

# Exploring the Link Between Reading Difficulties and Reading Strategies

<sup>1</sup>Zulaikha Khairuddin; <sup>2</sup>Nadia Tun; <sup>\*3</sup>Siti Sarah Roselan; <sup>4</sup>Ahmad Aminuddin Soopar; <sup>5</sup>Noor Hanim Rahmat

<sup>1,3,4,5</sup> Akademi Pengajian Bahasa, Universiti Teknologi MARA

<sup>2</sup>Fakulti Pengajian Umum dan Pendidikan Lanjutan, Universiti Sultan Zainal Abidin

DOI: <https://doi.org/10.47772/IJRISS.2026.100700281>

Received: 15 July 2026; Accepted: 20 July 2026; Published: 30 July 2026

## ABSTRACT

Reading is fundamental to language development, yet many ESL and EFL learners continue to encounter significant comprehension difficulties. These challenges are often linked to limited vocabulary, weak decoding skills, and insufficient strategic awareness. Reading strategies, particularly cognitive and metacognitive techniques, are essential in supporting comprehension and improving performance. This study investigates whether significant relationships exist between reading difficulties and reading strategies across demographic variables, including gender, age, and reading preferences. It also examines learners' perceptions of their reading difficulties as well as their use of reading strategies. The study explores the overall relationship between reading difficulties and reading strategies. The research aims to provide a comprehensive understanding of how individual differences and perceptions influence the interplay between reading challenges and strategic reading behaviours. To achieve the objective of the research, a 5 Likert-scale survey based on reading difficulties (Abeeleh and Al-Sobh, 2021) and online reading strategies proposed by Amer et al (2010) is utilised. This survey focuses on reading difficulties, global reading strategies, problem-solving reading strategies and support reading strategies. The survey obtained responses from 130 participants. Findings of the research suggested that, relating to reading difficulties, it is pertaining to the students' perception that made them feel that reading academic texts is a difficult task. Looking at the global strategies and problem-solving strategies, these learners have the tendency to refocus their attention, so that they are able to obtain better comprehension of the academic texts. In relation to supporting reading strategies, the learners depended on their translation abilities, as well as referred to other materials to gain more understanding. Several pedagogical implications are also addressed in the present study.

**Keywords:** Reading Strategies, Online Reading Strategies, Quantitative Research, Academic Text

## INTRODUCTION

### Background of Study

Reading is widely recognised as one of the most essential skills in language learning and academic achievement because it enables learners to access information, develop knowledge and construct meaning from texts (Snow, 2002). In English as a Second Language (ESL) and English as a Foreign Language (EFL) context, reading plays a crucial role as learners rely heavily on written materials to improve vocabulary knowledge, grammatical competence, critical thinking and overall language proficiency (Grabe & Stoller 2020). Despite its importance, research have also indicated that ESL and EFL learners often struggle with vocabulary recognition, inference, identifying main ideas and comprehending texts effectively (Nanda & Azmy, 2020; Vanguri et al., 2025). These persistent challenges demonstrate that reading difficulties remain a major concern in language education despite extensive research in the field.

Reading difficulties generally refer to problems encountered by earners in decoding, fluency, vocabulary recognition, comprehension and meaning-making during the reading process (Snow, 2002). Snow (2002) explained that reading comprehension involves the simultaneous process of extracting and constructing meaning

through interaction with written language. Learners who experience difficulties in these processes often struggle to understand texts effectively, which subsequently affects their academic achievement and confidence in reading tasks (Snow, 2002). Chall (1983) further argues that reading difficulties may emerge when learners fail to transition from 'learning to read' to 'reading to learn' especially when they lack adequate decoding and comprehension skills. In ESL and EFL contexts, reading difficulties are often associated with limited vocabulary knowledge, unfamiliar sentence structures, low motivation and reading anxiety (Grabe & Stoller, 2020). Furthermore, post-pandemic educational disruptions have intensified literacy challenges among learners worldwide, resulting in widened learning gaps and declining reading engagement (UNESCO, 2022).

In addressing these challenges, researchers have increasingly focused on reading strategies as an important factor in improving learners' reading comprehension and reading performance (Mokhtar & Reichard, 2002). Reading strategies refer to conscious cognitive and metacognitive techniques employed by readers to facilitate understanding and regulate the reading process (Oxford, 2017). Mokhtari and Reichard (2002) defined reading strategies as purposeful actions that readers use before, during and after reading to enhance comprehension. These strategies may include predicting, skimming, scanning, summarising, questioning, inference, monitoring comprehension and using contextual clues to interpret meaning (Oxford, 2017). Effective readers are generally more aware of how and when to apply appropriate reading strategies, whereas struggling readers often lack strategic awareness and fail to regulate their comprehension effectively (Mokhtari & Reichard, 2002). A study by Pahrizal (2024) also demonstrated that metacognitive reading strategies may influence learners' ability to monitor comprehension, solve reading problems and improve overall reading achievement.

The relationship between reading difficulties and reading strategies has become an important area of investigation as learners' use of reading strategies may determine how effectively they cope with reading challenges (Singh et al., 2023). Research has shown that learners who actively employ cognitive and metacognitive reading strategies tend to demonstrate better comprehension performance than learners who use limited or ineffective strategies (Habok et al., 2024). Strategic reading instruction has also been found to improve learners' reading comprehension skills and foster positive perceptions toward reading activities (Singh et al., 2023). These findings suggest that reading strategies may play a crucial role in helping learners overcome reading difficulties and become more independent readers.

Although many studies have investigated reading difficulties and reading strategies separately, the topic remains relevant due to persistent literacy challenges that continue to affect learners' reading development, comprehension ability and academic performance across educational settings (Vanguri et al., 2025). The increasing dependence on digital learning environments has transformed learners' reading behaviours and introduced new challenges related to digital literacy and information processing (Delgado et al., 2021). Learners are now demanded to process large amounts of online information while simultaneously applying strategic reading skills to evaluate and comprehend digital texts effectively (Delgado et al., 2021). In contrast, Delgado et al., (2021) also reported that many learners still demonstrate insufficient strategic awareness when engaging with digital reading materials, which contributes to comprehension difficulties and reduced reading performance. There are also inconsistencies regarding which reading strategies are most effective for addressing specific reading problems among different learner groups (Oxford, 2017). This indicates the needs for further research to explore the relationship between reading difficulties and reading strategies across various educational and/or linguistics contexts.

Therefore, this study seeks to explore the link between reading difficulties and reading strategies among learners. By examining how learners' reading challenges relate to their strategic reading behaviours, this study aims to contribute to the growing body of literature on reading comprehensions and language learning. The findings may provide useful insights for educators in designing more effective reading instructions and/or intervention programmes that support learners in overcoming reading difficulties and developing strategic reading competence in ESL or EFL classrooms.

## Statement of Problem

Reading comprehension remains a major challenge among ESL and EFL learners despite continuous developments in literacy instruction and language education practices (Fatima, 2026). Recent studies have

revealed that many learners continue to struggle with vocabulary recognition, comprehension, summarising ideas, understanding unfamiliar words, pronunciation and extracting meaning from texts during reading activities (Ammar et al., 2026; Vanguri et al., 2025). These difficulties negatively may affect learners' academic performance, motivation and engagement in language learning environments (Vanguri et al., 2025). In higher education contexts, reading challenges become more critical because learners are expected to comprehend complex academic texts independently and apply higher-order thinking skills during reading tasks (Grabe & Stroller, 2019).

Current studies have highlighted the importance of reading strategies in helping learners improve comprehension and overcome reading difficulties (Singh et al., 2023). Cognitive and metacognitive reading strategies such as skimming, inferencing, rereading, monitoring comprehension and using contextual clues have been identified as important tools that support learners in processing texts more effectively (Li et al., 2022; Habok et al., 2024; Ammar et al., 2026). Research has shown that learners who employ effective reading strategies tend to demonstrate better comprehension performance and more active engagement in reading tasks compared to those who lack strategic awareness (Singh et al., 2023). In addition, explicit strategy instruction has also been found to improve learners' reading comprehension (Li et al., 2022).

However, despite the growing emphasis on reading strategies, many learners still experience a great number of reading difficulties when engaging with both printed and digital texts (Delgado et al., 2018). Recent findings indicated that struggling readers often rely on translation practices, rereading strategies, dictionary use and problem-solving strategies when encountering comprehension difficulties, suggesting reliance on immediate comprehension support during online reading activities (Ammar et al., 2026). Singh et al (2023) further indicated that ESL learners tended to depend on support strategies like translation practices, dictionary use and rereading when encountering reading difficulties suggesting that learners may not always apply higher-level reading strategies effectively across different reading contexts.

Previous studies have often focused on either reading difficulties or reading strategies independently rather than examining the relationship between the two constructs comprehensively within different learning contexts (Ammar et al., 2026). For instance, some studies concentrated on identifying learners' reading comprehension problems and barriers, while others examined the effectiveness of strategy-based instruction in improving reading performance and comprehension outcomes across different learning contexts (Li et al., 2023). As a result, there remains a need to further understand how learners' reading difficulties influence their selection and use of reading strategies, particularly in ESL and EFL learning contexts. Understanding this relationship is crucial as learners experiencing different types of reading difficulties may require different strategic approaches and instructional support to improve reading comprehension effectively.

Recent studies have also highlighted several directions for future research related to reading difficulties and reading strategies. Singh et al (2023) suggested extending investigations into reading strategy use across different learner populations and educational contexts to better understand how strategic behaviours relate to reading challenges among ESL learners. In addition, Vanguri et al. (2025) emphasised the importance of examining reading difficulties alongside learner support systems and intervention approaches to better understand factors influencing reading development. These recommendations indicate the continuing need to explore the relationship between reading difficulties and reading strategies among learners. Therefore, this study is conducted to explore the link between reading difficulties and reading strategies among learners.

## **Objective of the Study and Research Questions**

This study is done to explore reading difficulties and reading strategies among learners. Specifically, this study is done to answer the following questions;

- Is there a significant relationship between (a) reading difficulties and (b) reading strategies across gender?

H<sub>01</sub>: There is no significant relationship between (a) reading difficulties and (b) reading strategies across gender

- Is there a significant relationship between (a) reading difficulties and (b) reading strategies across ages?

H<sub>02</sub>: There is no significant relationship between (a) reading difficulties and (b) reading strategies across ages

- Is there a significant relationship between (a) reading difficulties and (b) reading strategies across reading preferences?

H<sub>03</sub>: There is no significant relationship between (a) reading difficulties and (b) reading strategies across reading preferences

- How do learners perceive their reading difficulties?
- How do learners perceive their use of reading strategies?
- Is there a significant relationship between reading difficulties and reading strategies?

H<sub>04</sub>: There is no significant relationship between reading difficulties and reading strategies

## LITERATURE REVIEW

### Theoretical Framework of the Study

This study is guided by the Interactive Theory of Reading proposed by Rumelhart (1977). The theory explains reading as a process involving the interaction of multiple knowledge sources to construct meaning from a text. Unlike the bottom-up model, which focuses on decoding linguistic information, and the top-down model, which emphasises the use of prior knowledge and prediction, the interactive model combines both approaches. According to Rumelhart (1977), readers simultaneously process textual information while drawing upon prior knowledge and experiences to achieve comprehension. The interactive model is particularly relevant in second language reading because learners need to integrate linguistic knowledge and background knowledge during the reading process. Ahsani and Budairi (2022) explain that reading comprehension occurs through the interaction of bottom-up and top-down processing, allowing readers to decode textual information while making inferences and constructing meaning.

Similarly, Grabe and Stoller (2020) describe reading as a strategic and interactive process that requires readers to actively engage with texts in order to understand information effectively. Snow (2002) further states that reading comprehension occurs when readers extract information from texts and integrate it with what they already know. Successful reading also requires readers to regulate their understanding while interacting with texts. Mokhtari and Reichard (2002) explain that readers employ metacognitive strategies to monitor and evaluate comprehension during reading. Likewise, Oxford (2017) argues that successful language learners utilise self-regulated strategies to facilitate learning and comprehension. These strategies allow learners to identify comprehension difficulties and apply appropriate actions to overcome them during reading.

For this study, Interactive Theory of Reading provides an appropriate framework to explain how second language learners interact with texts during reading. The theory suggests that reading comprehension is achieved through the interaction of textual information, prior knowledge and strategic processing. Therefore, this study explores the interactive reading strategies employed by second language learners during the reading process.

### Interactive Reading in Second Language Learning

Many studies have been conducted to investigate the role of interactive reading in enhancing reading comprehension and reading ability among second language learners. Interactive reading has received considerable attention because it encourages learners to participate actively in the reading process through interaction with texts, teachers and peers. This is particularly relevant to the concerns raised in Chapter 1, where ESL and EFL learners were reported to experience difficulties related to vocabulary recognition, comprehension, inference-making and reading anxiety (Nanda & Azmy, 2020; Vanguri et al., 2025). As learners continue to encounter reading challenges in both traditional and digital learning environments, researchers have increasingly

explored interactive reading and strategic reading behaviours as possible approaches to support comprehension and improve reading performance.

The study by Phichiensathien (2021) was conducted to investigate the effect of interactive reading on second language reading ability. The study involved 56 English major students enrolled in an English Reading and Writing course. Interactive reading activities were implemented using Padlet and Pubhtml5, and students completed pre-tests and post-tests to measure changes in reading ability. The findings revealed that students demonstrated improvement in reading ability after participating in the interactive reading programme. The study concluded that interactive reading contributed positively to second language reading development. The findings are particularly important because Chapter 1 highlighted that many learners continue to experience reading comprehension difficulties despite years of language instruction. The improvement in reading ability reported by Phichiensathien (2021) suggests that interactive reading may provide learners with greater opportunities to engage actively with texts and develop stronger comprehension skills.

Additionally, another study by Ceyhan and Yıldız (2021) examined the effect of Interactive Reading Aloud (IRA) on students' reading comprehension, reading motivation and reading fluency. The study employed a mixed experimental design involving 62 students who were divided into two experimental groups and one control group. Reading comprehension rubrics, reading motivation scales and fluency assessments were used as instruments. The findings showed that students who participated in Interactive Reading Aloud activities achieved higher levels of reading comprehension, reading motivation and reading fluency compared to students who received conventional instruction. The researchers concluded that interactive reading activities positively influenced students' reading development. The findings also relate closely to the discussion in Chapter 1 regarding learners' reading motivation and confidence. Since reading anxiety and lack of engagement may hinder comprehension, the improvement in reading motivation and fluency reported by Ceyhan and Yıldız (2021) suggests that interactive reading can contribute positively to learners' reading experiences.

Another study by Johnson et al. (2017) investigated the development of an interactive narrative environment for adult literacy learners. The study utilised the Interactive Strategy Trainer for Active Reading and Thinking (iSTART) system to provide reading strategy instruction and reading practice. Several modifications were made to the system to support adult learners, including additional strategy modules, authentic reading materials and interactive narratives. The findings indicated that the interactive environment provided meaningful opportunities for learners to practise reading strategies and improve reading comprehension. The study highlighted the value of interactive learning environments in supporting reading development. This finding is significant because Chapter 1 highlighted that learners often struggle with comprehension and meaning construction during reading activities. The use of interactive reading environments may provide additional support that enables learners to overcome these challenges through strategic engagement with texts.

More recently, Lin et al. (2026) explored interactive reading patterns among 53 postgraduate second language learners engaged in GenAI-assisted critical reading activities. The study investigated how learners interacted with AI-generated reviews, chatbot feedback and original academic texts while completing reading tasks. The findings identified different interaction patterns among learners and revealed that students who demonstrated more extensive interaction achieved better reading outcomes. The study concluded that interaction plays an important role in supporting reading comprehension and critical reading performance. The findings also support concerns raised in Chapter 1 regarding the increasing complexity of digital reading environments. As learners are required to process large amounts of online information, interaction and strategic engagement become increasingly important for successful comprehension.

Apart from studies focusing specifically on interactive reading, researchers have also examined the role of reading strategies in supporting reading comprehension. Li et al. (2022) investigated the impact of reading strategy instruction on reading comprehension, strategy use, motivation and self-efficacy among university students. The findings revealed that reading strategy instruction significantly improved learners' reading performance and strategy use. Similarly, Habók et al. (2024) reported that reading strategy use positively influenced online reading comprehension achievement. Pahrizal et al. (2024) further found that metacognitive reading strategies contributed positively to reading comprehension among EFL learners. These studies are particularly relevant to the discussion in Chapter 1, which highlighted reading strategies as an important means

of helping learners overcome reading difficulties. Collectively, the findings suggest that strategic reading behaviours may support learners in monitoring comprehension, solving reading problems and improving reading performance.

The studies above indicate that interactive reading and reading strategy use contribute positively to reading development among second language learners. Previous studies have reported improvements in reading ability, reading comprehension, reading fluency, reading motivation and reading performance through various forms of interactive reading and strategy instruction. These findings are closely related to the issues highlighted in Chapter 1, where reading difficulties such as vocabulary limitations, comprehension problems, reading anxiety and challenges associated with digital reading environments were identified as persistent concerns among ESL and EFL learners. Collectively, the studies suggest that strategic interaction with texts may help learners manage reading challenges more effectively and improve comprehension outcomes. However, while many studies have examined the effectiveness of interactive reading and reading strategies in improving reading performance, fewer studies have specifically explored how learners' reading difficulties relate to their use of reading strategies. Therefore, this study investigates the relationship between reading difficulties and reading strategies among learners.

### Conceptual Framework of the Study

Approaching academic reading requires the use of a range of cognitive and metacognitive strategies, which many learners find challenging. Readers differ in how they process texts, and these differences influence the strategies they employ to extract meaning and information (Rahmat et al., 2020). Some readers are able to adjust their strategies flexibly depending on the difficulty of the text, while others struggle due to limited strategic awareness or experience. Abeeleh and Al-Sobh (2021) identify two major factors that contribute to reading difficulties: text-related factors, such as complex vocabulary, unfamiliar structures, and dense content, and affective factors, particularly reading anxiety. Anxiety can hinder comprehension by reducing concentration and confidence during reading tasks. To cope with these challenges, readers often rely on specific reading strategies. Amer et al. (2010) categorize reading strategies into three main types: global strategies, which involve planning and previewing the text; problem-solving strategies, which are used when comprehension breaks down; and support strategies, such as note-taking and using reference materials. Understanding the relationship between reading strategies and reading difficulties is essential, as effective strategy use can help learners overcome challenges and improve academic reading performance. With reference to Figure 1 below, this study explores the relationship between reading difficulties and reading strategies.

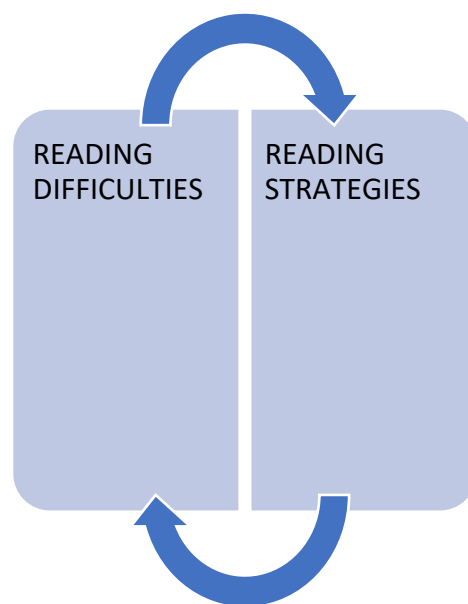


Figure 1- Conceptual Framework of the study Is there a relationship between Reading Difficulties and Reading Strategies?

## METHODOLOGY

This quantitative study is done to explore reading difficulties and reading strategies among learners. A convenient sample of 130 participants responded to the survey. The instrument used is a 5 Likert-scale survey and is rooted from Abeeleh, and al Sobh, 2021 ; Amer, et.al ,2010) to reveal the variables in table 3 below. Table 1 below shows the categories used for the Likert scale; 1 is for Strongly Disagree, 2 is for Disagree, 3 is for Undecided, 4 is for Agree and 5 is for Strongly Agree.

Table 1- Likert Scale Use

| NO | SCALE             |
|----|-------------------|
| 1  | Strongly Disagree |
| 2  | Disagree          |
| 3  | Undecided         |
| 4  | Agree             |
| 5  | Strongly Agree    |

Table 2- Distribution of Items in the Survey

| SECTION | VARIABLE                                          | CONSTRUCT       | Item | Tot       |
|---------|---------------------------------------------------|-----------------|------|-----------|
| B       | Reading Difficulties<br>(Abeeleh & Al-Sobh, 2021) | Text-Related    | 8    | 13(.855)  |
|         |                                                   | Anxiety         | 5    |           |
|         |                                                   |                 |      |           |
| C       | READING STRATEGIES<br>(Amer, et.al., 2010)        | Global          | 15   | 31 (.950) |
|         |                                                   | Problem-Solving | 7    |           |
|         |                                                   | Support         | 9    |           |
|         |                                                   |                 |      | 44(.926)  |

Table 2 shows the distribution of items in the survey. Section B has 13 items on reading difficulties. Section C has 31 items on reading strategies.

Table ?- Reliability Levels, Cronbach's Alpha Ranges, and Their Interpretations

| Reliability Level | Cronbach's Alpha range | Interpretation                           |
|-------------------|------------------------|------------------------------------------|
| Excellent         | 0.9 and above          | Indicates very high internal consistency |

|              |           |                                            |
|--------------|-----------|--------------------------------------------|
| Good         | 0.80-0.89 | Reflects strong internal consistency       |
| Acceptable   | 0.70-0.79 | Indicates acceptable internal consistency  |
| Questionable | 0.60-0.69 | Reflects questionable internal consistency |
| Poor         | Below 0.6 | Indicates poor internal consistency        |

In order to determine the internal reliability of the instrument, reliability analysis is conducted. . Table 3 above shows the distribution and interpretation of Cronbach Alpha range. According to Ahmad,et.al. (2024), Cronbach Alpha scores between 0.7 to 0.9 is considered acceptable to excellent.

Table 2 also shows the reliability of the survey. The analysis shows a Cronbach alpha of .855 for reading difficulties and .950 for reading strategies. The total number of items for all 44 items is .926; thus, revealing a good reliability of the instrument chosen/used. Further analysis using SPSS is done to present findings to answer the research questions for this study.

## FINDINGS

### Demographic Analysis

According to Zienefuss, et.al (2021), researches report demographic data in percentages to establish sample representatives, and allow for generalizability to a larger population. The reporting also provides an overview of participants' characteristics. Percentages offer a clear and understandable picture of the sample makeup.

Table 4- Percentage for Demographic Profile

| Question | Demographic Profile                        | Categories               | Percentage (%) |
|----------|--------------------------------------------|--------------------------|----------------|
| 1        | Gender                                     | Male                     | 34%            |
|          |                                            | Female                   | 66%            |
| 2        | Age                                        | 18-21                    | 62%            |
|          |                                            | 22-25                    | 38%            |
| 3        | Self-Rating Reading in English Proficiency | Poor                     | 2%             |
|          |                                            | Average                  | 51%            |
|          |                                            | Good                     | 47%            |
| 4        | Reading Preference                         | Physical books/magazines | 49%            |
|          |                                            | Online Materials         | 51%            |

Table 4 shows the demographic profile of respondents that participated in the survey. There are 34 per cent male respondents and 66 per cent female respondents. Other than that, there are 62 per cent of respondents who were from 18 to 21 years old and 38 per cent of respondents who were 22 to 25 years old. The respondents also rated

their reading in English proficiency and there are 2 per cent who rated as poor, 51 per cent rated as average and 47 per cent rated as good. There are two reading preferences preferred by the respondents and there are 49 per cent preferred reading using physical books and 51 per cent preferred online materials.

## Inferential Statistics

According to Shah (2024)

4), there are three main functions of a T-test. Firstly, T-tests are done to compare means. This test is also done to determine if the average scores (mean) or values of two groups, or one group against a known value, are different enough to be considered statistically meaningful and are not just due to random chance. Secondly, T-test is done to test hypotheses. Researchers use t-tests to test hypotheses about means, such as whether a new treatment significantly impacts a variable or if there's a difference in performance between two distinct groups. Lastly, T-test is done to identify significant differences. The output of a t-test provides a p-value (significance value). If this p-value is below a pre-determined threshold (often 0.05), it indicates a statistically significant difference, allowing researchers to draw conclusions about the populations from which their samples were drawn.

## Findings for Gender

This section presents data to answer research question 1: Is there a significant relationship between (a) reading difficulties and (b) reading strategies across gender?

H<sub>01</sub>: There is no significant relationship between (a) reading difficulties and (b) reading strategies across gender

Table 5: T-Test for Gender

| Group Statistics     |           |    |        |                |                 |
|----------------------|-----------|----|--------|----------------|-----------------|
|                      | Q1:GENDER | N  | Mean   | Std. Deviation | Std. Error Mean |
| READING_DIFFICULTIES | MALE      | 44 | 2.4720 | .58784         | .08862          |
|                      | FEMALE    | 86 | 2.5966 | .53658         | .05786          |
| READING_STRATEGIES   | MALE      | 44 | 3.5161 | .71603         | .10794          |
|                      | FEMALE    | 86 | 3.6553 | .60461         | .06520          |

| Independent Samples Test                |                             |       |      |                              |        |                                         |                    |                          |                                                             |
|-----------------------------------------|-----------------------------|-------|------|------------------------------|--------|-----------------------------------------|--------------------|--------------------------|-------------------------------------------------------------|
| Levene's Test for Equality of Variances |                             |       |      | t-test for Equality of Means |        |                                         |                    |                          |                                                             |
|                                         |                             | F     | Sig. | t                            | df     | Significance<br>One-Sided p Two-Sided p | Mean<br>Difference | Std. Error<br>Difference | 95% Confidence Interval of the<br>Difference<br>Lower Upper |
| READING_DIFFICULTIES                    | Equal variances assumed     | 1.740 | .190 | -1.212                       | 128    | .114 .228                               | -.12457            | .10275                   | -.32787 .07873                                              |
|                                         | Equal variances not assumed |       |      | -1.177                       | 80.109 | .121 .243                               | -.12457            | .10584                   | -.33519 .08604                                              |
| READING_STRATEGIES                      | Equal variances assumed     | .220  | .640 | -1.165                       | 128    | .123 .246                               | -.13916            | .11940                   | -.37542 .09710                                              |
|                                         | Equal variances not assumed |       |      | -1.104                       | 75.043 | .137 .273                               | -.13916            | .12611                   | -.39037 .11205                                              |

A two-sample t-test was performed to compare (a) reading difficulties and (b) reading strategies across gender. There were no significant differences in (a) reading difficulties ( $p = .228$ ) and (b) reading strategies (.246) across gender. Null hypothesis is accepted for H<sub>01</sub>.

## Findings for Age

This section presents data to answer research question 2: Is there a significant relationship between (a) reading difficulties and (b) reading strategies across ages?

H<sub>02</sub>: There is no significant relationship between (a) reading difficulties and (b) reading strategies across ages

Table 6: T-Test for Ages

| Group Statistics     |       |    |        |                |                 |
|----------------------|-------|----|--------|----------------|-----------------|
|                      | Q2AGE | N  | Mean   | Std. Deviation | Std. Error Mean |
| READING_DIFFICULTIES | 18-21 | 80 | 2.5452 | .56224         | .06286          |
|                      | 22-25 | 50 | 2.5692 | .54945         | .07770          |
| READING_STRATEGIES   | 18-21 | 80 | 3.5645 | .68214         | .07627          |
|                      | 22-25 | 50 | 3.6781 | .58074         | .08213          |

| Independent Samples Test                |                             |      |      |                              |         |              |             |                 |                       |                                           |        |
|-----------------------------------------|-----------------------------|------|------|------------------------------|---------|--------------|-------------|-----------------|-----------------------|-------------------------------------------|--------|
| Levene's Test for Equality of Variances |                             |      |      | t-test for Equality of Means |         |              |             |                 |                       |                                           |        |
|                                         |                             | F    | Sig. | t                            | df      | Significance |             | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference |        |
|                                         |                             |      |      |                              |         | One-Sided p  | Two-Sided p |                 |                       | Lower                                     | Upper  |
| READING_DIFFICULTIES                    | Equal variances assumed     | .063 | .802 | -.239                        | 128     | .406         | .811        | -.02404         | .10048                | -.22286                                   | .17478 |
|                                         | Equal variances not assumed |      |      | -.241                        | 105.970 | .405         | .810        | -.02404         | .09995                | -.22219                                   | .17412 |
| READING_STRATEGIES                      | Equal variances assumed     | .789 | .376 | -.976                        | 128     | .165         | .331        | -.11355         | .11632                | -.34370                                   | .11660 |
|                                         | Equal variances not assumed |      |      | -1.013                       | 116.303 | .157         | .313        | -.11355         | .11208                | -.33553                                   | .10843 |

A two-sample t-test was performed to compare (a) reading difficulties and (b) reading strategies across ages. There were no significant differences in (a) reading difficulties ( $p = .811$ ) and (b) reading strategies (.311) across ages. Null hypothesis is accepted for  $H_{02}$ .

### Findings for Reading Preferences

This section presents data to answer research question 3: Is there a significant relationship between (a) reading difficulties and (b) reading strategies across reading preferences?

$H_{03}$ : There is no significant relationship between (a) reading difficulties and (b) reading strategies across reading preferences

Table 7 T-Test for Reading Preferences

| Group Statistics     |           |    |        |                |                 |
|----------------------|-----------|----|--------|----------------|-----------------|
|                      | Q4PREF    | N  | Mean   | Std. Deviation | Std. Error Mean |
| READING_DIFFICULTIES | PHY BOOKS | 63 | 2.5714 | .59772         | .07531          |
|                      | OL        | 67 | 2.5385 | .51636         | .06308          |
| READING_STRATEGIES   | PHY BOOKS | 63 | 3.6928 | .67471         | .08501          |
|                      | OL        | 67 | 3.5286 | .61030         | .07456          |

| Independent Samples Test                |                             |       |      |                              |         |              |             |                 |                       |                                           |        |
|-----------------------------------------|-----------------------------|-------|------|------------------------------|---------|--------------|-------------|-----------------|-----------------------|-------------------------------------------|--------|
| Levene's Test for Equality of Variances |                             |       |      | t-test for Equality of Means |         |              |             |                 |                       |                                           |        |
|                                         |                             | F     | Sig. | t                            | df      | Significance |             | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference |        |
|                                         |                             |       |      |                              |         | One-Sided p  | Two-Sided p |                 |                       | Lower                                     | Upper  |
| READING_DIFFICULTIES                    | Equal variances assumed     | 2.782 | .098 | .337                         | 128     | .368         | .737        | .03297          | .09780                | -.16054                                   | .22647 |
|                                         | Equal variances not assumed |       |      | .336                         | 122.760 | .369         | .738        | .03297          | .09824                | -.16149                                   | .22742 |
| READING_STRATEGIES                      | Equal variances assumed     | 1.730 | .191 | 1.456                        | 128     | .074         | .148        | .16413          | .11272                | -.05890                                   | .38717 |
|                                         | Equal variances not assumed |       |      | 1.452                        | 124.739 | .075         | .149        | .16413          | .11307                | -.05965                                   | .38792 |

A two-sample t-test was performed to compare (a) reading difficulties and (b) reading strategies across reading preferences. There were no significant differences in (a) reading difficulties ( $p = .737$ ) and (b) reading strategies (.148) across reading preferences. Null hypothesis is accepted for  $H_{03}$

## Descriptive Statistics

### Findings for Reading Difficulties

This section presents data to answer the research question 4: How do learners perceive their reading difficulties? In the context of this study, this is measured by (i) text-related and (ii) anxiety.

(i) Table 8- Mean (M) and Standard Deviation (SD) for Text-Related (TR)

| ITEM                                                                                          | M    | SD   |
|-----------------------------------------------------------------------------------------------|------|------|
| TRQ1 I faced a problem in figuring out the meanings of some new words in the reading text     | 2.82 | 0.66 |
| TRQ2 I faced a problem in identifying the aim behind reading comprehension                    | 2.69 | 0.82 |
| TRQ3 I faced difficulty in guessing the meanings of some new words                            | 2.73 | 0.71 |
| TRQ4 I faced a problem in distinguishing main ideas from supporting ideas in the reading text | 2.59 | 0.76 |
| TRQ5 I faced difficulty in extracting main and detailed ideas in the text                     | 2.6  | 0.78 |
| TRQ6 I faced difficulty in recognizing the total meaning of the text                          | 2.34 | 0.75 |
| TRQ7 I usually translate word by word when I am reading                                       | 2.40 | 1.06 |
| TRQ18 I faced difficulty in summarizing the main ideas of the text                            | 2.62 | 0.91 |

Table 8 shows the results of text-related constructs. There are eight (8) items. The majority of the respondents perceived that they rarely faced difficulties in figuring out and guessing meanings of new words in a reading text with a mean score 2.82 (SD=0.66) and 2.73 (SD=0.71) respectively. Other than that, the respondents were also stated that they rarely faced problems to identify the goal of reading comprehension (M=2.69, SD=0.82) and to summarise and extract the main and detailed ideas in the text (M=2.62, SD=0.91; M=2.60, SD=0.78) correspondingly. The respondents were also indicated that they rarely faced issues to distinguish main ideas from supporting details (M=2.59, SD=0.76) and to recognise the total meaning of the text (M=2.34, SD=0.75). Lastly, the respondents perceived that they rarely translated word by word when they were reading English texts (M=2.40, SD=1.06).

(ii) Table 9- Mean (M) and Standard Deviation (SD) for Anxiety (A)

| ITEM                                                                     | M    | SD   |
|--------------------------------------------------------------------------|------|------|
| AQ1I feel stressed when reading a text in English in the classroom.      | 2.61 | 0.91 |
| A20I never feel quite sure of myself when I am reading in the classroom. | 1.77 | 0.88 |

|                                                                                                          |      |      |
|----------------------------------------------------------------------------------------------------------|------|------|
| AQ3I keep thinking that the other students are better at reading than I am.                              | 2.93 | 1.13 |
| AQ4 Even if I am well prepared for the class, I feel anxious about reading materials written in English. | 2.58 | 1.13 |
| AQ5I feel upset when I don't understand what I read in English                                           | 3.00 | 1.18 |

Table 9 illustrates the descriptive statistics of reading anxiety construct. There are five (5) items. The results show that the majority of respondents perceived that they sometimes felt upset when they did not understand what they read in English. Other than that, the respondents also indicated that they rarely thought of whether other students were better, rarely felt stressed when reading English text in a classroom and rarely felt anxious when reading English materials with the mean scores of 2.93 (SD=1.13), 2.61 (SD=0.91), and 2.58 (SD=1.13) respectively. Lastly, the majority of the respondents suggested that they felt quite sure of themselves when they were reading in the classroom (N=1.77, SD=0.88).

### Findings for Reading Strategies

This section presents data to answer the research question 5: How do learners perceive their use of reading strategies? In the context of this study, this is measured by (i) global , (ii) problem-solving and (iii) support reading strategies.

#### (i) Table 10- Mean (M) and Standard Deviation (SD) for GLOBAL STRATEGIES

| ITEM                                                                                       | M    | SD   |
|--------------------------------------------------------------------------------------------|------|------|
| BGSQ1. I have a purpose in mind when I read online                                         | 3.41 | 0.96 |
| BGSQ2. I think about what I know to help me understand what I read online                  | 3.67 | 0.98 |
| BGSQ3. I take an overall view of the online text to see what it is about before reading it | 3.48 | 0.95 |
| BGSQ4. I think about whether the content of the online text fits my reading purpose        | 3.51 | 0.98 |
| BGSQ5. When reading online, I decide what to read thoroughly and what to ignore            | 3.36 | 0.97 |
| BGSQ6. When online text becomes difficult, I pay closer attention to what I am reading     | 3.87 | 0.98 |
| GSQ7. I use tables, figures, and pictures in the online text to increase my understanding  | 3.42 | 1.07 |
| BGSQ8. I use context clues to help me better understand what I am reading online           | 3.62 | 0.96 |
| BGSQ9. I use typographical features like boldface and italics to identify key information  | 3.44 | 1.09 |
| BGSQ10. I critically analyse and evaluate the information presented in the online text     | 3.43 | 0.89 |

|                                                                                                                     |      |      |
|---------------------------------------------------------------------------------------------------------------------|------|------|
| BGSQ11. When reading online, I check my understanding when I come across new information                            | 3.75 | 0.89 |
| BGSQ12. I try to guess what the content of the online text is about when I read.                                    | 3.72 | 0.92 |
| BGSQ13. I check to see if my guesses about the online text are right or wrong                                       | 3.70 | 1.02 |
| BGSQ14. I scan the online text to get a basic idea of whether it will serve my purposes before deciding to read it. | 3.54 | 1.02 |
| BGSQ15. I critically evaluate the online text before choosing to use its information                                | 3.53 | 1.02 |

Table 10 indicates the results of global strategies used by the respondents when reading online texts. The majority of respondents perceived that they sometimes pay closer attention when the online texts that they were reading were difficult to read, sometimes they checked their understanding when reading new online information, sometimes they tried to guess the online content and sometimes they checked whether their guesses were correct or wrong with a mean score 3.87 (SD=0.98), 3.75 (SD=0.89), 3.72 (SD=0.92) and 3.70 (SD=1.02) respectively. Other than that, the majority of respondents acknowledged that they thought of what they knew to help them to understand the online texts better (M=3.67, SD=0.98 ) and sometimes they used contextual clues to understand the online texts better (M=3.62, SD=0.96).

Moreover, most of the respondents also said that they sometimes scanned the online texts to get the rough ideas before deciding to continue reading or not, sometimes evaluate the online texts critically before choosing to the information in the text and sometimes they thought whether the content of the online texts fixed their reading purpose or not with a mean score 3.54 (SD=1.02), 3.53 (SD=1.02) and 3.51 (SD=0.98) correspondingly. On top of that, the majority of respondents perceived that they sometimes took overall view of online texts to see the main idea of the texts before proceed reading it (M3.48, SD=0.95), sometimes they used bold and italics words to identify important information (M=3.44, SD=1.09), critically analyse and evaluate information in the online texts (M3.43, SD=0.89), sometimes used tables, figures and pictures to understand the online texts better (M=3.42, SD=1.07), and sometimes they had a purpose when they read online texts (M=3.41,SD=0.96). Lastly, the respondents suggested that they sometimes decided on what to read thoroughly and what to ignore when reading online texts with a mean score 3.36 (SD=0.97).

(ii) Table 11- Mean (M) and Standard Deviation (SD) for PROBLEM--SOLVING STRATEGIES

| ITEM                                                                                 | M    | SD   |
|--------------------------------------------------------------------------------------|------|------|
| PSSQ1 I try to get back on track when I lose concentration                           | 3.82 | 0.98 |
| PSSQ2 I adjust my reading speed according to what I am reading on-line               | 4.12 | 0.94 |
| PSSQ3 I stop from time to time and think about what I am reading on-line             | 4.04 | 0.92 |
| PSSQ4 When on-line text becomes difficult, I re-read it to increase my Understanding | 3.68 | 0.98 |

|                                                                            |      |      |
|----------------------------------------------------------------------------|------|------|
| PSSQ5 When I read on-line, I guess the meaning of unknown words or phrases | 3.98 | 0.98 |
| PSSQ6 I can distinguish between fact and opinion in on-line texts          | 4.18 | 0.90 |

Table 11 demonstrates the results for problem solving strategies. The results show that the majority of the respondents perceived that they always manage to differentiate between facts and opinion in online texts ( $M=4.18$ ,  $SD=0.90$ ), always adjust their reading speed based on what they read online ( $M=4.12$ ,  $SD=0.94$ ), and always stop from time-to-time to think about what they read online ( $M=4.04$ ,  $SD=0.92$ ). Moreover, most of the respondents often guessed the meaning of unknown words and phrases when it was difficult to read online texts with a mean score 3.98 ( $SD=0.98$ ) and they also often tried to keep track of their reading whenever they lost concentration with a mean score 3.82 ( $SD=0.98$ ). Lastly, the majority of the respondents often re-read the difficult online texts to increase their understanding ( $M=3.68$ ,  $SD=0.98$ ).

(iii) Table 12- Mean (M) and Standard Deviation (SD) for SUPPORT STRATEGIES

| ITEM                                                                                                           | M    | SD   |
|----------------------------------------------------------------------------------------------------------------|------|------|
| SSQ1 I take notes while reading on-line to help me understand what I read                                      | 3.09 | 1.13 |
| DSSQ2. When online text becomes difficult, I read aloud to help me understand what I read                      | 3.68 | 1.14 |
| DSSQ3. I print out a hard copy of the online text then underline or circle information to help me remember it. | 2.77 | 1.25 |
| DSSQ4. I use reference materials (e.g. an online dictionary) to help me understand what read online.           | 3.55 | 1.01 |
| DSSQ5. I paraphrase (restate ideas in my own words) to better understand what I read online.                   | 3.50 | 1.04 |
| DSSQ6. I go back and forth in the online text to find relationships among ideas in it                          | 3.61 | 0.99 |
| DSSQ7. I ask myself questions I like to have answered in the online text                                       | 3.48 | 1.04 |
| DSSQ9. When reading online, I think about information in both English and my mother tongue (Malay)             | 3.95 | 0.99 |

Table 12 shows the results of support strategies used by the respondents when reading online texts in English. The majority of respondents perceived that they sometimes think of the information in both English and Malay when reading online, sometimes reading aloud to help them understand what they read when the online reading texts were difficult and sometimes went back and forth of the text to see the relationship among ideas with a mean score of 3.95 ( $SD=0.99$ ), 3.68 ( $SD=1.14$ ) and 3.61 ( $SD=0.99$ ) respectively. Most of the respondents also acknowledged that they sometimes used reference (online dictionary) to help them to understand online texts ( $M=3.55$ ,  $SD=1.01$ ), sometimes paraphrased the ideas/sentences to better understand the online texts ( $M=3.50$ ,  $SD=1.04$ ) and sometimes asked questions to answer while reading online texts ( $M=3.48$ ,  $SD=1.04$ ). The majority of respondents also said sometimes they took notes while reading online to help them understand the texts better ( $M=3.09$ ,  $SD=1.13$ ). However, they rarely printed out the hard copy of the online texts to underline and circle the information to help them remember better ( $M=2.77$ ,  $SD=1.25$ ).

## Exploratory Statistics

According to He (2024), correlation is a statistical technique that shows how strongly two variables are related to each other or the degree of association between the two. It's a common tool for describing simple relationships without making a statement about cause and effect. This section presents data to answer research question on correlation.

According to He (2024), coefficient is significant at the .05 level and positive correlation is measured on a 0.1 to 1.0 scale. Weak positive correlation would be in the range of 0.1 to 0.3, moderate positive correlation from 0.3 to 0.5, and strong positive correlation from 0.5 to 1.0.

## Findings for Relationship between reading difficulties and reading strategies

This section presents data to answer the research question 6: Is there a significant relationship between reading difficulties and reading strategies?

H<sub>04</sub>: There is no significant relationship between reading difficulties and reading strategies

To determine if there is a significant association in the mean scores between reading difficulties and reading strategies, data is analysed using SPSS for correlations. Results are presented separately in Table 13 below.

Table 13- Correlation between reading difficulties and reading strategies

| Correlations            |                     |                         |                       |
|-------------------------|---------------------|-------------------------|-----------------------|
|                         |                     | READING<br>DIFFICULTIES | READING<br>STRATEGIES |
| READING<br>DIFFICULTIES | Pearson Correlation | 1                       | .009                  |
|                         | Sig. (2-tailed)     |                         | .919                  |
|                         | N                   | 130                     | 130                   |
| READING<br>STRATEGIES   | Pearson Correlation | .009                    | 1                     |
|                         | Sig. (2-tailed)     | .919                    |                       |
|                         | N                   | 130                     | 130                   |

Table 13 shows there is an association between reading difficulties and reading strategies. Correlation analysis shows that there is no significant association between reading difficulties and reading strategies ( $r=.009$ ) and ( $p=.919$ ). Hence, null hypothesis is accepted for H<sub>04</sub>.

## CONCLUSION

### Summary of Findings and Discussions

Summary by answering all RQ (no mean scores) and relate to past studies

This study was conducted to explore the relationship between reading difficulties and reading strategies among learners. Specifically, the study investigated whether there were significant differences in reading difficulties

and reading strategies across gender, age and reading preferences. The study also examined learners' perceptions of their reading difficulties and reading strategies, as well as the relationship between reading difficulties and reading strategies.

The first research question examined whether there was a significant relationship between reading difficulties and reading strategies across gender. The findings revealed that there were no significant differences in reading difficulties ( $p=.228$ ) and reading strategies ( $p=.246$ ) across gender. Therefore, the null hypothesis was accepted. This finding suggests that male and female learners experienced similar reading difficulties and employed similar reading strategies when engaging with online reading materials. The finding indicates that gender did not appear to influence how learners perceived reading challenges or how they approached reading tasks. This finding is consistent with the view of Grabe and Stoller (2020), who explain that reading comprehension is influenced more by cognitive and strategic processes than demographic characteristics. The finding also supports the argument by Mokhtari and Reichard (2002) that effective reading depends largely on learners' strategic awareness rather than personal demographic factors.

The second research question investigated whether there was a significant relationship between reading difficulties and reading strategies across age groups. The findings showed that there were no significant differences in reading difficulties ( $p=.811$ ) and reading strategies ( $p=.311$ ) across age groups. Therefore, the null hypothesis was accepted. The findings indicate that learners from different age groups demonstrated similar perceptions of reading difficulties and similar use of reading strategies. This may suggest that the reading challenges experienced by learners and the strategies employed to overcome those challenges are common across age groups within the present sample. The finding supports Snow's (2002) view that reading comprehension involves similar cognitive processes of extracting and constructing meaning regardless of learner characteristics. The finding is also in accordance with the work of Oxford (2017), who emphasises that successful reading relies on learners' ability to regulate comprehension through appropriate strategy use.

The third research question examined whether there was a significant relationship between reading difficulties and reading strategies across reading preferences. The findings revealed that there were no significant differences in reading difficulties ( $p=.737$ ) and reading strategies ( $p=.148$ ) across reading preferences. Therefore, the null hypothesis was accepted. This finding suggests that learners who preferred physical reading materials and those who preferred online reading materials experienced similar levels of reading difficulties and utilised similar reading strategies. The result is particularly interesting because previous studies have highlighted differences in reading behaviour across print and digital environments (Delgado et al., 2018; Delgado et al., 2021). However, the present study suggests that learners may transfer similar reading behaviours and strategies across different reading formats. This finding further supports the notion that strategic reading behaviours are more closely related to individual reading processes than to preferred reading medium.

The fourth research question explored how learners perceived their reading difficulties. Reading difficulties were measured through text-related difficulties and reading anxiety. The findings revealed that learners generally perceived low levels of text-related difficulties. Among the text-related items, the highest mean score was recorded for difficulties in figuring out the meanings of new words ( $M=2.82$ ), followed by difficulties in guessing the meanings of unfamiliar words ( $M=2.73$ ). The lowest mean score was recorded for difficulties in recognising the overall meaning of the text ( $M=2.34$ ). Overall, the findings suggest that respondents rarely experienced serious text-related reading difficulties. This finding appears to contradict studies by Nanda and Azmy (2020) and Vanguri et al. (2025), which reported that many ESL learners continue to struggle with vocabulary and comprehension issues. The present findings may indicate that the respondents possessed sufficient reading competence to cope with academic reading tasks.

With regard to reading anxiety, the highest mean score was recorded for feeling upset when unable to understand English texts ( $M=3.00$ ), followed by thinking that other students were better readers ( $M=2.93$ ). The lowest mean score was recorded for lacking confidence when reading in class ( $M=1.77$ ). These findings suggest that although respondents occasionally experienced frustration when comprehension failed, they generally demonstrated confidence in their reading abilities. This finding is partially consistent with Rahmat et al. (2020), who reported that reading anxiety can affect learners' reading experiences. However, the current findings indicate that anxiety was not a dominant issue among the respondents.

The fifth research question investigated how learners perceived their use of reading strategies. Reading strategies were measured through global strategies, problem-solving strategies and support strategies. For global strategies, the highest mean score was recorded for paying closer attention when online texts became difficult ( $M=3.87$ ), followed by checking understanding when encountering new information ( $M=3.75$ ). These findings suggest that learners actively monitored their comprehension when reading online texts. The findings support Mokhtari and Reichard (2002), who argued that effective readers frequently monitor and evaluate their comprehension during reading.

For problem-solving strategies, the highest mean score was recorded for distinguishing between facts and opinions in online texts ( $M=4.18$ ), followed by adjusting reading speed according to reading demands ( $M=4.12$ ). These findings indicate that learners frequently employed problem-solving strategies when interacting with online texts. The findings support the work of Li et al. (2022), who found that reading strategy use contributes positively to reading performance. Similarly, Habók et al. (2024) reported that strategic reading behaviours support successful online reading comprehension.

In terms of support strategies, the highest mean score was recorded for thinking about information in both English and Malay while reading online texts ( $M=3.95$ ). Respondents also frequently read aloud when texts became difficult ( $M=3.68$ ) and moved back and forth through texts to identify relationships among ideas ( $M=3.61$ ). These findings indicate that learners relied on translation and supportive comprehension techniques when processing online texts. The findings are consistent with Singh et al. (2023), who reported that ESL learners often depend on support strategies such as translation and comprehension support mechanisms when encountering reading difficulties.

The final research question examined whether there was a significant relationship between reading difficulties and reading strategies. Correlation analysis revealed no significant relationship between reading difficulties and reading strategies ( $r=.009$ ,  $p=.919$ ). Therefore, the null hypothesis was accepted. The findings suggest that the level of reading difficulty experienced by learners was not associated with the extent to which they used reading strategies. This finding differs from studies by Habók et al. (2024), Pahrizal et al. (2024) and Singh et al. (2023), which reported positive relationships between strategy use and reading performance. One possible explanation is that the respondents in the present study generally reported low levels of reading difficulties, resulting in limited variation in responses. Another possibility is that learners employed reading strategies as routine reading behaviours regardless of whether they experienced difficulties. The finding suggests that reading strategy use may be a common practice among learners rather than a direct response to reading challenges.

Overall, the findings revealed that learners generally perceived low levels of reading difficulties and moderate to high use of reading strategies. Although respondents frequently employed global, problem-solving and support strategies while reading online texts, no significant relationship was found between reading difficulties and reading strategies. The findings indicate that reading strategy use may function as a regular reading practice among learners rather than a compensatory mechanism activated only when reading difficulties arise.

## **Implications and Suggestions for Future Research**

### **Theoretical and Conceptual Implications**

This study contributes to the understanding of reading difficulties and reading strategies through the lens of Interactive Theory of Reading proposed by Rumelhart (1977). The theory suggests that reading comprehension occurs through the interaction between textual information, prior knowledge and strategic processing. The findings of this study provide support for several aspects of the theory. Although respondents reported relatively low levels of reading difficulties, they demonstrated moderate to high use of reading strategies, particularly problem-solving strategies. This suggests that learners actively engaged with texts through strategic processing regardless of whether they perceived substantial reading difficulties. The findings therefore support Rumelhart's (1977) argument that reading is not solely dependent on textual features but also involves active interaction between readers and texts.

The findings further support the views of Ahsani and Budairi (2022), who explain that effective reading occurs through the interaction of bottom-up and top-down processes. The respondents demonstrated the frequent use of strategies such as adjusting reading speed, distinguishing facts from opinions, monitoring understanding and guessing the meaning of unfamiliar words. These behaviours reflect both bottom-up processing, where readers focus on textual information, and top-down processing, where readers utilise background knowledge and contextual information to construct meaning. The findings indicate that learners actively employed both forms of processing while engaging with online texts.

The study also reinforces the importance of metacognitive awareness proposed by Mokhtari and Reichard (2002). The findings revealed that respondents frequently checked their understanding when encountering new information and paid closer attention when texts became difficult. Such behaviours suggest that learners monitored and regulated their comprehension throughout the reading process. Similarly, Oxford (2017) argues that successful language learners employ self-regulated strategies to facilitate learning and comprehension. The present findings demonstrate that learners were able to regulate their reading behaviour through various global and problem-solving strategies. This indicates that strategic reading behaviour remains an important component of successful reading even when learners do not perceive severe reading difficulties.

However, one of the most significant findings of this study is the absence of a significant relationship between reading difficulties and reading strategies. This finding appears to differ from studies by Habók et al. (2024), Li et al. (2022), Pahrizal et al. (2024) and Singh et al. (2023), which reported that reading strategy use contributes positively to reading comprehension and reading performance. While previous studies suggested that strategic reading may help learners overcome reading challenges, the present study found that learners' perceived reading difficulties were not associated with their reported use of reading strategies. One possible explanation is that reading strategies have become habitual reading practices among learners rather than reactive behaviours employed only when difficulties occur. In other words, learners may utilise reading strategies regularly regardless of whether they encounter comprehension problems.

The findings also provide conceptual implications for the framework proposed in this study. The conceptual framework assumed that reading difficulties and reading strategies would be related because learners facing reading challenges would employ strategies to facilitate comprehension. However, the results revealed no significant relationship between the two variables. This suggests that reading difficulties and reading strategies may operate more independently than previously assumed. While reading strategies remain important for comprehension, their use may be influenced by other factors such as reading proficiency, prior reading experiences, motivation, self-efficacy and metacognitive awareness rather than solely by the presence of reading difficulties. Therefore, future conceptual models examining reading behaviour should consider additional variables that may influence strategic reading practices.

Another important implication relates to digital reading environments. The literature reviewed in this study highlighted the increasing challenges associated with digital reading, including information overload and reduced strategic awareness (Delgado et al., 2021). Despite these concerns, the respondents demonstrated relatively frequent use of global, problem-solving and support strategies while reading online texts. This finding suggests that learners may be gradually adapting to digital reading environments through the development of strategic reading behaviours. The finding therefore supports recent perspectives that strategic reading remains an essential component of successful comprehension in both traditional and digital reading contexts.

## **Pedagogical Implications**

The findings of this study offer several important implications for language teaching and reading instruction. First, although respondents generally reported low levels of reading difficulties, vocabulary-related challenges remained among the highest reported difficulties. Learners indicated that they occasionally experienced difficulties in understanding unfamiliar words and guessing word meanings. This suggests that vocabulary development should continue to be emphasised in reading instruction. Teachers should provide learners with opportunities to develop vocabulary knowledge through contextualised reading activities, extensive reading programmes and explicit vocabulary instruction. Such practices may strengthen learners' ability to comprehend academic texts independently. The findings also indicate that learners frequently employed global reading

strategies such as monitoring comprehension, paying closer attention when texts became difficult and checking their understanding while reading. These findings suggest that learners recognise the importance of metacognitive awareness during reading. Therefore, teachers should continue to explicitly model and teach metacognitive reading strategies. Reading instruction should move beyond comprehension questions and incorporate activities that encourage learners to reflect on how they read, why they select particular strategies and how they monitor understanding. Strategy instruction should become an integral part of reading lessons rather than an additional component of instruction.

Another important finding was the strong preference for problem-solving strategies. Learners frequently adjusted their reading speed, guessed the meanings of unfamiliar words and distinguished between facts and opinions while reading online texts. These findings suggest that learners rely heavily on active problem-solving during reading. Therefore, reading instruction should include activities that develop critical reading skills, inferencing skills and evaluative reading abilities. Teachers may incorporate authentic academic texts, online articles and digital resources that require learners to analyse information critically and make informed judgements about textual content. The findings further revealed that learners frequently relied on support strategies such as thinking in both English and Malay, using reference materials and rereading difficult sections. This suggests that bilingual processing remains an important feature of reading among ESL learners. Rather than discouraging learners from drawing upon their first language, educators may utilise translanguaging practices strategically to facilitate comprehension. The use of bilingual glossaries, multilingual resources and guided translation activities may support learners in understanding complex academic texts while gradually developing greater independence in reading. In addition, the findings suggest that reading strategy instruction should be incorporated across disciplines rather than being confined to language classrooms. Since respondents demonstrated similar reading behaviours regardless of gender, age and reading preferences, strategic reading instruction may benefit learners from different backgrounds and learning contexts. Universities and schools may therefore consider embedding reading strategy training into academic literacy programmes to strengthen learners' ability to process academic texts effectively.

Finally, the findings highlight the importance of preparing learners for digital reading environments. As educational practices increasingly incorporate digital resources, learners must be equipped with the skills necessary to navigate online texts effectively. Teachers should therefore expose learners to digital reading tasks that require them to evaluate information sources, monitor comprehension and apply appropriate reading strategies while interacting with online materials.

### **Suggestions for Future Research**

Several recommendations can be made for future research based on the findings of this study. First, future researchers may investigate additional variables that could influence the relationship between reading difficulties and reading strategies. Since no significant relationship was found between the two variables, future studies may explore the roles of motivation, self-efficacy, reading proficiency, learner autonomy and metacognitive awareness in shaping reading strategy use.

Second, future studies may employ mixed-method or qualitative approaches to gain deeper insights into learners' strategic reading behaviours. While survey data provide useful information regarding learners' perceptions, interviews, think-aloud protocols and classroom observations may reveal how learners actually employ reading strategies during authentic reading tasks. Such approaches may provide a richer understanding of the relationship between reading difficulties and reading strategy use.

Third, future research may compare different learner populations. The present study focused on a specific group of learners; therefore, future investigations may examine secondary school students, postgraduate students or learners from different educational contexts. Comparative studies may reveal whether similar patterns exist across different learner groups.

Fourth, future studies may investigate reading difficulties and reading strategies in different reading environments. Since the present study focused primarily on online reading, future researchers may compare online reading and printed reading environments to determine whether reading strategies differ across reading

platforms. Such investigations would be particularly valuable given the increasing importance of digital literacy in contemporary education.

Finally, future research may adopt longitudinal designs to examine how reading difficulties and reading strategies develop over time. Longitudinal studies would provide insights into whether learners become more strategic readers as they gain experience and whether changes in strategy use influence reading comprehension and academic achievement. Such studies would contribute significantly to the growing body of literature on reading development and strategic reading behaviour among second language learners.

## REFERENCES

1. Abeeleh, T.W.A. and Al-Sobh, M. (2021) Reading Comprehension Problems Encountered by EFL Students at Aljoun National University. *International Journal of Language and Linguistics*, Vol 8(1), pp6-15. Retrieved from [https://ijllnet.com/journals/Vol\\_8\\_No\\_1\\_March\\_2021/2.pdf](https://ijllnet.com/journals/Vol_8_No_1_March_2021/2.pdf)
2. Ahmad, N., Alias, F.A., Hamat, M., & Mohamed, S.A. (2024) Reliability Analysis: Application of Cronbach's Alpha in Research Instruments. *SIG: e-Learning@CS*, 114-119. <https://appspenang.uitm.edu.my/sigcs/>
3. Ahsani, N., & Budairi, A. (2022). A review on L2 models of reading theories and reading teaching strategy. *International Journal of Education and Learning*, 4(1), 13-27. doi:<https://doi.org/10.31763/ijele.v4i1.474>
4. Amer, A., AL Barwani, T., Ibrahim, M. (2010) Student Teachers' Perceived Use of Online Reading Strategies. *International Journal of Education and Development using Information and Communication Technology (IJEDICT)*, Vol 6(4), pp 102-113. Retrieved from <http://ijedict.dec.uwi.edu>
5. He, L. (2024) The Application of SPSS Correlation Analysis in the Study of Precision Teaching of English in Universities. *Applied Mathematics and Nonlinear Science*, 9(1), 1-13. <http://dx.doi.org/10.2478/amns-2024-1371>
6. Rahmat, N.H., Arepin, M., & Sulaiman, S. (2020) The Cycle of Reading Fear among Undergraduates. *Asian Journal of University Education (AJUE)*, 16(3), 265-274. <https://doi.org/10.24191/ajue.v16i3.9730>
7. Shah, M. A. (2024). Meaning and Statistical Analysis of T-Tests in SPSS. *Journal of Saidu Medical College*, 14(1), 64-65. <https://doi.org/10.522006>
8. Vetter, T.R. (2017) Descriptive Statistics: Reporting the Answers to the 5 Basic Questions of Who, What, Why, When, Where, and a Sixth, so What? *Anesth Analg*, 125(5), 1797-1802. <https://doi.org/10.1213/ane.0000000000002471>
9. Ziegenfuss, J. Y., Casey A. E., Jennifer M. D., Meghan M. J., Thomas E. K, and Marna, C.. (202) Impact of Demographic Survey Questions on Response Rate and Measurement: A Randomized Experiment. *Survey Practice* 14 (1), <https://doi.org/10.29115/SP-2021-0010>.
10. Ammar, A., Md Sallehuddin, N. H., Amat Suparia, F. A., Mohammed, M. S., Rahman, N. A., & Rahmat, N. H. (2026). Investigation on relationship between reading difficulties and online reading strategies. *Asian People Journal*, 9(1), 88–103. <https://doi.org/10.37231/apj.2026.9.1.791>
11. Chall, J. S. (1983). *Stages of reading development*. McGraw-Hill.
12. Ceyhan, S., & Yıldız, M. (2021). The Effect of Interactive Reading Aloud on Student Reading Comprehension, Reading Motivation and Reading Fluency. *International Electronic Journal of Elementary Education*, 13(4) Retrieved from <https://iejee.com/index.php/IEJEE/article/view/1258>
13. Delgado, P., Vargas, C., Ackerman, R., & Salmerón, L. (2018). Don't throw away your printed books: A meta-analysis on the effects of reading media on reading comprehension. *Educational Research Review*, 25, 23–38.
14. Delgado, P., Salmerón, L., & Altamura, L. (2021). Strategic awareness and reading behaviors in digital environments: Navigating online text complexities. *Journal of Research in Reading*, 44(3), 512–530.
15. Diehl, W. (Ed.), Caverly, D., Shanklin, N. L., & Anglin, C. L. (Eds.). (1978). *Secondary reading: Theory and application*. The Lilly Conference on Secondary Reading (April 6-8, 1978). Monographs in Teaching and Learning Number 1.
16. Fatima, S., Azmuddin, R. A., & Kassim, A. (2026). A Comprehensive Review of Reading Challenges and Instructional Solutions for Saudi EFL Learners. *International Journal of Language Education and Applied Linguistics*, 16(1), 66-75. <https://doi.org/10.15282/ijleal.v16i1.12260>

18. Grabe, W., & Stoller, F. L. (2019). *Teaching and researching reading* (3rd ed.). Routledge.
19. Grabe, W., & Stoller, F. L. (2020). *Teaching and researching reading* (4th ed.). Routledge.
20. Habók, A., Magyar, A., & Molnár, G. (2024). The effect of reading strategy use on online reading comprehension achievement. *Heliyon*, 10(5), e26663. <https://doi.org/10.1016/j.heliyon.2024.e26663>
21. Johnson, A. M., Tighe, E. L., Jacovina, M. E., Jackson, G. T., & McNamara, D. S. (2017a). Development of an interactive narrative for adult literacy learners. In *Advances in educational technologies and instructional design book series* (pp. 238–262). <https://doi.org/10.4018/978-1-5225-2639-1.ch012>
22. Li, H., Gan, Z., Leung, S. O., & An, Z. (2022). The impact of reading strategy instruction on reading comprehension, strategy use, motivation, and self-efficacy in Chinese university EFL students. *SAGE Open*, 12(1), 1–14. <https://doi.org/10.1177/21582440221086659>
23. Lin, H., Wei, W., Zou, B., & Zheng, Y. (2026). Interactive reading patterns and metacognitive strategies from surface to deep levels of L2 learners in GenAI-assisted critical reading. *Discover Computing*, 29(1). <https://doi.org/10.1007/s10791-026-10069-1>
24. Mokhtari, K., & Reichard, C. A. (2002). Assessing students' metacognitive awareness of reading strategies. *Journal of Educational Psychology*, 94(2), 249–259.
25. Nanda, D. W., & Azmy, K. (2020). Poor reading comprehension issue in EFL classroom among Indonesian secondary school students: Scrutinizing the causes, impacts and possible solutions. *Englisia: Journal of Language, Education, and Humanities*, 8(1), 12-24. <https://doi.org/10.22373/ej.v8i1.6771>
26. Oxford, R. L. (2017). *Teaching and researching language learning strategies: Self-regulation in context* (2nd ed.). Routledge.
27. Pahrizal, N., Vintoni, A., Sotlikova, R., & Ya'akub, H. Z. H. (2024). Metacognitive reading strategies and their impact on comprehension: Insights from rural EFL learners. *Indonesian Journal on Learning and Advanced Education (IJOLAE)*, 7(1), 18–36.
28. Phichiensathien, P. (2021). Interactive reading to second language reading ability. *Proceedings of the 6th UPI International Conference on TVET 2020 (TVET 2020)*, 303–308. Atlantis Press. [doi.org](https://doi.org)
29. Rumelhart, D. E. (1977). Toward an interactive model of reading. In S. Dornic (Ed.), *Attention and performance VI* (pp. 573–603). Lawrence Erlbaum Associates.
30. Singh, J. K. S., Kaur, G., & Sidhu, G. K. (2023). Strategic reading profile of ESL learners: Support strategies versus higher-level reading operations. *Journal of English for Academic Purposes*, 64, 101–119.
31. Snow, C. (2002). *Reading for understanding: Toward an R&D program in reading comprehension*. RAND Corporation.
32. UNESCO. (2022). *International literacy day report: Navigating post-pandemic literacy learning gaps*. UNESCO.
33. Vanguri, R., Murathoti, R. N. B., Farooq, M. A. A., & Kumari, R. (2025). Exploring reading difficulties, interest, and support systems in English text among government secondary school students. *Social Sciences & Humanities Open*, 12, 101910. <https://doi.org/10.1016/j.ssaho.2025.101910>

## APPENDIX

### READING DIFFICULTIES & PERCEIVED USE OF ONLINE READING STRATEGIES

(This instrument is adapted from Abeeleh, and al Sobh, 2021 ; Amer, et. al , 2010)

| SECTION | VARIABLE                                          | CONSTRUCT       | Item | Tot |
|---------|---------------------------------------------------|-----------------|------|-----|
| B       | Reading Difficulties<br>(Abeeleh & Al-Sobh, 2021) | Text-Related    | 8    | 13  |
|         |                                                   | Anxiety         | 5    |     |
|         |                                                   |                 |      |     |
| C       | READING STRATEGIES<br>(Amer, et. al., 2010)       | Global          | 6    | 18  |
|         |                                                   | Problem-Solving | 6    |     |
|         |                                                   | Support         | 6    |     |
|         |                                                   |                 |      | 31  |

#### SECTION B- READING DIFFICULTIES

##### (iii) Text-Related (TR)

| ITEM                                                                                         | 1 | 2 | 3 | 4 | 5 |
|----------------------------------------------------------------------------------------------|---|---|---|---|---|
| TRQ1I faced a problem in figuring out the meanings of some new words in the reading text     |   |   |   |   |   |
| TRQ2I faced a problem in identifying the aim behind reading comprehension                    |   |   |   |   |   |
| TRQ3I faced difficulty in guessing the meanings of some new words                            |   |   |   |   |   |
| TRQ4I faced a problem in distinguishing main ideas from supporting ideas in the reading text |   |   |   |   |   |
| TRQ5I faced difficulty in extracting main and detailed ideas in the text                     |   |   |   |   |   |
| TRQ6I faced difficulty in recognizing the total meaning of the text                          |   |   |   |   |   |
| TRQ7I usually translate word by word when I am reading                                       |   |   |   |   |   |
| TRQ18I faced difficulty in summarizing the main ideas of the text                            |   |   |   |   |   |

##### (iv) Anxiety (A)

| ITEM                                                                | 1 | 2 | 3 | 4 | 5 |
|---------------------------------------------------------------------|---|---|---|---|---|
| AQ1I feel stressed when reading a text in English in the classroom. |   |   |   |   |   |



|                                                                                                          |  |  |  |  |  |
|----------------------------------------------------------------------------------------------------------|--|--|--|--|--|
| A20I never feel quite sure of myself when I am reading in the classroom.                                 |  |  |  |  |  |
| AQ3I keep thinking that the other students are better at reading than I am.                              |  |  |  |  |  |
| AQ4 Even if I am well prepared for the class, I feel anxious about reading materials written in English. |  |  |  |  |  |
| AQ5I feel upset when I don't understand what I read in English                                           |  |  |  |  |  |

## SECTION C-READING STRATEGIES

## (iv) GLOBAL STRATEGIES

| ITEM                                                                                                            | 1 | 2 | 3 | 4 | 5 |
|-----------------------------------------------------------------------------------------------------------------|---|---|---|---|---|
| GSQ 1I think about whether the content of the on-line text fits my reading purpose                              |   |   |   |   |   |
| GSQ 2When reading on-line, I decide what to read thoroughly and what to ignore                                  |   |   |   |   |   |
| GSQ3I use context clues to help me better understand what I am reading online                                   |   |   |   |   |   |
| GSQ4I use typographical features like boldface and italics to identify key Information.                         |   |   |   |   |   |
| GSQ5I try to guess what the content of the on-line text is about when I read.                                   |   |   |   |   |   |
| GSQ6 scan the on-line text to get a basic idea of whether it will serve my purposes before deciding to read it. |   |   |   |   |   |

## (v) PROBLEM--SOLVING STRATEGIES

| ITEM                                                                                 | 1 | 2 | 3 | 4 | 5 |
|--------------------------------------------------------------------------------------|---|---|---|---|---|
| PSSQ1 I try to get back on track when I lose concentration                           |   |   |   |   |   |
| PSSQ2 I adjust my reading speed according to what I am reading on-line               |   |   |   |   |   |
| PSSQ3 I stop from time to time and think about what I am reading on-line             |   |   |   |   |   |
| PSSQ4 When on-line text becomes difficult, I re-read it to increase my Understanding |   |   |   |   |   |
| PSSQ5 When I read on-line, I guess the meaning of unknown words or phrases           |   |   |   |   |   |
| PSSQ6 I can distinguish between fact and opinion in on-line texts                    |   |   |   |   |   |

## (vi)



(vii) SUPPORT STRATEGIES

| ITEM                                                                                                 | 1 | 2 | 3 | 4 | 5 |
|------------------------------------------------------------------------------------------------------|---|---|---|---|---|
| SSQ1 I take notes while reading on-line to help me understand what I read                            |   |   |   |   |   |
| SSQ2 I use reference materials (e.g. an on-line dictionary) to help me understand what read on-line. |   |   |   |   |   |
| SSQ3 I paraphrase (restate ideas in my own words) to better understand what I read on-line.          |   |   |   |   |   |
| SSQ4 ask myself questions I like to have answered in the on-line text                                |   |   |   |   |   |
| SSQ5 When reading on-line, I translate from English into my native language                          |   |   |   |   |   |
| SSQ6 When reading on-line, I think about information in both English and my mother tongue            |   |   |   |   |   |