

Bridging Pedagogy and Psychology: An Analysis of the Influence of Reading Strategies on Reading Anxiety

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ABSTRACT

Reading is a fundamental skill in English as a Second Language (ESL) learning that not only enhances vocabulary and grammar but also fulfills learners' metacognitive needs for affiliation, power, and achievement. However, ESL learners often experience reading anxiety that may interfere with their comprehension and academic performance. This quantitative research examined the reading strategies influence on reading anxiety among Malaysian tertiary-level ESL learners. A 5-point Likert-scale survey adapted from Miao and Vibulphol (2020), Zoghi (2012), and Amer et al. (2010) was administered to 236 participants across four different educational levels. The instrument consisted of two main sections: Section B measuring reading anxiety (21 items across top-down, bottom-up, and classroom anxiety dimensions with Cronbach's alpha = .942) and Section C assessing reading strategies (18 items which include global, problem-solving, and support strategies with Cronbach's alpha = .926). Findings showed that learners predominantly employed prediction as a global strategy, rereading as a problem-solving strategy, and bilingual processing as a support strategy. Reading anxiety manifested primarily through limited prior knowledge, difficulty identifying main ideas, vocabulary recall challenges, and grammar processing difficulties. Nevertheless, correlation analysis showed weak to nonexistent relationships between reading strategies and reading anxiety, suggesting these constructs operate independently. No significant differences in strategy use or anxiety levels were found across educational levels. The findings have important pedagogical implications, indicating that educators must adopt a dual approach that addresses both cognitive strategy development and affective anxiety management simultaneously, as strategy instruction alone does not reduce reading anxiety.

KEYWORDS: reading anxiety, reading strategies, ESL learners, McClelland's Theory of Needs, online reading

INTRODUCTION

Background of Study

Reading is an important skill in English as a Second Language (ESL) learning. It is a cognitive process that does not only serve to help learners expand their vocabulary, develop their grammar skills, heighten their cultural and contextual awareness, aid in their language proficiency but also serve a primary purpose in text comprehension. Additionally, reading also functions to enhance learners' critical thinking and therefore,

learners' reading fluency will facilitate their lifelong learning by enabling learners to effectively engage with others in both casual and professional contexts.

Furthermore, reading is also done to satisfy a reader's metacognitive needs. These needs are oriented according to McClelland's Theory of Needs (McClelland, 1965) which includes affiliation needs, power needs and achievement needs. Reading books that are 'trendy', 'going viral' or books that their friends are reading may help readers to satisfy their affiliation needs. This is because reading the same books as the people they want to associate with creates a sense of belonging and helps the reader fit in their community. Power needs stimulate a reader by motivating them to read in order to raise their status (Baptista et al., 2021) or improve their well being. To illustrate, the online community of Tiktok and Instagram, specifically, are riddled with people who read self-help books. This can be seen by the popularity of #selfhelpbooks and #bookstoreadinyourtwenties which videos book recommendations for readers who are trying to live better. Readers who read to gain success, such as students studying for exams or specialists trying to enhance their competence, read to fulfill their achievement needs. They strive to be better (Baptista et al., 2021) and are very conscious of how the material that they read will affect their accomplishments.

However, reading texts come in many forms which demand different reading skills from the learners. As the structure for linear and non-linear texts are different, learners require different strategies while trying to comprehend a reading text. Furthermore, learners nowadays are more likely to read online; favouring the ever-connectedness, ease of access and instantaneous updates of online mediums over the tangible experience of physical books. While they may seem similar, reading a text online may be more challenging due to increased distractions, higher cognitive load and lack of physical mapping of texts. These issues may lead to students facing reading anxiety when faced with a reading task which will affect the overall textual information retention of the learner.

American Psychiatric Association (2013) defines anxiety as an adaptive emotion that could create complications if it is excessive, persistent and intrusive in a person's life. Reading anxiety is often manifested in learners when they develop a sense of fear and worry when reading a text, that it may wholly affect their comprehension of the text. ESL learners, especially, may face more anxiety when reading English texts as they are not reading in their mother tongue, and have to adapt to the unfamiliar vocabulary and grammar structures. Even proficient ESL readers may struggle when reading due to the cultural contexts of the texts. For example, humour, linguistic expressions and obscure diction may exaggerate reading anxiety especially when readers try to interpret the meaning of the text in their first language. This shows how reading anxiety is one of the main reading difficulties that a learner has to face.

In terms of reading difficulties, Mokhtari and Sheorey (2002) propose 3 main strategies; global, support and problem-solving strategies to mitigate the reading demands and properly aid learners in adapting to various forms of reading. Since one of the most prominent issues in reading among ESL learners is the anxiety they experience while reading, understanding the different reading strategies and consciously applying them may regulate learners' reading anxiety which will result in better reading comprehension and retention.

Statement of Problem

E-books, online databases, websites and numerous online texts have been available as early as the 2000s, but it was not until the COVID-19 Pandemic hits that the education system was prompted to adapt into a renewed approach in language teaching so that essential ESL skills can be remotely taught without the need of direct supervision from the educators. However, on top of the pre-existing pressure to excel in physical ESL classes, the isolation caused by the lockdown during the pandemic had consolidated one facet of learning difficulty; learners predominantly lack a good learning attitude like self-discipline, which makes concentration and engagement challenging (Bao, 2020).

Reading a text online also comes with more distractions than reading printed texts. Learners would have to manage the distraction from online advertisements, hyperlinks, distracting graphics and less constrained language which may be unfamiliar and may be the root to learners' reading anxiety. Kamaruddin and Kaur (2023) similarly noted that unlike in physical classrooms, reading anxiety in online classrooms are not

prominently affected by learners' language difficulties or instructor-induced stress, but instead are mainly related to the purposes of reading online as well as the learners' own awareness of their learning. This shows that reading anxiety is not affected by learners' proficiency but hinges on the other attributes of the readers and the texts themselves. Since overcoming reading anxiety is imperative to the learners' English language acquisition and comprehension, addressing the specific issues that causes it must be centred in research.

Next, reading strategies are the conscious effort that readers use to enhance their comprehension. There are three categories of reading strategies namely global reading strategies, problem-solving strategies, and support reading strategies (Mokhtari & Sheorey, 2002). These strategies are opted by ESL learners and educators to ensure that a reading session is treated as a deliberate, rational and constructive stimulus for the readers. Applying the correct strategy while reading may be the critical juncture in whether a reader fully comprehends a text or just barely engages with it on a surface level. In the most adverse scenario, a failure to appropriately apply reading strategies may lead to misinterpretation of a text which in turn will lead to other issues regarding textual comprehension.

These studies present an interesting perception to reading anxiety such that to properly manage it, learners should be more conscious of their own perception and approach to reading. Based on these facts, it is not only pertinent for researchers to study the correlation between reading strategies and reading anxiety, but also the learner's own awareness of both of these aspects when they are reading. This current study, therefore, was carried out to address the need for a definitive relationship between reading strategies and metacognitive anxiety awareness in order to enhance reading comprehension and ensure academic success.

Objective of the Study and Research Questions

This study is conducted to explore the influence of reading strategies on reading anxiety. The research questions are as follows;

- 1.3.1. How do learners perceive their reading strategies (global, problem-solving and supporting)?
- 1.3.2. How do learners perceive their reading anxiety? (background/ cultural, general, vocabulary, grammar and teaching methods)
- 1.3.3. Is there a relationship between global reading strategies and reading anxiety?
- 1.3.4. Is there a relationship between problem-solving reading strategies and reading anxiety?
- 1.3.5. Is there a relationship between supporting reading strategies and reading anxiety?
- 1.3.6. Is there a significant difference for reading strategies and reading anxiety across levels of education?

LITERATURE REVIEW

Theoretical Framework of the Study

McClelland's Theory of Needs

McClelland's Theory of Needs (McClelland, 1965) consists of three needs (refer to Figure 1), which are (i) Affiliation, (ii) Power, and (iii) Achievement needs. According to McClelland, while the three needs exist to a certain extent within all individuals, they are ranked and prioritised differently by each individual (Lloyd, 2019, as cited in Baptista et al., 2021). He also claims that these needs are not innate, but are acquired or learned through experiences.

The need for affiliation is typically displayed by individuals who seek interactions with others and include themselves in groups (Baptista et al., 2021). Next, Baptista et al. (2021) further state that the need for power involves individuals who focus on anything that can assist them in gaining status and rising in position. Lastly, the achievement needs include individuals who want to improve their performance to achieve their goals. According to McClelland (1987, as cited in Rybnicek et al., 2019), an individual's motivation stems from the need to satisfy these needs. He also mentions that individuals who learn also depend on the three needs. In regard to this, there are three reading strategies (Mokhtari & Sheorey, 2002) that correspond to the learners' needs. The use of (i) global reading strategies, (ii) problem-solving strategies, and (iii) support strategies gives the learners affiliation needs, power needs, and affective needs, respectively.

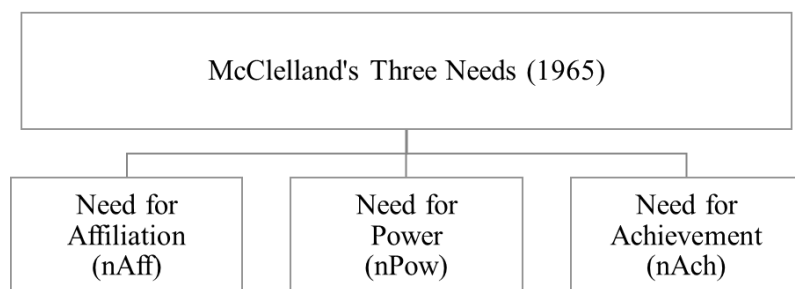


Figure 1- Theoretical Framework of the Study

McClelland's Theory of Needs Affiliation Need and Global Reading Strategies

Individuals with the need for affiliation will manage a good reputation among those they find relatable, to form alliances and to feel more fitted within an organisation (Jaepil, 2006, as cited in Baptista et al., 2021). They are individuals who excel in networking. McClelland states that these types of individuals want to be valued, acknowledged and respected. Moberg and Leasher (2011) suggest that individuals with affiliation needs prefer to work in groups as they can interact with people more. Their preferred methods of work would be through teamwork, engagement and cooperation with others. These types of individuals will fulfil their affiliation needs by applying the global reading strategies.

According to Par (2020), global strategies refer to individuals who organise their reading process. Their methods of reading would include constructing plans, doing previews and making predictions. Par (2020) adds that they intentionally plan and monitor their readings or reading progress. Applying the global strategies will satisfy the affiliation needs through the connection with the content and reading progress. Individuals with high affiliation needs can use methods such as previewing, predicting and making conclusions to feel more connected with the materials that they are reading. The affiliation or connection with the reading materials can help learners to feel positively about reading. The use of visual aids such as tables and figures in global reading strategies (Par, 2020) will also build the connection between the readers and the reading materials.

Power Need and Problem-solving Reading Strategies

Power needs exist among individuals who want authority. McClelland (1972, as cited in Baptista et al., 2021) lists the traits of these individuals, which include wanting to be admired, valued, and to have influence over others. They correlate success with the power they have over other people. According to Baptista et al. (2021), it is proven that individuals with the need for power engage with other people assertively and in a more controlling manner. All in all, they want to have an impact, authority, and influence over others (Vero & Puka, 2017).

Learners with the need for power can apply the problem-solving strategies to satisfy their needs. This strategy involves the learners using procedures to understand a text (Par, 2020). He adds that the procedures to understand difficult texts can be done by the use of methods such as contextual analysis and visualisation to identify the meaning of words. Applying the problem-solving strategies can satisfy the need for power, as the readers will have power over their learning. The need for having power, influence and authority can be expressed as cognitive control. It is the ability to manage learning strategies, which include decision-making

and problem-solving skills. The learners have the authority to decide on how to approach a problem when reading, which skill to use to understand the textual information, or which part is relevant information. Par (2020) states that this strategy also allows learners to adjust the reading pace according to the difficulty of the text. The power the learners have over the reading process by applying the problem-solving strategies will fulfil the need for power.

Achievement Need and Support Reading Strategies

The need for achievement refers to individuals who are performance-oriented. Baptista et al. (2021) state that these individuals will find ways to improve their performance, which include getting feedback from others who have the authority to comment on their work or progress. According to Stoner and Freeman (1999, as cited in Baptista et al., 2021), these individuals seek higher levels of knowledge and achieve greater challenges but with moderate risks. They prefer situations that can enhance or improve their performance, but also care about the amount of risk they are taking. McClelland (1965) also mentions that these types of individuals are not driven by money but might use it to sustain or improve their achievements and performance. Their motivation is rooted in the sense of accomplishments and achievements. Hence, by applying the support reading strategies, learners can fulfil their need for achievement.

As the name suggests, support reading strategies involve learners using aids to understand the textual information. These aids include the use of a dictionary, note-taking, highlighting important key points and many more. This strategy is applied to support the learners during the process of understanding a text or constructing the meaning of it (Par, 2020). Learners with achievement needs can apply this strategy as it can help them to overcome the challenges when comprehending a text. As individuals with achievement needs prefer to take moderate risks, this strategy will help them to lower the possibility of facing great difficulty while trying to gain knowledge from reading materials. Moreover, the use of tools when trying to understand a difficult text will appeal to achievement-oriented learners, as each use of a support strategy gives them the feedback that they need to reinforce the sense of accomplishment.

READING ANXIETY

Reading anxiety has been one of the subjects that gain attention within the research field as it is linked to learners' reading comprehension and engagement where this will affect their academic performances (Li, 2021). Especially in second language contexts. Reading anxiety refers to negative emotions such as fear and worry towards written texts. These emotions are usually experienced by students that perceive the texts as cognitively or linguistically demanding (Zhao, 2020).

According to Macdonald et al., (2021), anxiety will affect learners' cognitive resources where these learners tend to concentrate on their fear of failure and lack of understanding rather than the meaning construction which result in reduced reading fluency and comprehension (Soares et al., 2023). One of the prominent factors is linguistic factors. Unfamiliar words, grammatical structures and complex texts are reported as a trigger for their anxiety among the learners (Mohammaddockht & Fathi, 2022). Learners tend to experience cognitive overload when they have to read texts that exceed their proficiency level which will increase their anxiety level and hinder reading engagement (Zhao et al., 2025).

In addition, as reported by Tsai and Lee (2018); Yohana and Hanim Ismail (2024), the content of the texts have been one of the reasons to increase students' anxiety levels due to the struggle to activate and relate to prior knowledge which can lead to uncertainty, misinterpretation and misunderstanding. Not only that, it is highlighted by Akbar Solati et al., (2024) instructional factors also contribute to reading anxiety. It is more notable when the instructional practices emphasize speed and accuracy. Public evaluation; reading in front of classmates and feedback is given publicly also can be one of the factors that could trigger learners' anxiety as they are afraid of negative feedback in front of their classmates (Akbar Solati et al., 2024).

According to Wijayati et al. (2021), there is a negative moderate-strong correlation between reading comprehension and reading anxiety. This shows that learners with higher anxiety levels are inclined to not perform well on their comprehension tasks. In contrast, Zhang, (2023) highlighted that there are variables that

can affect the strength of this relationship such as reading strategies, language proficiency and instructional support. Hence, research shows that reading anxiety is a complex construct that is influenced by linguistics, contextual factors and reading strategies that are used by the learners Past Studies

Past Studies on Reading Strategies and Reading Anxiety

Multiple studies have been done to investigate reading anxiety and reading strategies. Studies concerning reading strategies mainly focused on online reading strategies (Amer et al., 2019; Raja Yacob & Mohamad, 2023), both of which were conducted on undergraduate students to study the most preferred reading strategies of learners. On the other hand, research regarding reading anxiety is concentrated on the relationship between reading anxiety and performance (Mohd. Zin & Rafik-Galea, 2010; Petrus & Shah, 2020) with the exception of one study conducted to investigate the role of the affective factor (trait reading anxiety and state reading anxiety) and the cognitive factor in text comprehension (Chow et al., 2021).

Firstly, Mohd. Zin and Rafik-Galea (2010) conducted a study on 218 Malay ESL diploma students to investigate the relationship between reading anxiety and academic reading performance. The study opted for the Foreign Language Reading Anxiety Scale (FLRAS) and comprehension tests which identified moderate to high levels of reading anxiety. The study noted that anxious students generally faced more cognitive interference which leads to lower comprehension. Importantly, the study highlights that reading anxiety does not only significantly affect ESL learners, but is also linked to lower academic reading performance. This study posits the implication that reading anxiety management is a crucial element in improving comprehension especially in the higher education sector.

Next, Amer et al. (2019) studied the online reading strategies used by 220 first-year and fourth-year students. An adapted version of the Survey of Reading Strategies (SORS) by Sheorey and Mokhtari (2001) was utilized to compare between the first-year and fourth-year students to answer 2 main questions; which strategies are favoured by which group of students and to what extent do the strategies differ. Variations in the use of reading strategies according to gender was also investigated. The findings reveal that the fourth-year students opt for global strategies more than the first-year students, while also using noticeably higher frequency strategies. Additionally, there are no statistically significant differences in the use of different strategies by the different genders. The study highlights that academic experience causes an evolution in the preferred online reading strategies of the students which further implies the significance of the awareness of online reading strategies to enhance comprehension.

On the other hand, Petrus and Shah (2020) investigated the level of rural ESL learners' reading anxiety as well as its correlation with language competence. Using English as a Foreign Language Reading Anxiety Inventory (EFLRAI) framework developed by Zoghi (2012) and the Survey of Reading Strategies (SORS) by Mokhtari and Sheorey (2001), 139 rural Form 4 ESL students in Sarawak were surveyed to reveal medium level of reading anxiety which are primarily caused by unfamiliar vocabularies and lack of cultural contexts. The study found a weak negative correlation between reading anxiety and language competence, as well as a weak positive correlation between reading strategies and language competence. These findings suggest that while reading anxiety affects performance, appropriate reading strategies may serve to enhance learners' competence. The study implies that using varied strategies may help learners overcome reading anxiety and improve their competence.

A study investigating the role of the affective and cognitive factors in reading comprehension in ESL learning among 105 Chinese undergraduates was conducted by Chow et al. (2021). The study found that reading anxiety (both trait reading anxiety and state reading anxiety), defined in the paper as the affective factor, and working memory, defined in the paper as the cognitive factor, are significant predictors to ESL text comprehension. Particularly, reading anxiety negatively correlates to comprehension while working memory positively correlates to comprehension. This study also shows that the affective factor partially mitigates the relationship between the cognitive factor and comprehension, highlighting the importance of both anxiety and working memory in the reading performance of ESL learners. This leads to the implication that enhancing learners' comprehension hinges on reducing reading anxiety and strengthening the working memory.

Meanwhile, Raja Yacob and Mohamad (2023) investigated the metacognitive online reading strategies used by 44 Malaysian ESL undergraduates. The study used an adapted version of quantitative survey where online reading strategies are categorised into global, problem-solving and support strategies. The study noted that learners frequently opt for problem-solving strategies such as re-reading difficult texts and visualising information. This study highlighted that metacognitive awareness profoundly impacts comprehension in online contexts and emphasized that global, problem-solving and support strategies must be extensively taught and used in ESL classrooms to enhance engagement and reading performance.

Evidently, ESL and EFL learners may use reading strategies to enhance their comprehension but at the same time experience reading anxiety which may impact their grasp of the material. However, the studies focused independently on either reading anxiety or reading strategies. This raises the need to find a correlation between the two which shall be addressed in this current paper.

Conceptual Framework of the Study

Figure 1 below illustrates the conceptual frameworks of the study. This research explores the influence of reading strategies on reading anxiety. Rahmat et al. (2020) point out that one of the contributory factors as to why learners have reading anxiety is due to the difficulty they face when making sense of the given texts. In reading instruction, strategies can be taught to correspond to their learning needs. McClelland (1965) outlines three aspects in the Theory of Needs, as learners depend on affiliation, power and achievement needs. To fulfill the needs for affiliation, readers should implement global strategies through social and collaborative reading. To meet the needs for power, readers should employ problem-solving strategies through control over learning and comprehension. Lastly, to satisfy the needs for achievement, readers should obtain support reading strategies through overarching reading goals and success.

The instrument for reading anxiety in this paper is adopted from Miao and Vibulphol (2020) as well as Zoghi (2012). Miao and Vibulphol (2020) categorise anxiety into two categories, which are top-down and bottom-up. This categorisation reveals the reading processing models which are either related to the text or to the readers themselves. On the one hand, top-down approaches put emphasis upon higher-level cognitive processes that draw from prior knowledge and comprehension strategies. This anxiety type is associated with deficits in constructs such as (i) background and cultural knowledge and (ii) general reading ability. On the other hand, bottom-up approaches are centered on the fundamental linguistic building blocks that must be decoded before meaning can be constructed, Miao and Vibulphol (2020) describe bottom-up reading anxiety as challenges in constructs like (i) vocabulary and (ii) grammar. Apart from that, Zoghi (2012) states teaching methods cause classroom reading anxiety among learners.

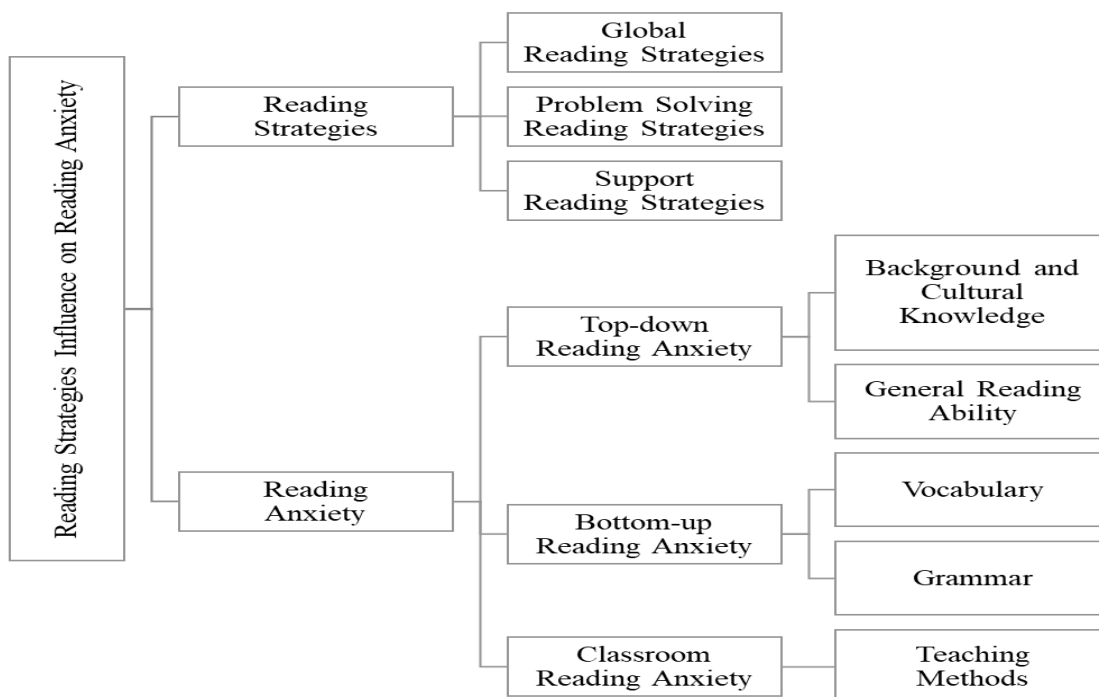


Figure 2- Conceptual Framework of the Study

Reading Strategies Influence on Reading Anxiety

METHODOLOGY

This research employs a quantitative approach to explore the influence of reading strategies on reading anxiety. Adapted from Miao and Vibulphol (2020), Zoghi (2012) and Amer et al. (2010), a 5-point Likert-scale survey is the instrument distributed to a convenience sample of 236 participants. In the questionnaire, the respondents rated the items based on the frequency of occurrences. Table 1 below shows the categories used: 1 is for Never, 2 is for Rarely, 3 is for Sometimes, 4 is for Very Often and 5 is for Always. It is to reveal the variables in Table 3.

Table 1- 5-point Likert Scale Used

Number	Frequency
1	Never
2	Rarely
3	Sometimes
4	Very Often
5	Always

Table 2 shows the distribution of items in the survey across two sections, B and C. Section B measures the reading anxiety variables based on Miao and Vibulphol (2020) as well as Zoghi (2012). Miao and Vibulphol (2020) divide reading anxiety variables into two groups or categories which are top-down and bottom-up. These two are further split into two subgroups or constructs which are background and cultural knowledge with 3 items and general reading ability with 4 items for the former group. Thus, the total items for the top-down reading anxiety category are 7. Furthermore, for the latter group, there are 5 items for vocabulary and 4 items for grammar. Hence, 9 items are the total items for the bottom-up reading anxiety category. Moreover, Zoghi (2012) specifies one category, classroom reading anxiety and its construct is Teaching Method with a total of 5 items. The cumulative items for Section B are 21 with the Cronbach Alpha value of .942. This overall Cronbach Alpha value tests the internal consistency of all 21 items together. Despite having multiple categories and constructs, this specific section measures a single variable, Reading Anxiety and it is treated as one unified concept.

Table 2- Distribution of Items in the Survey

Section	Variable	Category	Construct	Item	Total by category	Total by section	Cronbach Alpha
B	<u>READING ANXIETY</u> Miao & Vibulphol (2020)	Top-down reading anxiety	Background and Cultural Knowledge	3	7	21	.942
			General Reading Ability	4			
		Bottom-up reading	Vocabulary	5	9		

		anxiety	Grammar	4			
	Zoghi (2012)	Classroom reading anxiety	Teaching Methods		5		
C	<u>READING STRATEGIES</u> (Amer, et.al., 2010)		Global	6		18	.854
			Problem-Solving	6			.857
			Support	6			.776
						<u>39</u>	<u>.926</u>

With regard to Section C, it addresses reading strategy variables based on Amer et al. (2010). There are three constructs: global, problem-solving, and support strategies, with 6 items respectively and 18 cumulatively. The Cronbach's Alpha values for each construct are .854 for global strategies, .857 for problem-solving strategies, and .776 for support strategies. Each construct is regarded as a distinct scale that requires its own reliability check to ensure the items within that particular construct are internally consistent. The overall Cronbach Alpha value (.926) for all 39 items shows the total scale reliability, therefore, revealing good reliability of the instrument used. Further analysis using SPSS was then conducted for this study.

Table 3- Reliability Levels, Cronbach's Alpha Ranges, and Their Interpretations

Reliability Level	Cronbach's Alpha range	Interpretation
Excellent	0.9 and above	Excellent internal consistency
Good	0.80-0.89	Strong internal consistency
Acceptable	0.70-0.79	Acceptable internal consistency
Questionable	0.60-0.69	Questionable internal consistency
Poor	Below 0.6	Poor internal consistency

Reliability analysis was conducted to determine the internal reliability of the instrument. Table 3 illustrates the distribution and interpretation of Cronbach's Alpha ranges. Cronbach's Alpha scores between 0.7 and 0.9 are considered acceptable to excellent (Ahmad et al., 2024), while any scores below 0.7 are considered questionable or poor.

FINDINGS

Demographic Analysis

Table 4 shows the percentage for the demographic profile. Zienefuss et al. (2021) demonstrate that demographic data reported in percentages allows for the sample representativeness and generalizability to a larger population. Percentages also provide a clear overview of participant background and offer a comprehensive illustration of sample composition.

Table 4- Percentage for Demographic Profile

Question	Demographic Profile	Categories	Percentage (%)
1	Gender	Male	42%
		Female	58%
2	Level of Education	Foundation Level	34%
		Pre-Diploma Level	27%
		Diploma Level	30%
		Bachelor Degree	9%
3	Self-Rating English Proficiency	Low	4%
		Average	87%
		High	9%
4	Reading material Preferred	Physical Books	64%
		Online Materials	36%

Table 4 presents the percentages for the participants' demographic profile. 58% out of the 236 participants are female, and 42% are male. The highest percentage of participants is students from the Foundation Level, with 34%. The second highest is 30% of participants, which are students from the Diploma Level. This is followed by 27% of Pre-Diploma Level participants and 9% of Bachelor's Degree students. The participants also rate their English proficiency, in which 87% of them think that they have an average proficiency level, 9% assume that they have high proficiency, and only 4% of them think that they have low proficiency. Lastly, 64% of the participants prefer physical books, and 36% of them prefer online reading materials. This study includes participants from different levels of education, where the majority of them rate themselves as having average English proficiency and prefer physical over online reading materials.

DESCRIPTIVE STATISTICS

According to Vetter (2017), Mean (M) indicates the average, or centre of a data set. Standard Deviation (SD) represents the typical distance of individual observations from the mean which shows the data's variability or spread. A low SD means the data points are clustered close to the mean. A high SD indicates they arrived e more spread out. It is good to have a high SD.

Findings for Global Reading Strategies

This section presents data to answer Research Question 1- How do learners perceive their reading strategies? In relation to this study, this is measured by (i) global , (ii) problem-solving and (iii) supporting strategies.

(i) Table 5- Mean for Global Strategies

Item	Mean	SD
GSQ1 I think about whether the content of the on-line text fits my reading purpose.	3.53	0.97
GSQ2 When reading on-line, I decide what to read thoroughly and what to ignore.	3.31	0.98
GSQ3 I use context clues to help me better understand what I am reading online.	3.56	0.99

GSQ4 I use typographical features like boldface and italics to identify key Information.	3.32	1.19
GSQ5 I try to guess what the content of the on-line text is about when I read.	3.72	1.03
GSQ6 I scan the on-line text to get a basic idea of whether it will serve my purposes before deciding to read it.	3.56	1.06

The result in Table 5 illustrates that respondents have a moderate to relatively high use of global reading strategies. Among all these items, GSQ 5 is the highest mean score with (M=3.72, SD = 1.03). Based on this result, it shows that the predicting text content strategy is the most used by the respondents. It is followed by GSQ3 and GSQ 6 with the same mean score (M=3.56, SD = 0.99) and (M=3.56, SD = 1.06). This shows that the respondents use context clues and they scan texts to understand and decide if the texts are relevant for them. Item GSQ1 with (M = 3.53, SD = 0.97) suggests that respondents will consider if the content of the texts suit their purposes. However, GSQ2 (M = 3.31, SD = 0.98) and GSQ4 (M = 3.32, SD = 1.19) have low mean scores which suggest that the respondents use less of deciding what to read or ignore and rely on typographical features to recognise key information. Hence, the findings of this table shows that respondents generally use global strategies when they read online texts.

(ii) Table 6 -Mean for Problem-Solving Strategies

Item	Mean	SD
PSSQ1 I try to get back on track when I lose concentration.	3.89	0.92
PSSQ2 I adjust my reading speed according to what I am reading on-line.	3.76	0.95
PSSQ3 I stop from time to time and think about what I am reading on-line.	3.41	0.97
PSSQ4 When on-line text becomes difficult, I re-read it to increase my understanding.	4.05	0.98
PSSQ5 When I read on-line, I guess the meaning of unknown words or phrases.	3.64	0.92
PSSQ6 I can distinguish between fact and opinion in on-line texts.	3.39	0.91

The findings for Table 6's items indicate that the respondents have a high use of problem-solving strategies when reading online texts. Among all of these items, PSS4's result has the highest mean score (M = 4.05, SD = 0.98), this shows that the majority of the respondents use rereading strategy. This follows by item PSSQ1 (M = 3.89, SD = 0.92) and PSSQ2 (M = 3.76, SD = 0.95) which suggest that the respondents will try to concentrate and adjust their reading speed according to the online text that they read. PSSQ5 (M = 3.64, SD = 0.92) indicates that respondents tend to guess the meaning of unknown phrases or words. However, PSSQ3 (M = 3.41, SD = 0.97) and PSSQ6 (M = 3.39, SD = 0.91) have low mean scores which suggest that the respondents are less likely to pause and reflect on the online text and differentiate between opinions and facts. Overall, the results suggest that respondents actively use problem-solving strategies to overcome difficulties that they face while reading online texts.

(iii) Table 7- Mean for Support Strategies

Item	Mean	SD
SSQ1 I take notes while reading on-line to help me understand what I read.	3.01	1.12

SSQ2 I use reference materials (e.g. an on-line dictionary) to help me understand what I read on-line.	3.49	1.09
SSQ3 I paraphrase (restate ideas in my own words) to better understand what I read on-line.	3.44	0.98
SSQ4 I ask myself questions I like to have answered in the on-line text.	3.22	1.02
SSQ5 When reading on-line, I translate from English into my native language.	3.24	1.09
SSQ6 When reading on-line, I think about information in both English and my mother tongue.	3.5	1.02

The results in Table 7 reveal that the respondents show moderate use of support strategies in online reading. Between these items, SSQ6 has the highest mean score ($M = 3.50$, $SD = 1.02$), this shows that respondents frequently use bilingual processing as support strategy. This follows with SSQ2 ($M = 3.49$, $SD = 1.09$) and SSQ3 ($M = 3.44$, $SD = 0.98$) which suggest that respondents use reference materials and they paraphrase the text to enhance their understanding. SSQ5 ($M = 3.24$, $SD = 1.09$) and SSQ4 ($M = 3.22$, $SD = 1.02$) have moderate mean scores. This indicates that the respondents occasionally use translation and self-questioning strategies. However, SSQ1 has the lowest mean score with ($M = 3.01$, $SD = 1.12$). This suggests that note-taking strategy is rarely used by the respondents. Hence, Table 7 indicates that respondents use diverse support strategies to do online reading but support strategies are seldom used by the respondents.

Findings for Reading Anxiety

This section presents data to answer Research Question 2- How do learners perceive their reading anxiety? In the context of this study, this is measured by (a) top-down anxiety, (b) bottom-up anxiety and (c) classroom reading anxiety. Top-down anxiety is measured by (i) background and cultural knowledge and (ii) general reading ability. Bottom-up reading anxiety is measured by (i) vocabulary and (ii) grammar. Classroom reading anxiety is measured by teaching methods.

a. Top-down Reading Anxiety

i) Table 8-Mean for Background and Cultural Knowledge (BCK)

Item	Mean	SD
BCKQ1 I do not feel at ease when the title of the text is unfamiliar to me.	2.76	0.82
BCKQ2 It is worrying to me when the ideas expressed in the text are culturally unclear.	3.07	0.75
BCKQ3 I get upset when I lack the previous knowledge about the ideas expressed in the text.	3.19	0.95

Table 8 reflects how unfamiliar contextual or cultural elements in a text affects learners' reading anxiety. Item BCKQ3 scored the highest mean (3.19) reflecting that the participants' limited prior knowledge of the ideas significantly affects their anxiety. Item BCKQ2 recorded a mean of 3.07 which postulates that the participants' experience worry when the ideas in the reading texts are culturally unclear. The lowest mean score (2.76) for the item BCKQ1 suggests that learners experience moderate discomfort when the title of the text is unfamiliar. The relatively moderate SD for the items suggests that although there are some variations to the participants' responses, background and cultural knowledge (or lack thereof) stimulates reading anxiety. This supports that

top-down reading anxiety is influenced by the readers' background and cultural knowledge, aligning with Miao & Vibulphol's findings in 2020.

Table 9- Mean for General Reading Ability (GRA)

Item	Mean	SD
GRAQ1 I worry when I cannot get the gist of the text although no new vocabulary items or grammatical points exist in the text.	3.06	0.94
GRAQ2 When I cannot recognize minor ideas (details) of the text, it is worrying to me.	3.10	0.99
GRAQ3 I am nervous when I cannot spot the main idea of a paragraph.	3.10	1.12
GRAQ4 It bothers me when I cannot express my opinions or feelings about the text.	2.94	1.04

Table 9 indicates how the reader's general ability to read a text affects their anxiety. The highest mean scores (3.10) for item GRAQ2 and item GRAQ3 are related to identifying main and minor ideas in a text, which reflect that the readers' experience more anxiety when they are unable to classify the ideas in a text. Item GRAQ1 scored a mean of 3.06 which shows that the participants sometimes feel worried when they cannot understand the general meaning of a text even when there are no new vocabularies or grammatical points. Participants still experience anxiety even when the vocabulary and grammar is familiar alludes to comprehension difficulties, and not just linguistic barriers. The lowest mean (2.94) for item GRAQ4 indicates that the participants are only occasionally bothered when they are unable to express their opinions or feelings of the material. These results show that the participants' reading anxiety is not only tied to their vocabulary or grammar knowledge but also in their general comprehension skills. The moderate-to-high SD values suggest varied levels of anxiety, highlighting the need for instructional strategies to address the learners' ability to identify key ideas and in turn express textual comprehension.

Bottom-up Reading Anxiety

Table 10- Mean for Vocabulary(V)

Item	Mean	SD
VQ1 It bothers me when I encounter a lot of words whose meanings are unclear.	3.17	0.99
VQ2 I get upset when I cannot figure out the meaning of a word that I feel I have seen before.	3.23	1.13
VQ3 I get confused when the word that I know has a different meaning in the sentence.	3.03	1.00
VQ4 I get upset when I come across idioms that are unfamiliar to me.	2.89	1.12
VQ5 I feel worried when the unknown word is difficult to pronounce.	2.83	1.12

Table 10 shows the distribution of Bottom-Up Reading Anxiety in relation to Vocabulary. It is presented that most participants sometimes display signs of anxiety when they encounter vocabulary-related issues. The mean scores range from 2.83 to 3.23. Item VQ2 has the highest mean, which is 3.23 (SD = 1.13), indicating that most participants would sometimes display signs of anxiety when they cannot identify the meaning of a familiar word. The second-highest mean score is 3.17 (SD = 0.99) for item VQ1. It suggests that participants

are affected when the meanings of words are unclear. The lowest mean score, which is 2.83 (SD = 1.12), belongs to item VQ5. This reflects that most participants moderately feel concerned about mispronouncing unknown words. The results indicate that participants display signs of anxiety more frequently when the issue is related to the meanings of unfamiliar words as compared to the pronunciation of the words. Although the SD values suggest that participants' responses are somewhat varied, it can be observed that situations pertaining to vocabulary issues do influence the students' reading anxiety.

Table 11- Mean for Grammar(G)

Item	Mean	SD
GQ1 I am nervous when a certain sentence is long and has a complex structure.	2.69	1.10
GQ2 When a certain sentence is grammatically unfamiliar is worrying to me.	2.82	1.10
GQ3 I feel upset when the tense of a certain sentence is unclear to me.	2.83	1.03
GQ4 I worry when I am unable to recognize different parts of speech such as adjectives, adverbs, or connective words.	2.92	1.05

Table 11 presents the distribution of Bottom-Up Reading Anxiety in relation to Grammar. The mean scores range from 2.69 to 2.92, which means participants rarely or almost sometimes display signs of anxiety when it is related to grammatical issues. Item GQ4 has the highest mean, which is 2.92 (SD = 1.05), indicating that participants experience signs of anxiety when they are not able to differentiate between the parts of speech. The second highest is for item GQ3, with the mean score being 2.83 (SD = 1.03). This shows that unclear tenses have a moderate negative effect towards the participants. Next, item GQ2 records a mean of 2.82 (SD = 1.10), which reflects that participants experience worry when a sentence is grammatically unfamiliar. Lastly, item GQ1 has the lowest mean, which is 2.69 (SD = 1.10). This indicates that participants are rarely negatively affected when a sentence has a complex structure. The SD values suggest that although there are differing frequency levels of reading anxiety experience among participants, they are all affected (to certain extents) by grammar-related issues when reading a text.

Classroom Reading Anxiety

Table 12- Mean for Teaching Methods (TM)

Item	Mean	SD
TMQ1 It bothers me when the instructor calls on me to read out.	2.58	1.14
TMQ2 It worries me when the instructor calls on me to translate a piece of an English text into our first language.	2.83	1.07
TMQ3 When the instructor asks me reading comprehension questions, it is worrying to me.	2.70	1.08
TMQ4 It upsets me when the instructor chooses uninteresting texts to read in class.	2.35	1.14
TMQ5 I am nervous when the instructor uses English as a medium	2.21	1.03

of instruction and hardly ever makes use of our first language.		
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Table 12 shows students’ anxiety levels that link to teaching methods. TMQ2 has the highest mean score (M = 2.83, SD = 1.07) which means that the respondents will have anxiety whenever their instructors ask them to translate English text to their first language. Then, it follows with TMQ3 which the mean score is (M = 2.70, SD = 1.08). This indicates that the respondents will be worried whenever their instructors question them about reading comprehension. Item TMQ1 records a mean score of M = 2.58 (SD = 1.14) which indicates that it bothers and causes the respondents anxiety whenever they are asked by their instructors to read out. Next, TMQ4 with the mean score of 2.35 (SD = 1.14) suggests that the respondents are apprehensive whenever they are given uninteresting texts to read in class. The lowest mean score is TMQ5 (M = 2.21, SD = 1.03). This indicates that the respondents feel nervous if their instructors use only one language which is English and barely use their first language. Overall, these findings indicate a moderate level of anxiety among the respondents that linked with teaching methods.

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 questions on correlation.

Findings for Relationship between global reading strategies and reading anxiety

This section presents data to answer Research Question 3- Is there a relationship between global reading strategies and reading anxiety? To determine if there is a significant association in the mean scores between global reading strategies and reading anxiety, data is analysed using SPSS for correlations. Results are presented separately in table 13 below.

Table 13- Correlation between global reading strategies and reading anxiety

		GLOBAL READING STRATEGIES	READING ANXIETY
GLOBAL READING STRATEGIES	Pearson (Correlation)	1	.226**
	Sig (2-tailed)		<.001
	N	236	236
READING ANXIETY	Pearson (Correlation)	.226**	1
	Sig (2-tailed)	<.001	
	N	236	236

**Correlation is significant at the 0.01 level (2-tailed)

Table 13 shows there is an association between global reading strategies and reading anxiety. Correlation analysis shows that there is a weak significant association between global reading strategies and reading anxiety (r=.226**) and (p<.001). 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. This means that there is also a weak positive relationship between global reading strategies and reading anxiety.

Findings for Relationship between problem-solving reading strategies and reading anxiety

This section presents data to answer Research Question 4- Is there a relationship between problem-solving reading strategies and reading anxiety? To determine if there is a significant association in the mean scores between problem-solving reading strategies and reading anxiety, data is analysed using SPSS for correlations. Results are presented separately in tables below.

Table 14- Correlation between problem-solving reading strategies and reading anxiety

		PROBLEM-SOLVING READING STRATEGIES	READING ANXIETY
PROBLEM-SOLVING READING STRATEGIES	Pearson (Correlation	1	.181**
	Sig (2-tailed)		<.001
	N	236	236
READING ANXIETY	Pearson (Correlation	.181**	1
	Sig (2-tailed)	<.001	
	N	236	236

**Correlation is significant at the 0.01 level (2-tailed)

Table 14 shows there is an association between problem-solving reading strategies and reading anxiety. Correlation analysis shows that there is a weak significant association between problem-solving reading strategies and reading anxiety ($r=.181^{**}$) and ($p<.001$). 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. This means that there is also a weak positive relationship between problem-solving reading strategies and reading anxiety. Null hypothesis is rejected.

Findings for Relationship between support reading strategies and reading anxiety

This section presents data to answer Research Question 5- Is there a relationship between support reading strategies and reading anxiety? To determine if there is a significant association in the mean scores between supporting reading strategies and reading anxiety, data is analysed using SPSS for correlations. Results are presented separately in Table 15 and 16 below.

Table 15- Correlation between supporting reading strategies and reading anxiety

		SUPPORT READING STRATEGIES	READING ANXIETY
SUPPORT READING STRATEGIES	Pearson (Correlation	1	.159*

	Sig (2-tailed)		<.001
	N	236	236
READING ANXIETY	Pearson (Correlation	.159*	1
	Sig (2-tailed)	<.001	
	N	236	236

**Correlation is significant at the 0.01 level (2-tailed)

Table 1 shows there is an association between supporting reading strategies and reading anxiety. Correlation analysis shows that there is a high significant association between supporting reading strategies and reading anxiety ($r=.159^*$) and ($p=<.001$). 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. This means that there is also a strong positive relationship between supporting reading strategies and reading anxiety. Null hypothesis is rejected.

INFERENCE STATISTICS

According to He (2024), there are three main functions of a T-test and ANOVA. Firstly, both are conducted to compare means. This test is also done to identify if the average scores (mean) or values of two groups, or one group against a known value, are different enough to be viewed as statistically meaningful and are not simply due to random chance. Secondly, T-test and ANOVA are carried out to test hypotheses. T-tests and ANOVA are used 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 and ANOVA are done to recognise significant differences. The output of a t-test indicates a p-value (significance value). If this p-value is below a predetermined 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 Significant Difference for all factors across levels of education

This section presents data to answer Research Question 6: Is there a significant difference for reading strategies and reading anxiety across levels of education?

(H4- There is no significant difference for reading strategies and reading anxiety across levels of education)

Table 16- ANOVA for reading strategies and reading anxiety across levels of education

		ANOVA				
		Sum of Squares	df	Mean Square	F	Sig.
READING_STRATEGIES	Between Groups	11.099	3	3.700	10.773	<.001
	Within Groups	79.675	232	.343		
	Total	90.774	235			
READING_ANXIETY	Between Groups	8.807	3	2.936	6.299	<.001
	Within Groups	108.133	232	.466		
	Total	116.941	235			

With reference to table 12, a one way ANOVA was conducted to examine the effects reading strategies and reading anxiety on levels of education. The analysis shows there is a significant difference between reading strategies ($F=10.773, p=0.001$) and reading anxiety ($F=2.936, p=0.01$) across levels of education. The null hypothesis is therefore re

CONCLUSION

Summary of Findings and Discussions

Research Question 1 examined how learners perceive their reading strategies through global, problem-solving and support categories. Findings obtained from 236 participants revealed distinct patterns across the three constructs. Firstly, in terms of global strategies, assuming what the English texts entail is the primary approach as such engagement would highly fulfil their needs for affiliation. This study is in accordance with Amer et al. (2019) who investigated the relationship between reading anxiety and academic reading performance as the students utilised global strategies the most. On the contrary, Raja Yacob and Mohammad (2023) reported that heightened focus and contextual clues facilitated their comprehension. This dissimilarity can be attributed to Nilforoushan et al. (2023), as perceived metacognitive reading strategies differed based on the type of text.

Apart from that, with regard to problem-solving strategies, learners employed rereading as the most commonly used technique when they found it difficult to make sense of texts. Resolving this issue would give them a high sense of control and thus, satisfy their needs for power. The results of the present study are consistent with the results from Raja Yacob and Mohamad (2023) which explored the metacognitive online reading strategies. The striking similarity between the past and present study is because learners often opt for problem-solving strategies, specifically re-reading difficult texts for better understanding. Hence, this remains a preferred and consistent technique across different reading contexts.

Finally, in relation to support strategies, bilingual processing was found to be the most frequent method used, indicating that the learners relied on their mother tongue to facilitate understanding of texts and resultantly, fulfill their needs for achievement. The mental translation not only enhanced their reading performance, it also mitigated comprehension risks (Stoner & Freeman, 1999, as cited in Baptista et al., 2021). By utilising their first language as a cognitive support tool, learners were able to reduce the second language demands and potentially diminish performance deficits such as reading anxiety. Otherwise, learners who are anxious generally face higher cognitive interference and later, lower comprehension, so managing reading anxiety is a significant aspect in deepening understanding, particularly at the tertiary level of education (Mohd. Zin & Rafik-Galea, 2010).

Research Question 2 investigated the learners' perceptions of reading anxiety. On the one hand, top-down reading anxiety can be categorised as background and cultural knowledge as well as general reading ability. The main source of anxiety is due to limited prior knowledge of background and culture. Similarly, this finding is evident in Tsai and Lee (2018) as well as Yohana and Hanim Ismail (2024) who found that the anxiety levels spiked due to the students struggling to activate and relate to prior knowledge. Inadequate relevant background or cultural knowledge may impede comprehension ability and therefore, may even be overwhelming. Moreover, for general reading ability, not being able to spot the major and minor ideas in paragraphs causes the respondents to be the most anxious while reading, making them feel unsure whether what to focus on and whether what they understand is correct.

Bottom-up reading anxiety, on the other hand, can be divided into two categories which are vocabulary and grammar. Vocabulary-related anxiety manifested the most in one specific pattern: learners could recognize the words but could not recall their meanings. This is in agreement with Petrus and Shah (2020) findings which revealed the main contributory factor to medium level of reading anxiety was unfamiliar vocabularies. In addition, grammar anxiety centered on difficulty identifying parts of speech. Difficulty identifying parts of speech impaired their capability to understand the grammatical relationships and extract accurate interpretations from complex texts.

Lastly, classroom reading anxiety was identified as a concern whenever their instructors asked the students to translate English text to their first language. Translation requests may lead to learners' apprehension because according to Akbar Solati et al., (2024), being publicly evaluated triggered learners' anxiety. The manifestation of reading anxiety occurred when learners were worried about inadequate comprehension and potential failure (Macdonald et al., 2021).

Research Questions 3 through 5 examined the relationships between different reading strategies and anxiety. The analysis uncovered no substantial relationships across all three strategy categories. Correlation analysis showed no meaningful association, with only a weak significant correlation detected for global reading strategies and reading anxiety. Likewise, no significant relationship with reading anxiety was demonstrated in problem-solving reading strategies, again showing only a weak significant correlation in the correlation analysis. There is no association with reading anxiety shown in support reading strategies. This finding diverges from Petrus and Shah (2020), who found a weak positive correlation between reading strategies and language competence, as well as a weak negative correlation between reading anxiety and language competence. While Petrus and Shah (2020) suggested that appropriate reading strategies may help learners overcome reading anxiety, the current study found minimal direct relationship between strategy use and anxiety levels. Although reading strategies and reading anxiety may coexist, their relationship is too weak to imply that one directly affects the other.

Research Question 6 analysed whether reading strategies and reading anxiety differed significantly across educational levels. Analysis revealed no significant differences in either reading strategies or reading anxiety based on levels of education. This suggests that learners across different levels demonstrate similar patterns in their strategy use and anxiety experiences. This finding contradicts Amer et al. (2019), who found that fourth-year students utilised global strategies significantly more than first-year students and overall, showed a noticeably higher frequency of strategy use. Although Amer et al. (2019) concluded that academic experience causes a transformation in preferred reading strategies, the current study suggests that educational level may not be a determining factor in either strategy preference or anxiety levels. This discrepancy may be attributed to distinct sample characteristics or educational experiences. The current study's findings imply that factors other than educational level, such as individual differences, prior language learning experiences, or instructional approaches, may play more vital roles in shaping both reading strategy use and reading anxiety.

Implications and Suggestions for Future Research

Theoretical Implications

Through the lens of McClelland's Theory of Needs (1965) and the proposed conceptual framework indicating reading strategies influence reading anxiety, the findings partially support this theoretical connection. The participants' preference toward prediction as global strategies allows an attempt to engage meaningfully which reflects the need for affiliation. Correspondingly, to exercise control over the comprehension process, the predominant use of rereading as a problem-solving strategy fulfills their need for power by actively overcoming difficulties instead of being passive. As a support strategy, the reliance on bilingual processing is aligned with the learners' need for achievement because they utilize their first language as support to successfully accomplish their reading goals. The conceptual framework also highlighted multiple dimensions of reading anxiety based on Miao and Vibulphol (2020) and Zoghi (2012): top-down anxiety (background and cultural knowledge, general reading ability), bottom-up anxiety (vocabulary, grammar), and classroom anxiety (teaching methods). The findings confirm that learners experience anxiety across all these dimensions and consequently, validate the multidimensional nature of reading anxiety proposed in the conceptual framework.

However, the weak to nonexistent correlations between reading strategies and reading anxiety challenge the theoretical premise that fulfilling these needs through strategic reading directly reduces anxiety. The current findings suggest that strategy use and anxiety may operate independently rather than in a direct cause-and-effect relationship. In light of these findings, reconceptualisation may be needed in the theoretical relationship between reading strategies and reading anxiety.

Pedagogical Implications

The paper offers significant insights for learners seeking to enhance their reading comprehension and reduce anxiety. Reading strategies like predicting, rereading, and bilingual processing should be employed as these are legitimate and effective techniques for text comprehension. Rather than viewing mother tongue use as a weakness, bilingual processing should be embraced as an important support strategy that facilitates understanding and reduces cognitive load. Not only that, reading strategies and reading anxiety should be viewed independently, meaning that the development of strategic competence alone will not alleviate anxiety automatically. As a result, learners should actively engage in anxiety management techniques and develop metacognitive awareness.

For classroom instructors, these findings reveal an approach that is comprehensive and dual-focused for reading instruction. Teachers must explicitly teach the reading strategies that students naturally gravitate toward, such as informed prediction, strategic rereading, and effective bilingual processing. Since reading strategies do not lessen anxiety directly, teachers cannot solely rely on strategy instruction but must create low-anxiety reading environments through supportive classroom atmospheres, positive reinforcement, and suitable difficulty levels that build confidence progressively.

For institutional leaders and policymakers, these findings call for systemic changes in the way reading instruction is conceptualized and implemented. The management should recognize that addressing both cognitive and affective dimensions is required for effective reading instruction. Professional development programs should be conducted to equip educators with skills in both strategy instruction and anxiety management techniques. Resources should be allocated for comprehensive reading support programs that include not only skills-based workshops but also stress-management training, counseling services and peer support groups, specifically adapted to language learning.

Suggestions for Future Research

Despite the valuable insights into reading strategies and reading anxiety that the paper offers, there are several suggestions for future investigation. First, a mixed-methods design should be employed by combining quantitative surveys with qualitative approaches such as interviews, or classroom observations. This would provide a deeper understanding of how learners actually apply strategies during reading tasks and when anxiety manifests to offer richer contextual data that quantitative measures alone cannot analyse.

Second, longitudinal studies tracking learners over extended periods should be implemented to reveal whether the relationship between reading strategies and anxiety changes over time. Such a study could examine whether anxiety reduction leads to more effective strategy use or, whether sustained strategy instruction eventually impacts anxiety levels, clarifying the temporal and directionality dynamics of these constructs.

Third, research examining different text types and reading contexts should allow these findings to be more extensive. Academic and narrative texts were not differentiated, yet learners may experience different anxiety levels and utilise distinct strategies based on reading purpose and text genre. Finally, cross-cultural comparative studies examining reading strategies and anxiety across different ESL/EFL contexts would enhance the generalizability of findings, as cultural backgrounds and educational systems may affect strategy preferences and anxiety manifestations.

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