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(IJEPC)**<https://gaexcellence.com/ijepe>**READING ANXIETY AND STRATEGY USE AMONG
MANDARIN LEARNERS AT UNIVERSITI SAINS ISLAM
MALAYSIA (USIM): A CORRELATIONAL STUDY**

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Abstract:

Foreign language reading anxiety represents an important affective dimension of language learning; however, its relationship with reading strategy use remains comparatively underexplored among learners of Mandarin as a foreign language, particularly in Malaysia. This quantitative correlational study examined foreign language reading anxiety and reading strategy use among 139 non-native Mandarin learners at Universiti Sains Islam Malaysia (USIM). Data were collected using the Foreign Language Reading Anxiety Scale (FLRAS) developed by Saito, Horwitz, and Garza (1999) and the Survey of Reading Strategies (SORS) developed by Mokhtari and Sheorey (2002). Descriptive analysis indicated a moderate level of reading anxiety ($M =$

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3.42, SD = 0.56) and moderate overall reading strategy use ($M = 3.46$, $SD = 0.47$). Among the three strategy dimensions, Problem-Solving Strategies were used most frequently ($M = 3.71$), followed by Global Strategies ($M = 3.38$) and Support Strategies ($M = 3.29$). Pearson's correlation analysis revealed a statistically significant negative relationship between foreign language reading anxiety and overall reading strategy use ($r = -.38$, $p < .01$), indicating a medium effect size. At the subscale level, reading anxiety demonstrated the strongest negative association with Global Strategies ($r = -.42$), followed by Support Strategies ($r = -.31$) and Problem-Solving Strategies ($r = -.29$). Overall, the findings demonstrate that higher reading anxiety is associated with less frequent strategy use, particularly strategies involving planning and comprehension monitoring. The study extends understanding of the interplay between affective and strategic dimensions of Mandarin reading and highlights the pedagogical value of explicit reading strategy instruction within the Malaysian university context.

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Keyword:

Foreign Language; Reading Anxiety; Mandarin; Reading Strategies; Malaysian Higher Education



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Introduction

Generally, learning a foreign language is fundamentally challenging because it requires substantial investments of time, effort, and resources. The complexity of foreign language learning arises from numerous interacting factors, making purely linguistic explanations insufficient for understanding why some learners struggle while others thrive (Schumann, 1987). A more comprehensive perspective must therefore incorporate the affective and social variables that shape the language acquisition process. Among these, anxiety can be considered as a critical factor that helps explain the difficulties learners encounter in foreign language learning process (Brown, 2000). Horwitz et al. (1986) provide a more in-depth explanation of foreign language anxiety, defining it as an issue specific to language learning contexts and characterized by feelings of stress, unease, and apprehension. Whereas earlier studies often focused on the impact of anxiety on oral interaction, subsequent investigations have broadened this focus to include skill-specific anxieties. For example, Uztosun and Kök (2024) found that speaking-related English engagement outside the classroom significantly predicted lower speaking anxiety and communication apprehension among Turkish university students, demonstrating that speaking anxiety operates as a distinct construct responsive to specific types of language exposure. In other words, anxiety levels are consistently associated with performance across different language skills, with higher anxiety generally corresponding to lower engagement and achievement (Chen, 2025; Dauba, 2024; Luo & Xiong, 2025).

Reading is widely acknowledged as a foundational competency among the four language skills, serving as a principal conduit for both knowledge acquisition and cognitive development (Bunparit & Riabroi, 2025; Ennis, 2006; Santi et al., 2021; Taye & Teshome, 2025). Unlike speaking and listening, which involve collaborative meaning-making between participants, reading is essentially a solitary endeavor in which readers construct understanding independently (Shariati & Bordbar, 2009). Although learners bring extensive reading experience from their “mother tongue” to the new foreign language scenario, which might theoretically facilitate second language reading, previous research has consistently demonstrated that anxiety is a powerful impediment to successful foreign language reading (Sellers, 2000; Wu, 2011). For those learning Mandarin as a foreign language, these challenges are particularly acute. Unlike alphabetic systems such as Malay or English, where readers can decode words through sound-symbol relationships, Mandarin employs a logographic script requiring learners to master thousands of characters, each combining form, meaning, and pronunciation. Because Mandarin words have no spaces between them and include unfamiliar cultural material, learners often experience increased anxiety (Kuester-Gruber, et al., 2023; Kuo et al., 2025; Zhang et al., 2023).

Within Malaysian public universities, enrolment in Mandarin language courses has increased steadily, as most learners recognize the professional and cultural advantages of Mandarin proficiency (Hoe et al., 2015; Leow et al., 2024). Nevertheless, a substantial body of prior research and commentary has consistently underscored that learners of Mandarin encounter persistent difficulties in developing Mandarin reading competence; thus, the issue remains unresolved (Kai et al., 2024; Li, 2025; Zhang et al., 2023). Accordingly, in this study seeks to fill up this gap by examining levels of reading anxiety and reading strategy use among learners of Mandarin at USIM and by analyzing the inter-relationship between these two factors. The outcomes are foreseen to furnish much-needed empirical evidence or data to the expanding literature on affective factors in Mandarin language learning.

Literature Review

Foreign Language Anxiety

Foreign language anxiety emerged as an important construct through the seminal work of Horwitz et al. (1986), who distinguished anxiety associated with language learning from general forms of anxiety experienced in other situations. From this perspective, foreign language anxiety represents a context-specific affective response arising from learners' perceptions, beliefs, emotions, and behaviours when engaging in learning activities (Horwitz et al., 1986). This distinction is important because difficulties experienced by language learners may reflect not only limitations in linguistic knowledge or ability, but also emotional responses associated with the language acquisition process.

The framework proposed by Horwitz et al. (1986) encompasses three closely related dimensions: communication apprehension or stage fright, test anxiety, and fear or failure of negative evaluation. Communication apprehension or so called as stage fright concerns discomfort or nervousness when communicating with others, whereas test anxiety relates to apprehension about performance and the possibility of failure. Fear or failure of negative evaluation describes learners' focus about how their language presentation may be critiqued by others. Collectively, these dimensions illustrate how anxiety may influence learners across different aspects of the language-learning experience. Importantly, anxiety may not simply

arise as a consequence of learning difficulties; it may also contribute to such difficulties by diverting attention and cognitive resources away from language processing and learning tasks (Horwitz, 2001). In the context of this study, this theoretical perspective offers a basis for examining foreign language reading anxiety among Mandarin learners, particularly how anxiety may constrain learners' engagement with, processing of, and comprehension of Mandarin texts.

Foreign Language Reading Anxiety

Based on general foreign language anxiety research, Saito et al. (1999) launched the understanding of foreign language reading anxiety (FLRA), defining it as feelings of worry and apprehension specifically associated with reading in a target language. They demonstrated that while reading anxiety is closely associated with general foreign language anxiety, it constitutes a distinct construct with unique characteristics. Their study revealed that learners' reading anxiety levels varied depending on the specific target language and their perceptions of the difficulty of its writing system.

Saito et al. (1999) identified a few primary sources of reading anxiety. First, unfamiliar scripts and writing systems; second, unfamiliar cultural content. For learners of Mandarin, both sources are particularly relevant. The Chinese writing system is logographic, requiring learners to memorize thousands of characters by their form, meaning, and pronunciation simultaneously, a task fundamentally different from learning alphabetic scripts. Previous research have shown that Mandarin learners experience heightened reading anxiety due to character recognition difficulties, the absence of word boundaries in Chinese text, and culturally embedded content that feels foreign (Zhao et al., 2013; Zhou, 2017). This anxiety can lead to avoidance behaviours, reduced reading practice, and ultimately, poorer reading outcomes.

Reading Strategies

Reading strategies can be defined as a deliberate, goal-directed mental operations that readers employ to comprehend, monitor, and enhance their understanding of written texts (Mokhtari & Sheorey, 2002). Oxford (1990) separated language learning strategies into direct and indirect categories, while Mokhtari and Sheorey (2002) developed the Survey of Reading Strategies (SORS), which categorizes reading strategies into three types: Global Strategies (intentional, planned techniques such as previewing text and setting reading goals), Problem-Solving Strategies (actions readers take when text becomes difficult, such as rereading and guessing meaning), and Support Strategies (functional mechanisms including note-taking and using dictionaries).

According to previous studies, it consistently demonstrates that effective strategy use positively influences reading comprehension. Strategic readers actively monitor their understanding, adjust their approach based on text difficulty, and employ appropriate techniques to overcome comprehension obstacles (Phakiti, 2003). For learners of Mandarin, strategy use takes on additional significance due to the unique challenges of the writing system. Studies have found that successful Mandarin readers employ a range of strategies, including character-level strategies (recognizing radical components) and text-level strategies (using context to guess meaning) (Zhou, 2017). However, research also indicates that many Mandarin learners rely

heavily on support strategies like translation and dictionary use, potentially at the expense of more effective global and problem-solving strategies (Zhao et al., 2013).

The Relationship between Reading Strategies and Reading Anxiety

The relationship between reading strategy use and reading anxiety has received growing attention in language-learning research. Existing evidence generally suggests an inverse association between these two constructs, whereby learners who engage more actively in strategic reading tend to report lower levels of anxiety. Reading strategies may provide learners with greater control over the comprehension process by enabling them to plan, monitor, and adjust their reading behaviour when difficulties arise. Conversely, heightened anxiety may interfere with the cognitive resources required to select and apply appropriate strategies effectively.

Evidence from different foreign-language contexts supports this relationship. Among Taiwanese learners of English as second language or foreign language, higher reading anxiety was associated with less frequent strategy use, particularly in relation to metacognitive strategies (Lien, 2011). A similar pattern was identified among Chinese university students learning English, where anxiety was negatively related to reading strategy use, especially the application of global and problem-solving strategies (Lu & Liu, 2015). One possible explanation is that anxiety places additional demands on learners' cognitive resources, thereby limiting their capacity to monitor comprehension and strategically respond to challenging textual information. The relationship may be particularly important in Mandarin reading because learners must manage both linguistic comprehension and the distinctive processing demands associated with the Chinese writing system. Zhao et al. (2013), in their investigation of American learners of Mandarin, reported that reading anxiety was significantly associated with reading comprehension performance. Their findings also indicated differences in strategy preferences according to anxiety levels, with more anxious learners showing greater reliance on support strategies, such as translation, while making less use of global strategies. This pattern suggests that anxiety may be associated not only with the overall frequency of strategy use but also with the types of strategies learners select when encountering reading difficulties.

Despite evidence from other foreign-language learning settings, the interplay between reading anxiety and reading strategy use remains comparatively underexplored among Mandarin learners in the Malaysian context. Existing findings nevertheless provide a theoretical basis for expecting these constructs to be interconnected (Lien, 2011; Lu & Liu, 2015). Learners equipped with a broader range of strategies may perceive greater control when dealing with unfamiliar characters, vocabulary, and complex texts, whereas limited strategic resources may intensify apprehension when comprehension difficulties arise. Against this background, this study examines the relationship between reading strategy use and foreign language reading anxiety among Mandarin learners at USIM, contributing context-specific evidence from Malaysian higher education.

Research Questions

This study investigates foreign language reading anxiety and reading strategy use among Mandarin learners at Universiti Sains Islam Malaysia (USIM), focusing particularly on the relationship between these two constructs. Data were analysed using descriptive and inferential statistics to answer the following research questions:

- RQ 1. What is the level of foreign language reading anxiety among Mandarin learners of USIM?
- RQ 2. What is the reading strategy often use among Mandarin learners at USIM?
- RQ 3. Is there a significant relationship between foreign language reading anxiety and reading strategy use among learners of Mandarin at USIM?

Methodology

Participants

A total of 176 learners enrolled in Mandarin 2 and Mandarin 3 courses at the Faculty of Major Language Studies (FPBU), Universiti Sains Islam Malaysia (USIM), were approached for participation in the study. All participants were non-native speakers of Mandarin who had completed Mandarin 1 before progressing to the subsequent course levels. Demographic information, including age, gender, ethnicity, faculty, and programme of study, was collected to describe the characteristics of the participants. The participants were recruited using cluster sampling, whereby existing Mandarin classes were treated as naturally occurring groups for participant selection (Cohen et al., 2007). This sampling approach was appropriate because the selected learners had direct classroom exposure to Mandarin and were actively engaged in Mandarin language learning at the time of data collection (Tan & Lim, 2024; Wong & Ahmad, 2023). Their prior completion of Mandarin 1 also ensured that the participants had acquired foundational exposure to the language before undertaking Mandarin 2 or Mandarin 3. Consequently, the selected groups provided an appropriate population for examining foreign language reading anxiety and reading strategy use within the context of Mandarin learning at USIM.

Instruments

In the present study, a quantitative cross-sectional research design was employed, with data collected at a single point in time through self-report instruments. Foreign language reading anxiety was measured using the Foreign Language Reading Anxiety Scale (FLRAS) developed by Saito et al. (1999), while reading strategy use was measured using an adapted version of the Survey of Reading Strategies (SORS) developed by Mokhtari and Sheorey (2002). Both instruments were adapted to suit the Mandarin learning context. The FLRAS employed a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree), whereas the SORS used a five-point frequency scale ranging from 1 (never do this) to 5 (always do this) (Mokhtari & Sheorey, 2002; Saito et al., 1999). Several procedures were undertaken to establish the suitability of the adapted instruments before the main data collection. Content validity was evaluated by five experienced academicians with more than 20 years of experience in teaching Mandarin. In addition, a statistical expert reviewed the instruments to assess their suitability from a measurement perspective. The FLRAS also underwent a back-translation process from English into Malay (Bahasa Malaysia) by a qualified translator to ensure that the adapted items conveyed the intended meaning.

Following the expert review and translation process, the FLRAS was pre-tested with 10 randomly selected respondents. The pre-test focused on identifying potential problems related to item clarity, ambiguous terminology, response consistency, and questionnaire presentation. Necessary revisions were subsequently incorporated to improve the instrument before further

testing (Zikmund & Babin, 2010). A pilot study was then conducted using the revised instrument, yielding 106 valid responses, which exceeded the recommended minimum sample of 100 for subsequent analysis (Awang, 2015; Bahkia et al., 2019). Data obtained from the pilot study were analyzed using exploratory factor analysis (EFA) to examine the underlying factor structure of the adapted measures prior to the administration of the main survey.

Procedure

Following the pilot study and evaluation of the measurement instruments, the main data collection was carried out at Universiti Sains Islam Malaysia (USIM). Formal approval was obtained from the relevant university authorities before the questionnaires were administered. The researcher provided information concerning the objectives and procedures of the study, together with a copy of the questionnaire for review. Mandarin instructors were subsequently briefed on the study and assisted in coordinating questionnaire administration to the targeted learners. Data were gathered through online and face-to-face administration to facilitate participation across the selected classes. For online data collection, Mandarin instructors circulated a link to the questionnaire through the relevant WhatsApp groups. Learners were provided with a two-week period to submit their responses, with clarification available from the instructors when required. For classes participating through face-to-face administration, printed questionnaires were distributed during scheduled class sessions. Prior to completing the questionnaire, learners were briefed on the study's purpose and objectives and were informed that participation was voluntary. They were also assured that their responses would be treated confidentially and were encouraged to provide accurate responses based on their learning experiences. Approximately 30 minutes were allocated for questionnaire completion. Data collection was conducted during Week 8 of the semester, when the learners had already gained ongoing exposure to course activities and Mandarin language assignments. This timing enabled participants to respond based on their current learning experiences. The complete data collection process, encompassing both modes of questionnaire administration, was concluded within three weeks.

Findings

Respondents' Demographic

A total of 176 questionnaires were distributed to Mandarin learners, of which 139 valid responses were retained for analysis, representing a response rate of 78% (Fincham, 2008). In terms of gender distribution, female respondents constituted the majority of the sample (69%), while male respondents accounted for the remaining 31%. With respect to age, 56% of the respondents were between 20 and 24 years old, whereas 44% were between 16 and 19 years old. The ethnic composition of the sample was predominantly Malay (97.84%), with 2.16% of respondents representing other ethnic backgrounds. Overall, the demographic characteristics provide an overview of the composition of the sample included in the subsequent analyses. A detailed summary of the respondents' demographic profile is presented in Table 1.

Table 1: Demographic Profile of Respondents

Demographic variables	Category	Frequency	Percentage (%)
Gender	Female	96	69
	Male	43	31
Age	16 – 19 years old	60	44
	20 – 24 years old	79	56
Race	Malay	136	97.84
	Others	3	2.16
Education background:	Language and Linguistic	33	23.7
	Economy	25	17.9
	Information Technology	16	11.5
	Social Science	8	5.7
	Management	28	20.1
	Syariah and Law	11	7.9
	Biology or other Sciences	10	7.4
	Leadership	8	5.7
	Others:	0	0

With respect to academic background, the largest proportion of respondents were from Language and Linguistics (23.7%), followed by Management (20.1%), Economics (17.9%), Information Technology (11.5%), Syariah and Law (7.9%), and Leadership and Social Sciences (5.7%). This distribution indicates that the respondents represented a range of academic disciplines at USIM.

RQ1. What is the Level of Foreign Language Reading Anxiety among Mandarin Learners of USIM?

Foreign language reading anxiety was evaluated by using the Foreign Language Reading Anxiety Scale (FLRAS) developed by Saito et al. (1999). The instrument comprises 20 items designed to capture learners' anxiety associated with reading in a foreign language. Responses were recorded on a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree), with greater overall scores reflecting higher levels of foreign language reading anxiety. To ensure consistency in the direction of scoring, Items 12, 13, 14, and 16 were reverse-coded before the statistical analyses were performed, in accordance with the scoring procedure recommended by the instrument developers.

Table 2: Descriptive Statistics for the Overall FLRAS Scores

Variable	N	Min	Max	Mean	Std. Deviation	Level
Foreign Language Reading Anxiety	139	1.85	4.60	3.42	0.56	Moderate

The analysis yielded an overall mean score of 3.42 (SD = 0.56) for foreign language reading anxiety. The level of anxiety was interpreted using the benchmarks proposed by Oxford (1990), whereby mean scores ranging from 1.00 to 2.33 represent a low level, 2.34 to 3.67 a moderate level, and 3.68 to 5.00 a high level. Based on these interpretive ranges, the respondents

demonstrated a moderate level of foreign language reading anxiety when engaging with Mandarin texts. This finding indicates that anxiety was present in the respondents' Mandarin reading experiences, although it did not reach the high-anxiety range. The moderate mean score suggests that learners may experience a certain degree of apprehension or tension when processing Mandarin texts, potentially reflecting the linguistic and orthographic challenges associated with reading in a foreign language. Nevertheless, the result also indicates that such anxiety was not uniformly severe across the sample. The observed pattern is comparable with findings reported in previous foreign-language reading research. Zhao et al. (2013) similarly identified moderate levels of reading anxiety among learners of Mandarin as a foreign language in the United States. Likewise, Lien (2011) reported moderate reading anxiety among EFL students in Taiwan. In other words, these outcomes suggest that moderate reading anxiety could be happened across different foreign-language learning environments, although the specific sources and experiences of anxiety may differ according to the target language and learning context.

RQ2. What is the Reading Strategy Often Use among Mandarin Learners at USIM?

Reading strategy use was assessed using the Survey of Reading Strategies (SORS) developed by Mokhtari and Sheorey (2002). The SORS comprises 30 items, with responses recorded on a five-point Likert scale ranging from 1 (I never do this) to 5 (I always do this). For the present study, the instrument was adapted to align with the Mandarin reading context. References to English texts were replaced with Mandarin texts, while relevant terminology was modified to reflect characteristics of the Chinese writing and the processes involved in reading a logographic script. The adapted items were subsequently reviewed by content experts to ensure their contextual relevance and appropriateness for Mandarin learners. The SORS assesses reading strategy use across three dimensions: Global Strategies (13 items), Problem-Solving Strategies (8 items), and Support Strategies (9 items). Global Strategies reflect deliberate planning and management of the reading process, Problem-Solving Strategies involve techniques employed when comprehension difficulties arise, and Support Strategies refer to practical mechanisms used to facilitate textual understanding (Mokhtari & Sheorey, 2002). Higher mean scores represent more frequent engagement in reading strategies. For the interpretation of strategy-use frequency, the present study applied the benchmarks proposed by Oxford (1990). Based on these criteria, mean scores allocate from 1.00 to 2.33 indicate low strategy use, scores from 2.34 to 3.67 mean moderate strategy use, and scores from 3.68 to 5.00 can be considered as high strategy use. These interpretive ranges were applied to both the overall SORS score and the respective strategy dimensions.

Table 3: Interpretation Benchmarks for Reading Strategy Use

Mean Range	Score	Strategy Use Level	Interpretation
3.5 – 5.0		High	Learners frequently use these strategies
2.5 – 3.4		Moderate	Learners sometimes use these strategies
1.0 – 2.4		Low	Learners rarely or never use these strategies

Table 4: Overall Level of Reading Strategy Use (n = 139)

Strategy Category	N	Number of Items	Mean	Std. Deviation	Level
Global Strategies	139	13	3.38	0.52	Moderate
Problem-Solving Strategies	139	8	3.71	0.48	High
Support Strategies	139	9	3.29	0.61	Moderate
Overall SORS Mean	139	30	3.46	0.47	Moderate

The analysis revealed an overall mean score of 3.46 (SD = 0.47) for reading strategy use, indicating a moderate level of strategy uses among Mandarin learners at USIM. Based on the adopted interpretive criteria, this finding suggests that learners generally engaged in reading strategies when processing Mandarin texts, although the extent of strategy use varied across the three dimensions. Between the three main strategy categories, Problem-Solving Strategies recorded the highest mean score (M = 3.71, SD = 0.48), placing this dimension within the high-use range. This finding indicates that learners relied more frequently on strategies that enabled them to respond directly to comprehension difficulties encountered while reading Mandarin texts. Such strategies include inferring meaning from contextual information, rereading difficult sections, and adjusting reading speed according to the complexity of the text. In comparison, Global Strategies (M = 3.38, SD = 0.52) and Support Strategies (M = 3.29, SD = 0.61) were both classified within the moderate-use range. The results therefore indicate that learners engaged less frequently in strategies related to overall reading planning and the use of supporting resources than in strategies for resolving immediate comprehension difficulties. Overall, the findings demonstrate that although Mandarin learners employed a range of reading strategies, Problem-Solving Strategies emerged as the most important and most frequently used strategy category.

RQ3. Is There a Significant Relationship Between Foreign Language Reading Anxiety and Reading Strategy Use among Learners of Mandarin at USIM?

To address the third research question, Pearson's product-moment correlation analysis was conducted to examine the strength and direction of the relationship between foreign language reading anxiety and reading strategy use among Mandarin learners at USIM. Before performing the correlation analysis, the relevant statistical assumptions, including normality, linearity, and homoscedasticity, were examined. The results of the preliminary diagnostic tests indicated that these assumptions were adequately met, supporting the use of Pearson's correlation for the subsequent analysis.

Table 5: Overall Level of Reading Strategy Use (n = 139)

Variable	Mean	SD	FLRAS	SORS
FLRAS (Overall)	3.42	0.56	—	
SORS (Overall)	3.46	0.47	-.38	—

Note: **p < .01 (2-tailed).

A statistically significant negative correlation was found between foreign language reading anxiety and overall reading strategy use ($r = -.38$, $p < .01$, $n = 139$). According to Cohen's (1988) guidelines (.10 = small, .30 = medium, .50 = large), this correlation represents a medium

effect size. The negative coefficient indicates that higher levels of reading anxiety were associated with less frequent use of reading strategies among Mandarin learners. Correspondingly, learners reporting lower levels of reading anxiety tended to report greater engagement in reading strategies. This inverse association is consistent with theoretical explanations of how anxiety may interact with cognitive processing during foreign language reading. Lien (2011) suggested that anxiety may constrain the cognitive resources available for strategic processing, as learners' attention can become occupied by worry and task-irrelevant thoughts. This interpretation is also consistent with MacIntyre's (1995) model of anxiety and cognition, which proposes that anxiety can interfere with language processing by redirecting attentional resources away from task-related cognitive activities. In this study, such interference may be associated with learners' reduced engagement in the monitoring and strategic processes involved in comprehending Mandarin texts.

To further examine whether this relationship differed across specific dimensions of reading strategy use, separate correlation analyses were conducted between foreign language reading anxiety and the three SORS dimensions: Global Strategies, Problem-Solving Strategies, and Support Strategies. The results of these analyses are presented in Table 6.

Table 6: Correlation between FLRA and SORS Subscales (n = 139)

Variable	Mean	SD	FLRAS	GS	PS	SS
FLRAS	3.42	0.56	—			
Global Strategies (GS)	3.38	0.52	-.42	—		
Problem-Solving Strategies (PS)	3.71	0.48	-.29	.45	—	
Support Strategies (SS)	3.29	0.61	-.31	.38	.41	—

Note: All correlations are significant at $p < .01$ (2-tailed).

As presented in Table 6, foreign language reading anxiety was significantly and negatively correlated with all three dimensions of reading strategy use. Among the three dimensions, Global Strategies demonstrated the strongest negative association with reading anxiety ($r = -.42$, $p < .01$), indicating a moderate relationship. Support Strategies were also negatively correlated with reading anxiety ($r = -.31$, $p < .01$), while Problem-Solving Strategies showed a slightly weaker negative relationship ($r = -.29$, $p < .01$). Collectively, these results indicate that higher levels of reading anxiety were associated with less frequent use of each category of reading strategies, although the strength of the association varied across the three dimensions. The comparatively stronger relationship observed for Global Strategies suggests that reading anxiety may be particularly associated with learners' engagement in deliberate and metacognitive approaches to reading. Global Strategies involve purposeful behaviours such as establishing a reading purpose, previewing textual information, activating prior knowledge, and monitoring comprehension throughout the reading process. The negative association may therefore indicate that learners experiencing greater anxiety are less likely to engage extensively in these planning and monitoring behaviours. This interpretation is consistent with theoretical accounts suggesting that anxiety can interfere with the cognitive and attentional resources required for effective information processing and metacognitive regulation (Tobias, 1986; MacIntyre, 1995). A significant negative relationship was also identified between reading anxiety and Problem-Solving Strategies ($r = -.29$, $p < .01$). These strategies are generally activated when readers encounter comprehension difficulties and include behaviours such as inferring meaning from context, rereading difficult sections, and adjusting reading speed. Although the association was weaker than that observed for Global Strategies, the

finding indicates that greater reading anxiety was still associated with less frequent engagement in strategies intended to address immediate comprehension problems. Similarly, the negative correlation between reading anxiety and Support Strategies ($r = -.31, p < .01$) indicates that learners with higher anxiety tended to report less frequent use of supplementary techniques, including notetaking, underlining, dictionary consultation, and translation. This finding is noteworthy because several support strategies, particularly dictionary use and translation, were among the more frequently employed individual strategies in the present study. Nevertheless, their use was negatively associated with learners' reported levels of reading anxiety.

Overall, the subscale findings demonstrate that the inverse relationship between reading anxiety and strategy use was not confined to a single type of reading strategy. Rather, significant negative associations were evident across Global, Problem-Solving, and Support Strategies, with the strongest relationship observed for Global Strategies.

Conclusion

The findings showed that Mandarin learners at USIM experienced a moderate level of foreign language reading anxiety ($M = 3.42, SD = 0.56$). Similarly, the overall use of reading strategies was classified at a moderate level ($M = 3.46, SD = 0.47$). Across the three strategy dimensions, Problem-Solving Strategies were the most frequently employed ($M = 3.71$) and were classified within the high-use range. In contrast, Global Strategies ($M = 3.38$) and Support Strategies ($M = 3.29$) were both used at moderate levels. At the individual strategy level, rereading and inferring meaning from context were among the more frequently employed strategies, suggesting that learners tended to rely on cognitive approaches to address difficulties encountered while reading Mandarin texts. More importantly, the correlation analysis identified a significant negative relationship between foreign language reading anxiety and overall reading strategy use ($r = -.38, p < .01$), representing a medium effect size. Further analysis across the three strategy dimensions revealed that reading anxiety had the strongest negative association with Global Strategies ($r = -.42$), followed by Support Strategies ($r = -.31$) and Problem-Solving Strategies ($r = -.29$). These findings demonstrate that higher levels of reading anxiety were generally associated with less frequent engagement in reading strategies, with the relationship being particularly evident for Global Strategies. Given their emphasis on planning, monitoring, and regulating comprehension, this pattern is considered quite consistent with theoretical perspectives suggesting that anxiety may compete for the cognitive and attentional resources required for strategic language processing.

Implications of the Study

This study contributes to the literature on skill-specific anxiety in foreign language learning by providing empirical evidence from a comparatively under-researched context involving non-native learners of Mandarin in Malaysia. The findings proven that foreign language reading anxiety is relevant to Mandarin learning and that its negative association with reading strategy use is broadly consistent with patterns reported in EFL research. In particular, the stronger negative association between reading anxiety and Global Strategies provides further support for theoretical perspectives linking anxiety with the cognitive and metacognitive processes involved in language learning. The present findings therefore extend this understanding to the context of Mandarin reading, where learners must navigate the additional demands associated with a logographic writing system. The findings also have several implications for Mandarin language instruction. First, given the difficulties associated with Chinese character recognition,

instructors may adopt more systematic approaches to character instruction by helping learners identify meaningful components, including radicals, and providing opportunities to encounter and practise characters within meaningful contexts. Such instruction may facilitate more efficient character recognition and strengthen learners' confidence when approaching Mandarin texts. Second, learners' frequent reliance on dictionaries and translation highlights the importance of developing a broader repertoire of strategies for independent comprehension. Rather than discouraging the use of these support mechanisms, instructors could progressively complement them with strategies such as inferring meaning from contextual cues, identifying key information, and rereading selectively. Modelling these processes explicitly may enable learners to make more purposeful decisions when comprehension difficulties arise. Third, the moderate use of Global Strategies indicates scope for more explicit instruction in metacognitive reading practices. Instructors could incorporate pre-reading activities, such as previewing textual information and activating relevant prior knowledge; during-reading practices, such as monitoring comprehension and identifying breakdowns in understanding; and post-reading activities, including summarising and evaluating comprehension. Developing these practices may encourage learners to approach Mandarin reading in a more planned and self-regulated manner. Finally, instructional practices should consider both the cognitive and affective dimensions of reading. A supportive learning environment in which difficulties with unfamiliar characters and texts can be addressed constructively may encourage learners to experiment with different strategies without excessive concern about making mistakes. Taken together, these pedagogical approaches may strengthen learners' strategic engagement with Mandarin texts while creating conditions that are more conducive to managing foreign language reading anxiety.

Recommendations for Future Research

Based on the findings the present study, few avenues for future research ideals are recommended. First, subsequent studies could involve participants from multiple higher education institutions across Malaysia to improve the representativeness of the sample and facilitate comparisons among learners from different educational contexts. A broader sample may also provide a deeper understanding of reading anxiety and strategy use among learners of Mandarin as a foreign language. Second, longitudinal research could be extended to investigate changes in reading anxiety and strategy use over time. Following learners across different stages of Mandarin proficiency would provide valuable insights into how these two constructs develop and how their relationship may change as learners progress from introductory to more advanced levels. Third, future studies could adopt mixed-methods designs by integrating quantitative measures with qualitative approaches, such as interviews and think-aloud protocols. Such approaches could provide a richer understanding of the sources of learners' reading anxiety, the reasoning underlying their strategy choices, and how particular strategies are employed during actual Mandarin reading tasks. Fourth, intervention-based research could examine whether explicit reading strategy instruction influences learners' strategy use and reading anxiety. Experimental or quasi-experimental designs involving comparison groups would be particularly valuable for generating stronger evidence regarding the potential effects of specific instructional approaches. Future research could also investigate the roles of factors such as Mandarin proficiency, reading self-efficacy, and learning motivation in the relationship between reading anxiety and strategy use. Examining these variables as potential mediators or moderators may provide a more comprehensive account of the mechanisms underlying learners' reading experiences. Finally, greater attention should be directed towards the distinctive demands of reading logographic scripts, particularly Chinese

characters. Future studies could examine character-recognition strategies, learners' knowledge and use of radicals, and different approaches to character instruction in relation to reading anxiety and comprehension. Research in these areas would further clarify how the characteristics of the Chinese writing system shape both the cognitive and affective dimensions of Mandarin reading.

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