

Expanding Understanding of Reading Anxiety: A New Research Agenda to Zhou’s (2017) “Foreign Language Reading Anxiety in a Chinese as a Foreign Language Context”

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Abstract

Foreign language reading anxiety (FLRA) remains a significant challenge for learners of Chinese as a Foreign Language (CFL), affecting their reading comprehension and overall language proficiency. Zhou (2017) provided a foundational analysis of FLRA, identifying key contributors such as comprehension difficulties, pronunciation-related stress, and cognitive overload associated with logographic scripts. However, Zhou’s study leaves several critical aspects unexplored, including the dynamic nature of FLRA over time, variations in FLRA between heritage and non-heritage learners, and the potential of technology-assisted interventions in mitigating reading anxiety. We expand on Zhou’s 2017 findings by integrating recent empirical research on metacognitive strategies, AI-driven learning tools, and differentiated instructional approaches. Additionally, this paper highlights future research directions, including the necessity of longitudinal studies to track FLRA progression, the effectiveness of blended learning approaches, and the role of learner variability in shaping reading anxiety experiences. By addressing these gaps, this response offers a more comprehensive framework for understanding and alleviating FLRA, with implications for CFL curriculum design and instructional practice.

Keywords: Foreign Language Reading Anxiety (FLRA), Chinese as a foreign language (CFL) learners, Chinese L2 learners, foreign language reading, metacognitive reading strategies, AI-driven learning, pedagogical reading

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interventions, longitudinal reading anxiety research, heritage and non-heritage readers

Introduction

Foreign language reading anxiety (FLRA) has been widely recognized as a significant factor affecting second language acquisition, particularly in languages with complex writing systems such as Mandarin Chinese. Zhou (2017) conducted an empirical investigation into FLRA among learners of Chinese as a Foreign Language (CFL), focusing on their anxiety levels across different proficiency levels and identifying key sources of anxiety. The study found that Chinese L2 learners generally experience a moderate level of reading anxiety, with the highest anxiety levels observed among 100- (beginning) and 400-level (advanced) students, whereas 200- and 300-level (intermediate) students reported slightly lower anxiety levels (Zhou, 2017).

Zhou (2017) further examined the role of background factors in predicting FLRA. A regression model incorporating years of learning Chinese, heritage learner status, number of foreign languages learned, and time spent in China explained 15% of the variance in FLRA levels. This suggests that while these variables influence anxiety, additional factors likely contribute to the overall experience of FLRA (Lee, 2005; Zhou, 2017).

The study also identified four major sources of FLRA: (a) worries about comprehension, which involves learners fearing misunderstanding a passage despite recognizing words; (b) anxiety related to unfamiliar topics, where lack of background knowledge increases cognitive load; (c) stress over unknown pronunciation, particularly when encountering new characters or when reading aloud; and (d) discomfort with reading aloud, often stemming from self-consciousness and fear of making mistakes (Zhou, 2017; Zhao et al., 2013).

While Zhou's (2017) findings provide a strong foundation for understanding FLRA in CFL learners, additional dimensions warrant further investigation. In particular, FLRA is a dynamic process that evolves over time, yet Zhou's study did not explore how anxiety levels fluctuate across different learning stages. Longitudinal research is needed to examine how CFL learners' anxiety develops and whether instructional interventions can mitigate its impact over time.

Additionally, the extent to which FLRA differs between heritage and non-heritage learners, the role of metacognitive strategies in alleviating anxiety, and the potential of technology-assisted interventions to reduce FLRA require deeper exploration. Studies suggest that heritage learners, while often possessing stronger oral proficiency, still experience reading anxiety due to gaps in print vocabulary knowledge (Lee, 2005).

Furthermore, research indicates that metacognitive strategy use, such as problem-solving and self-monitoring, can help CFL learners manage FLRA more effectively (Osuji, 2020; Ghaith, 2020; Teng, 2025). Beyond cognitive and self-regulatory strategies, digital learning tools can further offer adaptive support by providing scaffolding and real-time feedback (Khalil et al., 2024). For example, AI-driven reading tools and gamified learning platforms have been increasingly recognized as viable interventions for reducing FLRA and improving reading fluency (Huang & Zhang, 2024; Zheng, 2024).

Expanding the Discussion on FLRA

Foreign Language Anxiety as a Dynamic Process

Zhou (2017) theoretically identified several factors contributing to Foreign Language Reading Anxiety (FLRA), including worry about comprehension, unfamiliar topics, unknown pronunciation, and discomfort with reading aloud. These factors were highlighted as primary sources of reading anxiety; however, the study did not examine the temporal dimension of FLRA or how it evolves over time. Theoretically, Foreign Language Anxiety (FLA) is increasingly understood as a dynamic and context-dependent construct rather than a static trait. Pan and Zhang (2021) provide empirical evidence supporting this view, demonstrating the fluctuating nature of learners' emotional responses to language learning, particularly the interaction between reading and enjoyment. Their findings emphasize that variables such as motivation, self-efficacy, and prior learning experiences significantly influence these emotional shifts. This dynamic framework is particularly relevant to FLRA, as reading anxiety is likely to change over time in response to factors such as learners' growing proficiency, increased exposure to authentic texts, and the level of instructional scaffolding provided. One key consideration in understanding the dynamics of FLRA is the interaction between cognitive load and reading proficiency. As learners advance in their language studies, they may experience shifts in anxiety triggers—where beginner learners struggle with basic comprehension and character recognition, advanced learners may face performance-related anxiety, fear of misinterpretation, or concerns about academic expectations (Jeon & Yamashita, 2014). Additionally, factors such as prior reading experience, linguistic background, and access to reading materials can influence how FLRA develops over time (Zhao et al., 2013).

Longitudinal studies, such as Pan and Zhang's (2021) research, suggest that sustained instructional support and positive learning experiences can reduce anxiety and enhance learner engagement. These studies emphasize that a learner's ability to regulate FLRA is influenced by long-term exposure to reading activities, instructor feedback, and supportive learning environments. Therefore, future research should examine how CFL learners' reading anxiety evolves across different proficiency levels and instructional environments, particularly in hybrid or technology-enhanced learning models where reading engagement may differ from traditional classroom settings. Furthermore, studies on foreign language speaking anxiety have shown that students' perceptions of progress and achievement directly affect their anxiety levels (Huang & Zhang, 2024). This suggests that FLRA may also be influenced by learners' sense of accomplishment and perceived reading proficiency, which highlights the importance of tracking reading progress and setting incremental goals to build confidence over time. By investigating how FLRA evolves across different contexts and learning trajectories, researchers can better understand how to create sustained interventions that address learners' changing needs over time.

Learner Variability in FLRA

Zhou (2017) also observed that heritage learners, despite their stronger oral proficiency, often struggled with literacy-related challenges, such as print vocabulary knowledge and formal reading skills. These gaps in literacy can contribute to uncertainty and anxiety when reading

Chinese texts, as heritage learners may be less familiar with written grammatical structures and character-based vocabulary compared to their non-heritage counterparts. In contrast, non-heritage learners often experience anxiety due to character recognition difficulties, radical processing, and phonetic decoding issues (Jeon & Yamashita, 2014). Unlike heritage learners, they typically require explicit instruction in stroke order, character formation, and phonetic-semantic cues to build confidence in reading comprehension. The anxiety stemming from these challenges underscores the need for differentiated instructional approaches that address the unique learning trajectories of each group.

According to Zhou (2017), it appears that learner variability can be theorized as a critical factor in shaping FLRA experiences among CFL learners. The diversity in learners' linguistic and educational backgrounds serves as a mediating variable that influences their levels of reading anxiety. From this perspective, FLRA is not a uniform construct but is shaped by the interplay between learners' prior exposure to Chinese and their literacy development. For instance, heritage learners and non-heritage learners represent distinct learner profiles that experience FLRA differently. Heritage learners, who often possess stronger oral proficiency due to early exposure to the language in familial or community settings, may still face challenges with print vocabulary knowledge and formal literacy skills (Lee, 2005). This suggests that their anxiety arises from a mismatch between oral fluency and the demands of written language, highlighting the need to consider learners' unique sociolinguistic histories and literacy trajectories when theorizing about FLRA.

Additionally, heritage learners may face higher expectations from instructors and peers due to their presumed linguistic background, which can lead to increased performance-related FLRA (Zhao et al., 2013). Meanwhile, non-heritage learners may perceive reading Chinese as more cognitively demanding due to the unfamiliarity of logographic scripts. Understanding these differences is critical for designing effective FLRA-reduction interventions. By incorporating targeted scaffolding techniques—such as phonetic decoding exercises for non-heritage learners and literacy development support for heritage learners—educators can ensure that both groups receive structured and differentiated pedagogical support that aligns with their specific learning trajectories.

The Role of Metacognitive and Cognitive Strategies

Although Zhou (2017) acknowledges that some CFL learners develop coping strategies over time, the study does not deeply explore the role of explicit strategy instruction in reducing FLRA systematically. Research indicates that learners who are explicitly trained in metacognitive reading strategies experience lower anxiety levels compared to those who rely on unstructured, trial-and-error approaches (Osuji, 2020). Moreover, studies have suggested that explicit metacognitive strategy instruction is particularly effective when integrated with reflective reading practices. For example, students who engage in think-aloud protocols or guided journal writing while reading in a foreign language demonstrate higher comprehension and lower anxiety levels (Zhao et al., 2013). Encouraging CFL learners to articulate their thought processes while reading and reflect on their difficulties allows them to gain better control over their reading comprehension and reduce stress. Additionally, collaborative reading strategies, such as peer-assisted learning or discussion-based reading activities, have been found to enhance engagement

and alleviate FLRA by fostering a sense of community and shared learning responsibility (Jeon & Yamashita, 2014). These approaches offer valuable insights into how metacognitive interventions can be expanded to better support CFL learners.

In responding to Zhou's (2017) call for helping students cope with anxiety-producing situations and making the learning context less stressful, metacognitive reading strategies seem to be essential to overcome those difficulties. The role of metacognitive and cognitive strategies in regulating FLRA can be theorized within the framework of cognitive processing models. FLRA, as a psychological construct, is strongly influenced by learners' ability to actively control and adapt their reading processes, aligning with theories of metacognition (Teng, 2025).

Metacognitive strategies, which involve higher-order thinking processes such as planning, monitoring, and evaluating one's comprehension, are particularly critical for mitigating FLRA. According to Osuji (2020), learners who can monitor their reading process, predict potential difficulties, and employ appropriate strategies to address these challenges experience reduced anxiety and improved comprehension. This aligns with Jeon and Yamashita's (2014) findings that heightened metacognitive awareness fosters greater reading fluency and confidence, suggesting that metacognitive development is integral to alleviating FLRA over time. From a theoretical perspective, metacognitive strategies in reading can be conceptualized as self-regulation techniques that enable learners to take control of their reading experiences. These include comprehension monitoring, self-questioning, summarization, and error analysis, which allow learners to anticipate comprehension breakdowns and apply corrective measures (Ghaith, 2020). Such strategies align with sociocultural theory (Lantolf, & Beckett, 2009), emphasizing the role of active engagement and self-directed learning in overcoming cognitive and emotional barriers.

The Role of Technology-Assisted Interventions

Zhou's (2017) foundational emphasis on supportive reading environments establishes a critical baseline for addressing FLRA in CFL contexts. However, the study lacks integration with emerging digital mediation paradigms, a gap that becomes salient given the accelerating technologization of reading pedagogy. This omission is particularly significant in light of the increasing integration of technology into language education. With the rapid advancement of AI-based tools, adaptive reading platforms, and personalized learning technologies, there is a growing need to investigate how these innovations can be leveraged to address FLRA in CFL learners. Such technologies have the potential to provide tailored reading experiences, offering individualized feedback, adaptive difficulty levels, and real-time support, which may help learners overcome challenges related to unfamiliar vocabulary, complex syntactic structures, and comprehension monitoring.

Technology-assisted interventions have emerged as a powerful mechanism for supporting CFL learners in reducing FLRA and enhancing reading engagement. Digital tools such as adaptive reading platforms, AI-driven chatbots, and gamified learning environments provide scaffolding and real-time feedback, allowing learners to develop reading confidence at their own pace (Huang & Zhang, 2024). For example, digital platforms employing machine learning algorithms operationalize Vygotskian Zone of Proximal Development principles by dynamically adjusting

text complexity and syntactic structures. This real-time adaptation reduces cognitive overload, a primary FLRA driver (Jeon & Yamashita, 2014), by ensuring learners encounter challenge levels that optimize the anxiety-efficacy threshold.

AI has been increasingly integrated into CFL instruction to offer personalized reading support and reduce anxiety associated with pronunciation and comprehension difficulties. Research by Zheng (2024) found that AI-assisted chatbot interventions can provide real-time pronunciation feedback and comprehension support, helping learners reduce performance-related anxiety.

Additionally, adaptive reading platforms adjust text difficulty levels dynamically based on individual learner progress, helping CFL learners navigate complex texts while minimizing frustration. When combined with gamification strategies, AI-driven solutions not only provide personalized reading support but also enhance motivation by incorporating progress tracking, achievement rewards, and competitive reading tasks, making reading tasks feel more manageable (Jeon & Yamashita, 2014). We posit that FLRA reduction in CFL contexts requires systemic integration of these digital constructs with traditional reading pedagogies.

Pedagogical Implications and Future Research Directions

Pedagogical Implications

Addressing FLRA in CFL learners requires a multi-faceted pedagogical approach that directly targets key sources of reading anxiety identified by Zhou (2017), such as comprehension difficulties, pronunciation-related stress, and cognitive overload when processing logographic scripts. To address these challenges, CFL instructors can implement a combination of metacognitive strategy training, technology-assisted interventions, and differentiated instruction tailored to learner variability. Additionally, scaffolded comprehension exercises, where students gradually transition from supported reading tasks (e.g., teacher-assisted decoding) to independent analysis, can reinforce self-regulation in reading.

Furthermore, differentiated instruction is essential for addressing learner variability in FLRA. Heritage learners, while often possessing stronger oral proficiency, frequently struggle with print vocabulary knowledge and formal literacy skills (Lee, 2005). To support this group, instructors can implement vocabulary knowledge training and morphological awareness exercises, where students analyze character radicals and phonetic components to enhance word recognition (Teng & Cui, 2025). Additionally, visual-based literacy tools, such as character decomposition software and digital stroke order tutorials, can bridge the gap between oral and written proficiency.

Conversely, non-heritage learners, who often face challenges with phonetic decoding and radical processing, benefit from explicit instruction in character recognition strategies (Jeon & Yamashita, 2014). Educators can implement progressive decoding exercises, starting with pinyin-assisted reading, then gradually shifting to character-only texts to build reading confidence. Sentence reconstruction tasks, where students rearrange characters into meaningful phrases, can further reinforce reading fluency and comprehension. Providing learners with structured reading choices ensures that both heritage and non-heritage learners engage with texts

that align with their proficiency and interests, fostering greater autonomy and confidence. (Zhao et al., 2013).

By integrating metacognitive training, adaptive technology, and differentiated instructional approaches, CFL educators can create a low-anxiety reading environment that fosters learner confidence and promotes long-term engagement with Chinese reading materials.

Future Research Directions

Despite Zhou's (2017) contributions, several areas require further investigation to fully understand and mitigate FLRA. Pan and Zhang (2021) emphasized that language learning anxiety fluctuates based on learners' experiences, personality traits, and instructional support. Future research should extend this approach to CFL learners by tracking how FLRA develops across different proficiency levels and educational settings.

Additionally, research should further examine the impact of AI-based reading interventions. While Zheng (2024) and Huang and Zhang (2024) highlight the potential of chatbots, adaptive reading tools, and gamification, empirical studies are still needed to assess their long-term impact on reducing FLRA. Understanding whether technology-assisted learning can lead to a sustained reduction in anxiety will be crucial for designing effective digital interventions.

Finally, the role of sociocultural factors in FLRA should be explored further. CFL learners come from diverse linguistic and educational backgrounds, which influence their perceptions of difficulty and engagement with texts (Lee, 2005). Research should investigate how previous literacy experiences, cultural identity, and motivation interact with FLRA, particularly in digital and hybrid learning contexts.

Conclusion

We agree with Zhou (2017) that one effective method to improve lower-level processing and enhance reading fluency is through extensive reading on a variety of topics. Extensive reading has long been recognized as an efficient and motivating approach for language learners, as it exposes them to diverse vocabulary, grammar patterns, and cultural contexts in a low-pressure setting (Zhou, 2024). Zhou (2017) contributes to this discussion by emphasizing that reading can be a significant source of anxiety for language learners, highlighting the importance of understanding both the functions and sources of FLRA. Her study further demonstrates that learners' anxiety levels tend to decrease as their course level increases and as they accumulate more experience learning the language. It appears that familiarity with the language and increased exposure to reading tasks may play a role in alleviating anxiety over time.

Despite the understandings based on Zhou (2017), FLRA remains a significant barrier to both reading proficiency and confidence among CFL learners. This specific form of anxiety, often stemming from the complexity of the Chinese writing system, unfamiliar cultural contexts, and the cognitive demands of decoding characters, can hinder learners' ability to engage deeply with texts and develop the fluency required for advanced reading comprehension. Addressing FLRA

is therefore essential for fostering both linguistic competence and learner confidence in CFL contexts.

Future research should prioritize longitudinal studies to better understand the progression of FLRA over time. Longitudinal research would also help identify critical periods during which learners are most vulnerable to FLRA, enabling educators to design targeted interventions to mitigate its effects. Future studies should also assess the long-term effectiveness of AI-driven interventions in addressing FLRA. With the growing integration of technology in language education, AI-based tools such as adaptive reading platforms, personalized feedback systems, and intelligent tutoring programs offer promising avenues for reducing anxiety and enhancing comprehension.

Specifically, studies should explore whether these interventions lead to lasting improvements in reading proficiency and whether they are equally effective across different learner profiles, such as heritage versus non-heritage learners. Furthermore, sociocultural influences shaping CFL learners' reading anxiety warrant deeper exploration. Reading is not only a cognitive process but also a deeply social and cultural activity, and learners' experiences with reading in Chinese are shaped by their cultural identities, linguistic backgrounds, and prior exposure to Chinese texts.

For instance, heritage learners may experience lower levels of FLRA due to their familiarity with spoken Chinese and cultural contexts, while non-heritage learners may face additional challenges in navigating culturally specific references or idiomatic expressions. Understanding how these sociocultural factors influence FLRA can inform more inclusive and culturally responsive teaching practices.

Additionally, the role of societal attitudes toward the Chinese language, learners' perceptions of their own linguistic identities, and the impact of peer and instructor support on anxiety levels are important areas for future investigation. By integrating longitudinal, technological, and sociocultural perspectives, future research can provide a more comprehensive understanding of FLRA and its impact on CFL learners' reading experiences, creating more supportive and effective learning environments for students of Chinese worldwide.

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