenge for an English as a Foreign Language (EFL) learner with its formal form and specific jargons. Thus, finding the best strategies to face the challenge that work best for the learner is crucial. The current study aimed at finding the most used reading strategies used by 186 university students in an English Education Department of one private university in Indonesia and the different choice made by male and female students. Applying a cross-sectional survey design, the study utilized Survey of Reading Strategies (SORS) questionnaire by Mokhtari and Sheorey (2001) to collect the data. The study found that Problem-Solving Strategies were the most used strategy with the value of  $M=3.9881$ . Meanwhile, an independent t-test showed the value of sig 2-tailed of  $0.006 < 0.05$ , which purports that there was a statistically significant difference between male and female students in their choice of reading strategies although the strategies mostly chosen was the same, namely the Problem-Solving Strategies. This gave an implication that problem-solving strategies might be the ones students felt comfortable using and likely to be the ones used and encouraged in the teaching and learning process. The significant difference between the male and female students also implies that the latter have more awareness of using reading strategies that they needed.

**Keywords:** *English academic text; reading strategies; gender difference; problem-solving strategy; SORS*

### Introduction

As one of the four skills commonly taught in foreign language classrooms, reading has been continuously investigated from a different point of view. This is likely since, as a complex cognitive process of extracting meaning from a text to a memory (Maarof & Yaacob, 2011), the reading experience can be very personal and different from one person to another. It is prone to result in different experiences and conclusions.

Some language learners might find reading challenging. In the context of formal education, reading an academic text might be the most challenging for foreign language students. This is where strategies are usually employed to arrive at a successful comprehension.

Students will need a reading strategy so that they can plan their reading activity, make an improved comprehension (Poole, 2010), and have a clear sense of direction on what information they are absorbing (Aziz et al., 2011). A strategy as simple as taking simple notes, underlining or highlighting texts might help readers understand better the content and context of a reading text (Cogmen & Saracaloglu, 2009).

Research on reading skills has been vastly done since it entails an act that might not be so simple. Even though readers might act as a receiver of information from the outside, as Chen and Chen (2015) argued, they are active participants since they co-construct the meaning with the author by decoding clues from what they read. Reading can also be highly influenced by the reader's schema or prior knowledge of the information they read (Gilakjani & Ahmadi, 2011). These factors might result in the individualized experience of each reader.

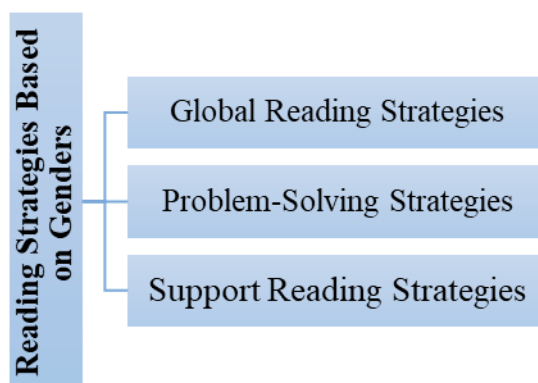
Since reading can be a personal and complex activity, different strategies might be applied by different readers. Reading strategies might be understood as an intentional mental process of a reader to pick the best steps to complete a reading task (Zhang & Wu, 2009). They are done intentionally and consciously so that readers can comprehend and store textual information from a text (Suharni, 2017). Reading strategies have been found to be correlated to reading proficiency (Alqahtani, 2019), self-efficacy (Okyar, 2021), searching strategies (Chen, 2020), and gender (Bećirović et al., 2018).

Gender is one aspect that has been studied continuously and has been found to significantly affect the students' reading strategies (Bećirović et al., 2018). Studies, however, have shown inconsistent results on the statistically significant differences between the frequency of the strategies used by female and male students (Lin, 2019; Wallace et al., 2021), which appeals to more studies on how genders connect to reading strategy use. Lin (2019) further argued that this inconsistency is likely caused by the ways data were collected in different settings, the various validity and reliability tests, and the different conditions of the respondents in different contexts of the studies. This study tried to find the answer in the Indonesian higher education context.

## **Theoretical Framework**

A Scholars have recognized different types of reading strategies. Some scholars recognized that the strategies could be cognitive and metacognitive, with the former referring to the actions of manipulating or changing the language to gain cues and the latter being the ways readers self-checking their reading or their understanding (Aghaie & Zhang, 2012; Chen & Chen, 2015). Another categorization commonly used by scholars are the ones measured by a set of a questionnaire developed by Sheorey and Mukhtari (2001) and Mokhtari and Sheorey (2002) called Survey of Reading Strategies (SORS). The survey divided reading strategies into three groups: Global Reading Strategy, Problem Solving Strategy, and Support Reading Strategy. Global Reading Strategy is a set of deliberate, carefully planned techniques readers use to track or control their reading. Problem-solving strategies are targeted and oriented actions and processes the reader uses when dealing directly with problems of understanding a piece of textual information. The last strategies, Support Reading Strategies, are the ones done by many students without they realize, such as highlighting infor-

mation, asking for others' help, and checking dictionaries, or simply put, these are simple support tools designed to help the reader understand language. The current study was conducted based on the SORS concept that can be summarized in the following diagram:



Picture 1. *Theoretical Framework*

## Literature Review

A Various studies have used SORS to investigate reading strategies concerning many factors. Motivation has been found to be an influence on the choice of reading strategies; students with the highest motivation tend-ed to use all three categories of reading strategies compared to students with medium and low motiva-tion (Zarei, 2014). Another factor which was highly investigated is readers' gender. Investigating high-school students in Taiwan, Chen and Chen (2015) found that female students had a higher overall mean score for reading strategies. However, both males and females reported a high frequency of use of reading strategies. In addition, in the study, both genders used Global Reading Strategies and Problem-Solving Strategies often, although female students used them more frequently. Finally, Support Reading Strategies were used moder-ately by both genders; female students used them slightly more often. This is slightly dif-ferent from the study done at Turkey university by Okyar (2021), which found Problem-Solving strategies to be most fre-quently used while the other two strategies were moderately used. The study, however, corrobo-rates the pre-vious research in that it also found that female students use the strategies more frequently and that there was a significant difference between the two genders in their reading strategies.

Another study was conducted on Thailand's university students who took English for Special Purpose classes (Saengpakdeejit & Intaraprasert, 2009). In the study, Saengpakdeejit and Intaraprasert (2009) adopt-ed some items from SORS but not all since the preliminary interviews and observations; they found more strategies not mentioned in SORS. They labelled the strategies as Actual Reading Strategies (AR), which are the actions taken when facing academic reading texts, and Textual Comprehension Enhancement Reading

Strategies (CE), which is a mechanism to help understand vocabulary in the reading texts. The study also found that the mean scores of AR and CE in female students were higher than the male counterparts. It also found that female and male students with higher proficiency used both strategies more frequently than those with moderate and lower proficiency.

Saengpakdeejit (2014) did another study on Thailand university students and found that female students used all three strategies more frequently than male students. However, the mean score of Problem-Solving Strategies and Support Strategies are significantly higher than the male students. Similarly, a study of science-oriented university students in Thailand by Boonkongsan (2014) also found that female students used the overall strategies more significantly than the male students, especially in Support Strategies. This result is in line with two studies conducted in Indonesian contexts, where female students showed a higher frequency of reading strategies (Fauzi & Ashadi, 2019; Rianto, 2021). A study in the Jeddah context also found an overall significant difference between genders in their reading strategies (Alqahtani, 2019).

Zare and Othman (2013), using a different reading strategy inventory to investigate Malaysian ESL learners' reading strategies, also found a similar result, which stated that male and female reading strategies were significantly different. In the study, female students also had a higher mean score. This is also in line with the study of Indian ESL students by Madhumathi and Ghosh (2012), which also found that female students used more reading strategies than male students. However, the significant difference lay in the Problem-Solving Strategies, while other strategies were not significantly different.

In a different context, a study by Lien (2011) on first-year students in English majors in Taiwan university came to a different result from the previous studies discussed. The study found that male students used reading strategies more than female students. Regarding the three categories in SORS, male students used Global Reading Strategies more, while female students used Problem Solving Strategies more. This is the only study reviewed that found male students to show higher frequency in using the strategies.

A study conducted on student-teachers in Oman showed a different result (Amer, Barwani, and Ibrahim (2010). Unlike the previous study, this study did not find any significant difference between male and female students in their use of overall reading strategies and the three categories measured in SORS. This corroborates a study by Al-Sohbani (2013) on Yemeni university EFL learners and the study conducted at a Chinese university by Wallace et al. (2021), which found no significant difference between the two genders in their use of reading strategies. The study found that male and female students actively used all three strategies measured in SORS. However, Problem-Solving Strategies were used slightly more.

All of these studies mentioned previously have discussed how genders correlate to students' use of reading strategies in academic contexts, especially in a higher education context in different countries. More studies found a significant difference between female and male students, with the former using the strategies more

frequently than the latter (Chen & Chen, 2015; Boonkongsaen, 2014; Madhumathi & Ghosh, 2012; Saengpakdeejit, 2014; Saengpakdeejit & Intaraprasert, 2009; Zare & Othman, 2013). Only one study found otherwise (Lien, 2011). Fewer studies found no significant difference between the two genders (Amer et al., 2010; AL-Sohbani, 2013). These studies were primarily done in a university context in different countries. The participants were also quite diverse in that there were high-school students, students of English majors, non-English majors, and student-teachers. Thus, these factors might be of influence the differing results.

In addition to the studies mentioned earlier, a myriad of studies has been conducted on reading strategies. One study developed a survey of reading strategies (SORS), an adaptation of a previous survey set (Mokhtari & Sheorey, 2002). Various studies later used this survey tool to measure students' perceived reading strategies. Other studies have investigated students' choice of reading strategies, the ones considered most and least important, and whether the strategies varied among different ages, gender, and academic discipline (Akarsu & Harputlu, 2014), students' awareness level of reading strategies in reading academic materials (Aziz et al., 2011), students' metacognitive reading strategies (Suharni, 2017), students' online reading strategies (Amer et al., 2010), different choices between strong and weak readers (Shih & Reynolds, 2018). Other studies have also been done to investigate high school students reading strategies and the difference between genders (K. Chen & Chen, 2015), the frequency difference in using reading strategies between male and female students with different proficiencies (Amer et al., 2010), (Saengpakdeejit & Intaraprasert, 2009), (Zare & Othman, 2013), and the awareness on reading strategies between the two genders (Aivazoglou & Griva, 2014). Amid the myriad of studies, this current study was expected to add to the literature on how genders play a part in the discussion on reading strategies. The study tackled this topic in a higher education context where the participants were all English student-teachers in Indonesia, who have not been the focus of the previous studies. In guiding the investigation, two research questions were developed:

1. What are the reading strategies most used by EFL student-teachers in reading academic text?
2. Is there a statistical difference between male and female student-teachers' strategies in reading academic texts?

## **Methodology**

The current study uses a quantitative cross-sectional survey design, which means that the data were collected at one point in time to see the trend in behaviour (Cohen, Manion, & Morison., 2011) related to reading strategies. In the end, the study tried to prove the following hypothesis:

**H1:** There is a statistical difference between male and female students in their choice of reading strategies for academic texts.

Conducted in one English teacher-training program in Indonesia, the study involved student-teachers in their sixth semester or third year. With a population of 223, using a 95% confidence level and 4% confidence interval, 150 should be the minimum number of samples. The study used a random stratified sampling technique. This technique divides the population into homogenous groups, each containing subjects with similar characteristics (Cohen et al., 2011). The division is to decide the number of male and female samples. To decide the number, the Slovin formula is used. The calculation can be seen below:

Sample of male students	Sample of female students
$n = \frac{N}{1+N(e^2)}$	$n = \frac{N}{1+N(e^2)}$
$n = \frac{57}{1+57(0.04^2)}$	$n = \frac{166}{1+166(0.04^2)}$
$n = \frac{57}{1.0917}$	$n = \frac{166}{1.2656}$
<b><math>n = 52</math></b>	<b><math>n = 131</math></b>

*n*: sample size    *N*: population size    *e*: margin of error

Of 223 total population, 57 (or 24%) are male students and 166 (or 76%) are female students. Based on the calculation above, the minimum number of total samples is  $52 + 131 = 183$ .

A set of questionnaires called Survey of Reading Strategies (SORS) composed by Mokhtari and Sheorey (Sheorey & Mokhtari, 2001) was used to collect the data. The set consists of 30 items which are categorized into three types of reading strategies, namely Global Reading Strategy (items 1, 3, 4, 6, 8, 12, 15, 17, 20, 21, 23, 24, 27), Problem Solving Strategy (7, 9, 11, 14, 16, 19, 25, 28), and Support Reading Strategy (2, 5, 10, 13, 18, 22, 26, 29, 30).

Initially written in English, the items were translated into Indonesian to ease the respondents' understanding since all were of Indonesian origin. To ensure that the translated version was valid, five students and three experts were invited to validate. The students were to check their understanding, and the experts were to validate and suggest revisions if needed. The result showed that of 30 items, item number 26 was of low validity. Therefore, the item was eliminated from the set.

After validation, the questionnaire was checked on its reliability or internal consistency. 30 pilot respondents completed the questionnaires for the purpose. A statistical tool analysis showed that Cronbach's alpha score was 0.946, which means that it was highly reliable.

After distributing the questionnaire through a Google Form, the data were analyzed using descriptive and inferential statistics. Descriptive statistics were used to answer the first research question and part of the second research question. This was done by creating five categories using the formula  $\frac{Max-Min}{5} = \frac{5-1}{5} = 0.8$ . From this calculation, the categories of reading strategies most used by students are as follows:

*Table 1. Reading strategies used mainly by students*

Scale	Category
1.0-1.8	Never
1.9-2.6	Rarely
2.7-3.4	Sometimes
3.5-4.2	Often

Finally, to answer the second research question on the difference between male and female students, a t-test was applied. Prior to the test, a normality test and homogeneity test were performed through a statistical tool. During the calculation, 3 (three) data from 3 female students were added to the collection of 183 data. The addition was due to the anomaly of the first test attempt in the form of 2 outliers. Therefore, finally, 186 data were calculated in the t-test.

The Kolmogorov-Smirnov test showed that the value of sig 2-tailed was  $0.058 > 0.05$ , which means that the data were normal. Meanwhile, the result of the Levene test showed that the sig value was  $0.195 > 0.05$ , which means that the data were homogeneous. These test results mean that the t-test could be performed. The result is discussed in the next section.

## **Results and Discussion**

The data collected from 186 respondents have resulted in statistical numbers to answer the questions about the reading strategies most used by the student, the ones most used by the male and female students, and the difference between them.

### **The reading strategies most used by the students in reading academic texts**

The current study used the reading strategy categories proposed by Mokhtari and Sheorey (2002), which include Global Reading Strategies (GLOB), Problem Solving Strategy (PROB), and Support Reading Strategy (SUP). Each category was measured using several items in a questionnaire set. The result of the analytical tool calculation is as follows:

*Table 2. Reading strategies used by students*

<b>Category</b>	<b>N</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Mean</b>	<b>Std. Deviation</b>
GLOB	186	2.62	4.92	3.7677	.49902
PROB	186	2.50	5.00	3.9881	.49322
SUP	186	2.25	5.00	3.8451	.54499
Valid N (listwise)	186				

The table shows that all three strategies fall into the category of ‘often’ used by the students since all of them reached a mean score between 3.5 – 4.2. However, if the Standard Deviation is observed, the lowest score (0.49322) is in the Problem-Solving Strategy. This means that the data in this category were minimally spread out and, therefore, were the best for analysis.

The result means that students in the context of the study preferred the strategies that are taken when confronted directly by the text – the actions that they do to try to comprehend the text, such as guessing the meaning of words, adjusting the reading speed, reading out loud, and the like (Mokhtari & Sheorey, 2002). In addition, when compared to the previous studies, this result corroborates with the study by Azis et al. (2011), Chen and Chen (2015), Al-Sohbani (2013), Saengpakdeejit (2014), which also found the Problem-Solving Strategy as the one more or most frequently used strategy in reading academic texts. The result, however, is different from the study by Jafari and Shokrpour (2012), which found the Support Reading Strategy the most used one by students. It is unclear what caused the different results. Age and education level seem to be not necessarily the cause since the current study's respondents mimic the ones in the study of Azis et al. (2011), Al-Sohbani (2013), Saengpakdeejit (2014) and Jafari and Shokrpour (2012) in that regards.

### **The reading strategies most used by male and female students**

Upon looking at the statistical result of each gender, the study found that the strategies most used by both male and female students are the same, namely the Problem-Solving Strategies (PROB). The means of each category can be seen in the following table:

*Table 2. Reading strategies used by students*

<b>Gender</b>	<b>Category</b>	<b>Mean</b>	<b>Std. Deviation</b>
Male	GLOB	3.7129	0.7583
	PROB	<b>3.9062</b>	0.7434



	SUP	3.5119	0.07006
Female	GLOB	3.7890	0.04074
	PROB	<b>4.0199</b>	0.04087
	SUP	3.9744	0.4304

The table shows that the highest mean score results from the data of Problem-Solving Strategies with 3.9062 in male students and 4.0199 in female students, even though all strategies are in the "often" category. To answer the second research question of whether there is a statistical difference between the two genders' choice of strategies, a t-test was applied. The test will decide whether the two genders have a statistically significant difference in their strategies for reading academic text. This will decide if the hypothesis mentioned in the beginning is accepted.

*Table 3. Results of Independent t-test*

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Reading Strategies	Equal variances assumed	1.644	.201	-2.770	184	.006	-5.60218	2.02265	-9.59275	-1.61161
	Equal variances not assumed			-2.666	86.239	.009	-5.60218	2.10113	-9.77892	-1.42544

In the above table, it can be seen that the value of sig = 0.201.  $\rho$  value is considered as significant if  $\text{Sig} < 0.05$ . This means that the  $\rho$  value, in this case, is not significant ( $\text{Sig} > 0.05$ ), which denotes that the equal variances are assumed or homogenous. This signifies that the first row of the data is the one to be used. The Sig. (2-tailed) value is 0.006, or  $< 0.05$ . This suggests a significant difference between male and

female students' strategies for reading academic texts. Therefore, hypothesis (H1) is accepted. Although both genders chose the same category of strategies, the statistically different result might purport that one of the two used the strategies more intensively. In this case, the female students with the higher mean score of 4.0199.

The result corroborates the study by Saengpakdeejit and Intaraprasert (2009), Chen and Chen (2015), Saengpakdeejit (2014), Boonkongsan (2014), Zare and Othman (2013), Madhumathi and Ghosh (2012), (Rianto, 2021), (Alqahtani, 2019), which also found a significant difference between male and female students' reading strategies, with the latter having the higher mean score. One explanation is likely because female students were found to be more aware of their reading strategies (Aivazoglou & Griva, 2014) or likely have higher motivation, which can also be influenced (Zarei, 2014). This result, however, is the opposite of what was found in the study by Amer et al. (2010), Akarsu and Harputlu (2014), Al-Sohbani (2013), and (Wallace et al., 2021), which found no significant difference between male and female students in their reading strategies.

Interestingly, the Problem-Solving strategies are chosen mainly by students in different studies. This is likely because the strategies are the ones that students must take since they are the ones taken when faced the immediate problems.

## Conclusion

The current study sums up that in the context of the study, the most used strategies in reading academic texts were the Problem-Solving Strategies. In addition, the study found a statistically significant difference between male and female students in their use of the strategies despite their similar choice of type. Since the study corroborates and simultaneously disagrees with similar previous studies, this might imply a more thorough look at the influence of different factors such as the age, education level, majors, cultural background, and motivation of the students needs to be conducted further.

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