

A Conceptual Paper on Cognitive and Metacognitive Strategies in L2 Reading among Tertiary ESL Learners

Nur Amalina binti Awang^{1*}, Wan Nuur Fazliza binti Wan Zakaria², Mohd Faiez bin Suhaimin³

^{1,2}Academy of Language Studies, Universiti Teknologi MARA Kelantan Branch, Malaysia,

³Faculty of Computer and Mathematical Sciences, Universiti Teknologi MARA Kelantan Branch, Malaysia

***Corresponding Author**

DOI: <https://dx.doi.org/10.47772/IJRISS.2025.924ILEIID0028>

Received: 23 September 2025; Accepted: 30 September 2025; Published: 29 October 2025

ABSTRACT

Reading is central to academic success, yet many ESL learners approach texts passively, focusing on content rather than adopting strategic reading practices. Consequently, this often results in surface-level processing, which limits both comprehension and meaningful understanding. Past research has highlighted that reading in a second language is more complex than reading in one's first language, requiring not only linguistic knowledge but also the systematic use of effective strategies. The literature distinguishes between cognitive strategies, which help readers decode and construct meaning, and metacognitive strategies, which enable them to plan, monitor, and evaluate their comprehension. Across diverse ESL contexts, findings have shown uneven development of strategic awareness among learners. At the tertiary level, integrating both cognitive and metacognitive strategies is crucial. Cognitive strategies strengthen understanding and retention, while metacognitive strategies foster selfregulation and autonomy. Effective instruction, therefore, requires explicit modelling of strategy use, enabling learners to internalise and apply them during academic reading. This paper concludes that the dynamic interplay between cognitive and metacognitive strategies is vital for fostering deep comprehension and enhancing the academic performance of ESL learners.

Keywords: cognitive, metacognitive, reading strategies, L2 reading

INTRODUCTION

Reading is a fundamental skill for academic success in tertiary education. However, English as a Second Language (ESL) learners often approach texts passively, focusing on what to read (content, information, vocabulary) rather than how to read strategically. Research has shown that many rely heavily on surface-level processing—such as memorisation or translation—without employing systematic strategies that promote deeper comprehension (Anderson, 2002; Zhang & Seepho, 2013). Consequently, learners may complete reading tasks but still struggle to construct meaning, integrate ideas, or monitor their understanding.

Building on this concern, studies consistently indicate that reading proficiency in a second language (L2) is considerably more demanding than in one's first language (L1), given the inherent complexity of the process (Zhang & Seepho, 2013; Grabe & Stoller, 2002). Snow (2002) further noted that many learners face persistent difficulties in comprehending academic texts, while Eskey (2005) observed that even students with adequate linguistic competence often encounter obstacles in fully understanding such materials.

The importance of strategy use in addressing these challenges is underscored in Jaiswal's (2025) 20-year review of cognitive, metacognitive, and digital reading strategies in English education. Although her review primarily focused on foundation-level instruction, she emphasised that metacognitive and digital strategies remain highly relevant in secondary and tertiary contexts. The said relevance is due to the increasing complexity of academic reading tasks, which are embedded within discipline-specific domains and require higher levels of cognitive engagement. Shih (1992) similarly highlighted that thorough comprehension is

indispensable in academic settings, as it underpins students' ability to perform explicit cognitive and procedural tasks such as examinations, academic writing, and oral presentations.

A central concern, therefore, lies in the underdevelopment of cognitive and metacognitive reading strategies among ESL learners. For example, Wen (2003) found that many Chinese students often attribute their academic reading difficulties to a lack of knowledge in grammar and vocabulary. However, the deeper challenge lies in their lack of awareness and the ineffective use of metacognitive strategies to regulate their reading. Likewise, in many tertiary ESL contexts, learners receive little explicit instruction on how to employ such strategies. As a result, they may engage in extensive reading but lack the necessary awareness of when, why, and how to apply strategies that enhance comprehension and foster autonomy (Ahmadi, Ismail, & Abdullah, 2013).

LITERATURE REVIEW

The distinction between cognitive and metacognitive strategies was first introduced by Flavell (1979), who defined metacognition as the awareness and regulation of one's own cognitive processes. This distinction was soon applied to reading research. Paris, Lipson, and Wixson (1983), for instance, differentiated between cognitive strategies—techniques readers use to construct meaning, such as summarising and inferencing—and metacognitive strategies, which involve planning, monitoring, and evaluating comprehension. Baker and Brown (1984) further underscored the role of comprehension monitoring, while Kintsch (1988) advanced a cognitive model explaining how readers integrate textual information.

In the 1990s, researchers broadened these ideas into systematic taxonomies of language learning strategies. O'Malley and Chamot (1990) and Oxford (1990) distinguished between cognitive and metacognitive dimensions, whereas Pressley and Afflerbach (1995), using think-aloud protocols, demonstrated how both sets of strategies operate in real-time during reading. Building on this foundation, Mokhtari and Reichard (2002) developed the Metacognitive Awareness of Reading Strategies Inventory (MARSİ) to assess readers' strategic awareness. Mokhtari and Sheorey (2002) later adapted this instrument for ESL contexts in the widely used Survey of Reading Strategies (SORS).

From the 2000s onwards, research moved beyond definitions to highlight applications across diverse educational settings, particularly among ESL and EFL learners. Studies explored how strategic awareness contributes to comprehension, academic achievement, and learner autonomy. For example, Zhang and Wu (2009) examined metacognitive awareness among Chinese EFL learners, while Sheorey and Mokhtari's (2002).

SORS continued to be employed and adapted across cultural contexts. By the 2010s, scholars such as Anderson (2012) drew attention to the emerging digital reading environment, where navigating hypertexts and multimodal texts demands both cognitive and metacognitive strategies.

Within Malaysia, research has similarly examined learners' awareness and use of reading strategies. Rajab, Abdul Rahman, and colleagues (2017) found that undergraduates tended to prioritise problem-solving strategies over global or support strategies. At the secondary level, Abdul Razak, Abdul Gani, and Che Ithnin (2018) reported variations in the use of global, problem-solving, and support strategies depending on proficiency level. These findings indicate that Malaysian learners employ strategies in distinct ways across educational contexts, but also suggest uneven development of strategic awareness. Such insights position local research within the broader global discourse, underscoring the need for more focused attention on how ESL learners can be supported in developing effective cognitive and metacognitive strategies.

Importance of Cognitive and Metacognitive Strategies in Tertiary ESL Reading

Reading at the tertiary level poses significant linguistic and cognitive challenges for ESL learners. The transition from general language learning to advanced and discipline-specific literacy requires learners to equip themselves with a strategic approach to reading. Linguistically, these learners are challenged by the complexity of texts, the need to use appropriate reading strategies, and the requirement for advanced vocabulary (Urrutia et al., 2024; Wang et al., 2023). Meanwhile, from a cognitive facet, reading requires learners to possess working memory, critical reading skills, motivation, and a positive attitude towards reading (Le et al., 2024;

Urrutia et al., 2024). As tertiary ESL reading focuses on comprehending academic discourse, integrating cognitive and metacognitive strategies in reading instruction is deemed crucial for producing proficient readers who can comprehend texts and effectively self-regulate their learning process, as supported by Yayli (2010) and Takallou (2011).

Becoming competent readers has long been the primary goal in language learning, spanning from elementary education to the demands of tertiary level. In fact, as González-Betancor et al. (2022) contend, reading competence directly affects students' academic performance. To become competent readers, readers need to employ both cognitive and metacognitive strategies during the reading process. While cognitive strategies prepare ESL learners with skills to decode and construct meaning from complex texts, metacognitive strategies allow them to plan, monitor, and evaluate their comprehension processes; both share the same goal, i.e., helping learners to understand and comprehend complex texts. However, their roles differ slightly; the former strategies function in improving understanding and retention of texts (Babaii et al., 2021), while the latter enhance comprehension by managing cognitive resources (Kaskosh & Khateb, 2021). It is evident, based on the findings by Mohammadi et al. (2023), that cognitive and metacognitive strategies have a significant and direct influence on learners' critical thinking and reading comprehension, with motivation showing the most substantial total effect on students' self-regulated learning. Interestingly, Christhlf et al. (2022) revealed that different comprehension strategies — paraphrasing, bridging, and elaborating — were consistently applied by more skilled and successful readers compared to less successful ones while reading the text, demonstrating their engagement with the text's core ideas.

Beyond comprehension, metacognition is the engine of learner autonomy. The “thinking about thinking” processes, which operate in three phases —planning, monitoring, and evaluating —according to Flavell (1979), enable ESL learners to control and be aware of the comprehension process. These learners have the capabilities to independently address comprehension issues and search for corrective measures, which reflects their success in comprehending reading texts. Zhang (2001) asserted that those with strong metacognitive awareness were more proficient in effectively applying cognitive strategies, and this finding aligns with Suharto (2025), who observed that the tertiary students possessing higher metacognitive awareness demonstrated greater confidence and motivation to regulate their reading comprehension journey.

Implications of ESL Instruction and Future Directions

The incorporation of cognitive and metacognitive strategies into instruction is significant for improving students' language skills, particularly in reading comprehension. Providing explicit strategy instruction in classrooms enables ESL instructors to address the diverse needs of readers, which can be effectively implemented through a structured and systematic approach. For one, modelling or think-aloud benefits learners by making cognitive and metacognitive strategies visible; this approach shows how to analyse, interpret, and reflect on one's understanding in real-time. In addition, it is imperative for ESL instructors at the tertiary level to model effective reading strategies and guide learners on how to apply these strategies appropriately when dealing with reading tasks. According to Awang et al. (2024), such instructional practices facilitate learners' reflection on their reading comprehension processes through structured activities, which subsequently enhance their reading proficiency.

Furthermore, ESL instructors must equip themselves with a deep understanding of cognitive and metacognitive reading strategies as they will be the ones helping learners to process and control reading comprehension. Such need relates to the concern raised by Ali and Razali (2019), who found that the teachers' preference for using certain strategies rather than a diverse range of reading strategies negatively affects students' achievement in learning. The need to prepare teachers with adequate knowledge of various reading strategies to address different comprehension questions is also highlighted by Javed et al. (2016), alongside the adoption of teaching methods specifically tailored to the needs of their students. Expectantly, these strategies will have a positive impact on both teachers and students in advancing reading comprehension processes and overall academic performance.

A clear call for future research involves investigating how ESL learners exploit cognitive and metacognitive reading strategies in real ESL reading classrooms, particularly when engaging with diverse types and complexities of reading texts. More insightful findings can emerge by focusing on the relationships between

these two different types of reading strategies throughout the reading process, rather than examining them in isolation. Moreover, to gain richer insights into the strategies used during actual reading tasks, it is suggested to move beyond reliance on self-reported questionnaires and instead incorporate other data collection methods such as observation, interviews, and video analysis.

CONCLUSION

This article highlights the roles of cognitive and metacognitive strategies in L2 reading, as well as their implications for ESL teaching and learning. Acknowledging the issue that L2 learners often know what to read but struggle with how to read strategically, the study emphasises the importance of using reading strategies effectively and appropriately when engaging with texts. The findings revealed that both cognitive and metacognitive strategies are essential in reading comprehension: cognitive strategies aid in comprehending texts and utilising the language, while metacognitive strategies empower learners to plan, monitor and evaluate their comprehension processes. Since high-achieving readers consistently outperform their low-achieving counterparts, it is essential to emphasise that innovations in ESL reading pedagogy are crucial for bridging this gap. Therefore, strategic and effective reading will arise from the dynamic interplay between cognitive and metacognitive domains, i.e. engaging in test comprehension while simultaneously regulating understanding, to achieve deep comprehension.

REFERENCES

1. Ali, A. M., & Razali, A. B. (2019). A review of studies on cognitive and metacognitive reading strategies in teaching reading comprehension for ESL/EFL learners. *English Language Teaching*, 12(6), 94–111.
2. Anderson, N. J. (2012). Reading instruction. In A. Burns & J. C. Richards (Eds.), *The Cambridge guide to pedagogy and practice in second language teaching* (pp. 218–226). Cambridge University Press.
3. Awang, N. A., Pauzi, N. M., Ismail, W. S. A. W., Ab Ghani, M. A., & Hassanuzin, S. (2024). Assessing metacognitive strategies for L2 reading: Insights from tertiary ESL classrooms in Kelantan. *Quantum Journal of Social Sciences and Humanities*, 5(6), 442–452.
4. Babaii, E., Permyakova, T. M., & Pozdeeva, E. V. (2021). Strategies in performing a multi-level C-test: Applying think-aloud protocols. *Journal of Language and Education*, 7(3), 1–12.
5. Christhlf, K., Newton, N., Butterfuss, R., McCarthy, K. S., Allen, L. K., Magliano, J. P., & McNamara, D. S. (2022). Using Markov models and random walks to examine strategy use of more or less successful comprehenders. *Proceedings of the International Educational Data Mining Society Conference*.
6. Eskey, D. E. (2005). Reading in a second language. In E. Hinkel (Ed.), *Handbook of research in second language teaching and learning* (pp. 563–580). Lawrence Erlbaum Associates.
7. Flavell, J. H. (1979). Metacognition and cognitive monitoring: A new area of cognitive–developmental inquiry. *American Psychologist*, 34(10), 906–911.
8. González-Betancor, S. M., Fernández-Monroy, M., Galván-Sánchez, I., & López-Puig, A. J. (2022). Academic performance of first-year university students: Modelling the role of reading competence. *Higher Education Research & Development*, 42(6), 1422–1437.
9. Grabe, W., & Stoller, F. (2002). *Teaching and researching reading*. Pearson Education.
10. Jaiswal, P. (2025). Cognitive, metacognitive, and digital reading strategies in English education: A 20year review. *International Journal of Linguistics, Literature & Translation*, 8(9), 10–18.
11. Javed, M., Eng, L. S., Mohamed, A. R., & Ismail, S. A. M. M. (2016). Identifying reading strategies to teach literal, reorganisation and inferential comprehension questions to ESL students. *Journal of Asia TEFL*, 13(3), 204–210.
12. Kaskosh, E., & Khateb, A. (2021). Implementing meta-cognitive learning strategies to improve intertextual Arabic comprehension competences: An intervention study among Arabic-speaking tenth graders. *Theory and Practice in Language Studies*, 11(7), 757–767.
13. Kintsch, W. (1988). The role of knowledge in discourse comprehension: A construction-integration model. *Psychological Review*, 95(2), 163–182.

14. Le, H. V., Nguyen, T. A. D., Le, D. H. N., Nguyen, P. U., & Nguyen, T. T. A. (2024). Unveiling critical reading strategies and challenges: A mixed-methods study among English major students in a Vietnamese higher education institution. *Cogent Education*, 11(1), 2326732.
15. Mohammadi, R. R., Saeidi, M., & Abdollahi, A. (2023). Modelling the interrelationships among self-regulated learning components, critical thinking and reading comprehension by PLS-SEM: A mixed methods study. *System*, 117, 103120.
16. Mokhtari, K., & Reichard, C. A. (2002). Assessing students' metacognitive awareness of reading strategies. *Journal of Educational Psychology*, 94(2), 249–259.
17. Mokhtari, K., & Sheorey, R. (2002). Measuring ESL students' awareness of reading strategies. *Journal of Developmental Education*, 25(3), 2–11.
18. O'Malley, J. M., & Chamot, A. U. (1990). *Learning strategies in second language acquisition*. Cambridge University Press.
19. Oxford, R. L. (1990). Language learning styles and strategies. In J. E. Alatis (Ed.), *Georgetown University Round Table on Languages and Linguistics (GURT) 1990: Linguistics, language teaching and language acquisition* (pp. 438–456). Georgetown University Press.
20. Paris, S. G., Lipson, M. Y., & Wixson, K. K. (1983). Becoming a strategic reader. *Contemporary Educational Psychology*, 8(3), 293–316.
21. Pressley, M., & Afflerbach, P. (1995). *Verbal protocols of reading: The nature of constructively responsive reading*. Lawrence Erlbaum Associates.
22. Rajab, A., Rahman, H. A., Wahab, S. R. A., Nor, F. M., Zakaria, W. Z. W., & Rajim, W. Z. (2017). Metacognitive reading strategies among undergraduates. *International Journal of Information and Education Technology*, 7(7), 548–551.
23. Razak, N. Z. A., Gani, N. A. A., & Ithnin, N. H. C. (2018). Reading metacognitive strategies employed by ESL learners. *IRA International Journal of Education and Multidisciplinary Studies*, 12(3), 61–73.
24. Reza Ahmadi, M., Nizam Ismail, H., & Kamarul Kabilan Abdullah, M. (2013). The importance of metacognitive reading strategy awareness in reading comprehension. *English Language Teaching*, 6(10), 235–244.
25. Shih, M. (1992). Beyond comprehension exercises in the ESL academic reading class. *TESOL Quarterly*, 26(2), 289–318.
26. Snow, C. (2002). *Reading for understanding: Toward an R&D program in reading comprehension*. RAND Education.
27. Suharto, P. P., Damayanti, I. L., & Lengkanawati, N. S. (2025). Exploring metacognitive strategies to support young learners in developing their learner autonomy. *International Journal of Language Education*, 9(2), 331–355.
28. Takallou, F. (2011). The effect of metacognitive strategy instruction on EFL learners' reading comprehension performance and metacognitive awareness. *Asian EFL Journal*, 13(1), 272–300.
29. Urrutia, M., Mariángel, S., Pino, E. J., Guevara, P., Torres-Ocampo, K., Troncoso-Seguel, M., Bustos, C., & Marrero, H. (2024). Impact of affective and cognitive variables on university student reading comprehension. *Education Sciences*, 14(6), 554.
30. Wang, C., You, X., & Lu, J. (2023). Reading ability and challenges in a project-based academic report writing course: A test of the threshold hypothesis. *Language Teaching Research*, 27(4), 568–585.
31. Wen, Q. F. (2003). *The successful way of learning English*. Shanghai Foreign Language Education Press.
32. Yayli, D. (2010). A think-aloud study: Cognitive and metacognitive reading strategies of ELT department students. *Eurasian Journal of Educational Research*, 38(3), 234–251.
33. Zhang, L., & Seepho, S. (2013). Metacognitive strategy use and academic reading achievement: Insights from a Chinese context. *Electronic Journal of Foreign Language Teaching*, 10(1), 70–85.
34. Zhang, L. J. (2001). Awareness in reading: EFL students' metacognitive knowledge of reading strategies in an acquisition-poor environment. *Language Awareness*, 10(4), 268–288.
35. Zhang, L. J., & Wu, A. (2009). Chinese senior high school EFL students' metacognitive awareness and reading-strategy use. *Regional Language Centre Journal*, 40(1), 97–111.