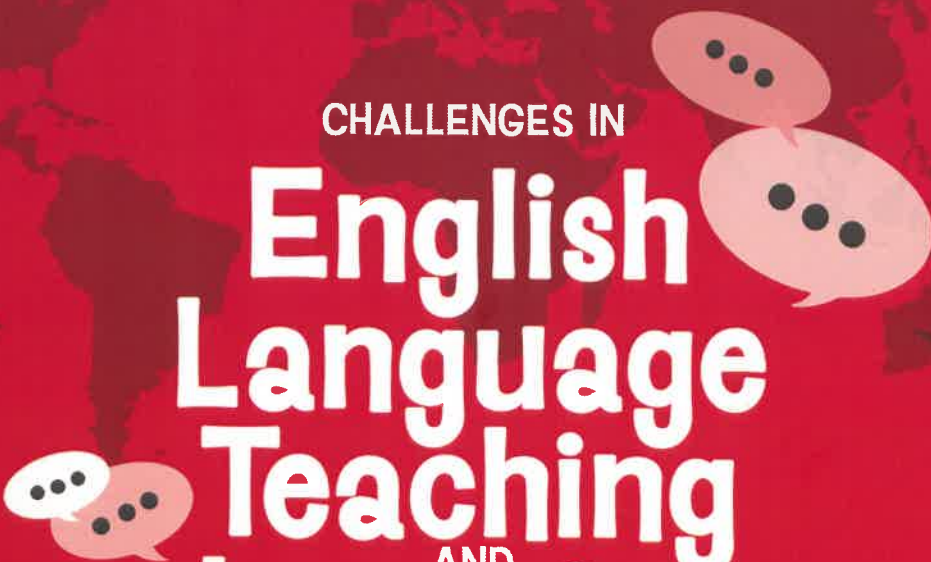


MALDEC BOOK SERIES VOLUME 3

CHALLENGES IN



English Language Teaching AND Learning

Global Perspectives
And Local Realities

Editors

Nazifah Hamidun

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THE THINKING OF READING: IMPACT OF METACOGNITIVE STRATEGIES AMONG UNDERGRADUATE STUDENTS

Damien Anak Mikeng

Reading is one of the four foundational language skills and plays a decisive role in determining overall language proficiency (Krashen & Brown, 2007). Unlike speaking and writing, traditional reading instruction has often treated comprehension as a mechanical or passive process (Mohseni *et al.*, 2020). However, contemporary perspectives recognise reading as an active, dynamic, and evaluative process that requires readers to construct meaning through critical engagement with text (Pressley, 2000). Within academic contexts, reading remains the cornerstone of learning as students must engage with textbooks, journal articles, theses, and reports to complete coursework and assessments (Levine *et al.*, 2000). Hence, mastery of reading is directly linked to general language ability (Krashen & Brown, 2007) and remains a reliable indicator of academic achievement (Mohd Sidek, 2008).

In the Malaysian L2 context, reading comprehension difficulties are frequently attributed to limited English proficiency (Ghazali *et al.*, 2009; Hwang & Embi, 2007; Rashid *et al.*, 2010; Sidhu *et al.*, 2010). Reading is a cognitively demanding process that involves interpreting both explicit and

implicit meanings, guided by metacognitive strategies that enable readers to plan, monitor, and evaluate their understanding. According to Sweet and Snow (2002), comprehension occurs when readers actively construct meaning from context, whereas Zimmerman and Hutchins (2003) argue that decoding linguistic symbols and understanding lexical and syntactic structures are integral to comprehension. Consequently, explicit instruction in reading strategies is crucial for improving comprehension (Almutairi, 2018). Without such guidance, readers risk cognitive failure in processing texts effectively (Slater & Horstman, 2002). This issue is particularly critical at the tertiary level, where struggling readers face heightened academic demands and risk disengagement or dropout due to poor performance (Stinebrickner & Stinebrickner, 2014).

The ability to comprehend written texts is not a passive skill but a complex cognitive process involving the activation of prior knowledge, inference-making, and self-monitoring (Kintsch, 2013; Snow, 2002). Successful reading comprehension requires learners to use Higher-Order Thinking Skills (HOTS), which include the capacity to analyse, evaluate, and synthesise information. However, ineffective reading habits and limited strategic awareness often prevent learners from engaging deeply with academic texts. To address this gap, scholars have increasingly highlighted the role of metacognitive strategies as thinking about one's own thinking as the essential mechanisms for improving comprehension and learner autonomy (Anthonysamy, 2021; Teng, 2020).

While numerous studies have examined metacognitive awareness among ESL learners globally, there remains a paucity of empirical research focusing on Malaysian undergraduates. Previous research indicates that teachers often prioritise syllabus completion and examination outcomes over strategy instruction (Yang, 2015; Halim *et al.*, 2020). Moreover, students frequently struggle to interpret figurative meanings, integrate contextual information, and manage reading time effectively (Ghazali *et al.*, 2009; Djudin, 2017). These limitations highlight an urgent need to cultivate metacognitive awareness and self-regulated learning behaviours in tertiary English courses.

Another critical concern is the insufficient integration of metacognitive instruction into the English curriculum design. Although MEB 2015–2025 emphasises the development of HOTS and lifelong learning competencies,

explicit metacognitive training is rarely embedded in language pedagogy. As a result, many Malaysian undergraduates are unable to apply higher-order cognitive and metacognitive strategies independently when engaging with academic texts (Abu Bakar & Ismail, 2020; Phan, 2020).

Recognising these concerns, the present study focuses on the application of metacognitive strategies, specifically planning, monitoring, and evaluating in reading English texts for comprehension among Malaysian undergraduates. The objectives of this study are:

- a) to identify the level of use for planning, monitoring, and evaluating strategies in reading English texts for comprehension among undergraduates; and
- b) to identify the challenges faced by undergraduates in applying these strategies when reading English texts.

Theoretical Background

Metacognition, first conceptualised by Flavell (1979), refers to the awareness and regulation of one's cognitive processes. It encompasses two components: metacognitive knowledge (awareness of strategies, tasks, and personal factors) and metacognitive regulation (the ability to plan, monitor, and evaluate one's learning). In second language (L2) learning, metacognitive strategies enable students to consciously plan how to approach a reading task, monitor their understanding during the process, and evaluate the effectiveness of their strategies after completing the task (Ahmadi *et al.*, 2013).

In reading comprehension research, metacognitive strategies are typically categorised into three interrelated regulatory processes, namely planning, monitoring, and evaluating (Jacobs & Paris, 1987). Planning strategies occur during the pre-reading stage, where learners prepare by setting goals, previewing, or using resources such as dictionaries. Monitoring strategies occur while reading, involving actions like underlining unfamiliar words or taking notes to ensure ongoing comprehension. Evaluating strategies are employed post-reading, when learners assess their understanding, reflect

on the effectiveness of the strategies, and consolidate knowledge for future tasks. These strategies, when used collectively, enhance self-regulated reading and promote meaningful comprehension.

Metacognitive Learning Theory posits that successful learners not only possess knowledge about strategies but can also regulate their use effectively (Schraw & Moshman, 1995). These regulatory processes of planning, monitoring, and evaluating strategies operate across different phases of learning. Planning involves setting goals, predicting outcomes, and allocating resources; monitoring involves assessing ongoing comprehension; and evaluation entails reflecting on performance and outcomes (Ahmadi *et al.*, 2013).

Flavell’s early distinction between cognition and metacognition remains significant (Table 1.1). While cognitive activities involve direct learning processes such as remembering or reasoning, metacognitive activities involve awareness and control over those processes.

Table 1.1 Cognition and metacognition (Adapted from Flavell, 1979)

COGNITION	METACOGNITION
Mental processes used in learning, reasoning, and problem solving	Awareness and regulation of cognitive processes
Involves memory, attention, perception	Involves planning, monitoring, and evaluating strategies
Focused on doing	Focused on knowing about doing

Metacognitive Learning Theory has evolved considerably, influencing multiple domains such as psychology, education, and applied linguistics. In L2 learning, it offers a framework for understanding how learners consciously manage linguistic input and comprehension. Studies by Teng (2020) and Zhang and Wu (2022) demonstrate that learners who receive metacognitive training show higher reading comprehension and transfer these strategies to other tasks. Similarly, Pintrich (2004) and Anthonysamy (2021) emphasise that metacognitive regulation supports self-directed learning, encouraging learners to take ownership of their academic progress.

Empirical research consistently supports the positive relationship between metacognitive strategy use and reading comprehension outcomes among ESL learners (Teng, 2020; Zhang & Seepho, 2013). Students who demonstrate greater metacognitive awareness tend to be more self-regulated, motivated, and able to transfer skills across different learning contexts (Schraw *et al.*, 2006). In contrast, readers with limited metacognitive control often struggle to connect new information to prior knowledge, interpret meanings, and sustain concentration during reading (Phakiti, 2003). A substantial body of research in second and foreign language (L2) learning supports the centrality of metacognitive strategies in reading (McNamara & Magliano, 2009; Krashen, 1989; Grabe, 2009). Cognitive models of reading emphasise that effective comprehension depends on the coordination of mental processes that allow learners to make inferences, monitor understanding, and repair comprehension failures (Pardo, 2004). However, mechanisms such as metacognitive awareness and higher-order thinking skills are still underexplored, particularly among less proficient L2 readers. Therefore, highlighting the role of metacognitive strategies in reading is essential, as they empower learners to regulate their comprehension, enhance academic literacy, and develop the autonomy necessary for lifelong learning.

Within the Malaysian context, reading comprehension difficulties are often linked to weak vocabulary acquisition, limited exposure to authentic English texts, and a lack of explicit instruction in reading strategies (Ghazali *et al.*, 2009; Halim *et al.*, 2020). Although English is taught as a compulsory subject throughout the national education system, many learners remain overly dependent on teacher-centred instruction, with limited emphasis on independent strategy development (Lu, 2015). Consequently, students often fail to apply planning, monitoring, and evaluating strategies when reading complex texts.

Reading as a Cognitive and Metacognitive Process

Reading is a multidimensional process involving cognitive and metacognitive strategies. It requires the coordination of lower-level processes, such as word recognition or decoding meaning while the higher-level processes are the ability to infer, integrate, and evaluate (Perfetti & Stafura, 2014). Theories of

reading, such as the Interactive Model (Rumelhart, 1980) and Construction-Integration Model (Kintsch, 2013), explain how readers generate meaning through iterative cycles of hypothesis testing and verification.

In ESL and EFL contexts, learners often face additional cognitive challenges, such as limited vocabulary and restricted exposure to authentic texts (Ghazali *et al.*, 2009). These barriers increase the cognitive load during reading, thereby emphasising the need for metacognitive support. Through planning, monitoring, and evaluating strategies, readers can allocate mental resources efficiently, identify comprehension breakdowns, and apply repair strategies (Anderson, 2002; Mokhtari & Reichard, 2002).

Recent scholarship supports this dual-process perspective. Teng (2020) found that integrating metacognitive awareness training in reading classes improved comprehension scores among Chinese undergraduates. Similarly, Liu and Zhang (2022) reported that metacognitive awareness of reading strategies was a significant predictor of academic reading success among ESL learners in higher education.

Metacognitive strategies are often categorised into three major components namely, planning, monitoring, and evaluating (Jacobs & Paris, 1987).

- i) Planning strategies involve activities prior to reading, such as predicting text content, setting purposes, or identifying unfamiliar vocabulary. These actions activate prior knowledge and prepare the reader for comprehension (Kujawa & Huske, 1995).
- ii) Monitoring strategies occur during reading and include actions like highlighting keywords, questioning, and self-checking for understanding (Chamot *et al.*, 1999). Effective monitoring ensures comprehension continuity and prevents cognitive overload.
- iii) Evaluating strategies are post-reading activities that involve assessing comprehension, summarising main ideas, and reflecting on the success of reading strategies used (Ahmadi *et al.*, 2013).

Empirical research has demonstrated the value of explicit instruction in these metacognitive strategies. Mokhtari and Reichard's (2002) Metacognitive Awareness of Reading Strategies Inventory (MARSİ) remains widely used to measure learners' awareness of global, problem-solving, and support strategies. Studies using MARSİ have shown that high-performing readers use a wider range of strategies and regulate them more flexibly than lower-performing peers (Zhang & Seepho, 2013; Phan, 2020).

Recent findings extend these insights into digital and multimodal contexts. For example, Teng (2020) and Zhang and Wu (2022) revealed that learners applying metacognitive strategies in online reading environments achieved greater comprehension and retention. Likewise, Rahimi and Katal (2022) noted that metacognitive strategy training enhances learners' confidence and persistence, aligning with 21st-century learning skills.

METHODOLOGY

This study adopted a mixed-methods design integrating quantitative and qualitative approaches to investigate the impact of Metacognitive Strategies (MCS) on English reading comprehension among undergraduates at Universiti Malaysia Sarawak (UNIMAS). The combination of methods allows for a more comprehensive understanding of both the frequency and the nature of MCS use in authentic academic contexts (Creswell & Plano Clark, 2018).

The quantitative component employed a survey questionnaire to measure students' use of three key metacognitive strategies, namely planning, monitoring, and evaluating during reading. Meanwhile, the qualitative component consisted of semi-structured interviews to gain deeper insight into students' perceptions, experiences, and difficulties when applying these strategies. This design reflects a convergent parallel approach, in which both types of data were collected and analysed independently before being merged for interpretation (Creswell, 2014).

The study's conceptual framework was informed by Flavell's (1979) metacognitive theory, which identifies the processes of planning, monitoring, and evaluating as the core components of self-regulated learning. These components served as the main variables guiding instrument development, data collection, and analysis.

Data collection consisted of three main stages:

- i) **Preliminary Stage:** Ethical approval was obtained from the university's research committee, and permission was granted by the course coordinator. Participants were briefed about the purpose of the study and their rights, including anonymity and voluntary participation.
- ii) **Quantitative Stage:** The questionnaire was administered in class sessions. Respondents completed the forms individually, taking approximately 20 minutes.
- iii) **Qualitative Stage:** The five interviewees were contacted separately and interviewed in person in a quiet setting within the faculty building.

Participants

A total of 75 undergraduates enrolled in the English generic course participated as respondents. Participants were selected through purposive sampling, ensuring they met the criteria of being ESL learners with prior experience in reading academic texts in English. The demographic composition of participants were male and female students aged between 19 and 23 years, representing diverse ethnic and linguistic backgrounds typical of Malaysian higher education. Participation was voluntary, and all students provided informed consent before data collection.

Instruments

The primary instrument for quantitative data collection was a structured questionnaire adapted from Mokhtari and Reichard's (2002) Metacognitive Awareness of Reading Strategies Inventory (MARSİ). The instrument was modified to align with the study's objectives and local context, focusing specifically on three domains: Planning, Monitoring, and Evaluation. The final version of the questionnaire consisted of 30 items, each rated on a 5-point Likert scale ranging from 1 (never) to 5 (always). The questionnaire was divided into four sections: demographic information, planning, monitoring, and evaluating strategies. To ensure content validity, the instrument was reviewed by a panel of three experts. Feedback from these experts led to minor revisions in wording and structure to improve clarity and contextual appropriateness. A pilot study was conducted with 30 undergraduates from the same faculty who were not part of the main sample. Reliability analysis using SPSS version 27 yielded high internal consistency, with Cronbach's alpha coefficients (α) exceeding the minimum threshold of 0.70 for all three components (George & Mallery, 2003) as shown in Table 1.2 below. Specifically, alpha values were:

Table 1.2 The cronbach's alpha values for the pilot for each metacognitive strategy

METACOGNITIVE STRATEGY	ALPHA VALUES (α)
Planning strategies	.81
Monitoring strategies	.86
Evaluating strategies	.83

These results confirmed that the instrument was both valid and reliable for use in a research context.

Semi-Structured Interview

To complement the quantitative findings, semi-structured interviews were conducted with five selected participants from the main sample. These participants were chosen based on their varied responses in the questionnaire

to ensure diversity of perspectives. The interview protocol included open-ended questions designed to explore learners' personal experiences and difficulties in using planning, monitoring, and evaluating strategies while reading English texts. Sample questions included "How do you usually prepare before reading English texts?" "What strategies do you use to check your understanding while reading?", "What challenges do you face when evaluating your comprehension after reading?". Each interview lasted approximately 30–40 minutes and was audio-recorded with participants' consent. All interviews were later transcribed verbatim for analysis.

Data Analysis

Quantitative Analysis

Quantitative data from the questionnaires were analysed using descriptive statistics in SPSS version 27. Means and standard deviations were calculated to determine the overall level of strategy use among respondents for each metacognitive component of planning, monitoring, and evaluating. The interpretation of mean scores followed the standard classification proposed by Oxford (1990):

- 4.5–5.0 = Very High Use
- 3.5–4.4 = High Use
- 2.5–3.4 = Moderate Use
- 1.5–2.4 = Low Use
- 1.0–1.4 = Very Low Use

This analysis provided quantitative evidence of which strategies were most frequently applied during reading.

Qualitative Analysis

Interview transcripts were subjected to thematic analysis following Braun and Clarke's (2006) six-phase approach: (1) familiarisation with the data, (2) generating initial codes, (3) searching for themes, (4) reviewing themes, (5) defining and naming themes, and (6) producing the report. Three major thematic categories emerged, corresponding to the difficulties faced in each metacognitive stage:

- i) **Planning Difficulties:** Lack of focus, inadequate preparation time, and limited understanding of reading purpose.
- ii) **Monitoring Difficulties:** Struggles with deciding on suitable strategies and interpreting new lexical items.
- iii) **Evaluating Difficulties:** Challenges in self-assessment and identifying effective strategies for future reading.

The qualitative findings were later triangulated with quantitative data to provide a more holistic understanding of the metacognitive behaviours among the participants.

DISCUSSION

Quantitative Findings: Level of Metacognition Strategy Use

Descriptive statistical analyses of the questionnaire revealed that students demonstrated a high overall level of metacognitive strategy use, with mean scores exceeding 3.50 across all three components. However, the strategies differed in the degree of use as shown below in Table 1.3:

Table 1.3 Mean scores for each metacognitive strategy

STRATEGY	MEAN SCORE	LEVEL OF USE
Monitoring	3.92	High
Evaluating	3.87	High
Planning	3.63	High

These results indicate that monitoring strategies were most frequently applied, followed closely by evaluating strategies, while planning strategies were the least employed. This ranking suggests that students are relatively confident in regulating comprehension during reading but less strategic in preparing for reading tasks. Such findings are consistent with earlier research showing that ESL learners tend to engage in comprehension checks and self-correction more readily than in systematic pre-reading planning (Anderson, 2002; Zhang & Seepho, 2013).

The highest mean score ($M = 3.92$) for monitoring strategies indicates that UNIMAS undergraduates actively engage in self-checking and verification of comprehension during reading. The items in this cluster reflected practices such as checking from time to time for understanding, asking questions about progress, using appropriate techniques, and linking new information with prior knowledge. This finding aligns with Mokhtari and Reichard's (2002) observation that successful readers continuously monitor meaning construction and assess the logical coherence of texts. Similarly, Liu and Zhang (2022) confirmed that monitoring is the strongest predictor of reading comprehension in ESL settings, as it enables learners to detect confusion and apply repair strategies such as rereading or note-taking.

In this study, students' preference for monitoring may stem from the structure of academic tasks in university settings, which often emphasise comprehension questions, summaries, and critical responses; all of which require continuous evaluation during reading. Moreover, digital reading environments encourage readers to verify, highlight, and cross-check information, thereby reinforcing monitoring behaviour (Teng, 2020). However, while high monitoring scores suggest awareness, they do not necessarily indicate the accuracy of monitoring. Previous research cautions that learners may overestimate their comprehension or misinterpret cues (Schraw *et al.*, 2006). Therefore, further training in metacognitive calibration and accurately assessing what one knows and does not know.

The evaluating strategies recorded a mean score of 3.87, ranking second overall. This indicates that students often engage in post-reading reflection, such as judging whether goals are achieved, assessing the suitability of strategies, and considering how new knowledge applies to future learning. This tendency corresponds to the "self-evaluation" phase in Flavell's (1979) metacognitive framework, in which learners reflect on the effectiveness of their strategy use. Studies by Teng (2020) and Rahimi and Katal (2022) similarly observed that evaluation enhances long-term retention and transfer of reading skills.

The relatively high use of evaluation strategies among UNIMAS students could be influenced by the reflective practices embedded in tertiary learning, such as coursework journals and project-based assignments. However,

qualitative data revealed that while many students attempt to review their reading process, they often lack structured criteria for judging success. This reflects what Chamot (2004) termed "unfocused reflection", where learners engage in general contemplation but without targeted metacognitive outcomes.

Thus, while students recognise the value of evaluating comprehension, they may not yet possess the metacognitive precision needed to systematically analyse their performance or identify weaknesses. This underscores the need for guided post-reading reflection activities, such as written summaries or self-assessment checklists, to strengthen evaluative awareness.

Although the mean score for planning strategies ($M = 3.63$) still falls within the "high use" category, it represents the lowest among the three strategy types. This indicates that students engage less frequently in pre-reading activities such as setting reading goals, predicting text content, or activating prior knowledge. Such results echo earlier Malaysian studies (Lu, 2015; Halim *et al.*, 2020) that highlight the limited emphasis on pre-reading preparation in exam-oriented instruction. Many learners begin reading without identifying objectives or anticipating the text structure, which hinders efficient comprehension.

Planning is a critical metacognitive phase because it influences how readers allocate attention and cognitive resources. Effective planning helps activate relevant schemata, reducing cognitive load during reading (Kujawa & Huske, 1995). However, if learners fail to plan, comprehension becomes reactive rather than proactive. In this study, the lower use of planning strategies may also stem from misconceptions about reading as a linear task rather than a cyclical process. This finding suggests that instructors should model think-aloud planning routines such as predicting, skimming, or questioning to cultivate awareness of the mental preparation that precedes successful reading.

Problems in Using Metacognitive Strategies

Students expressed difficulty in maintaining focus during the pre-reading phase. Many reported that they often started reading immediately without setting goals or predicting content because they “just wanted to finish quickly” or “didn’t know how to plan before reading.” Three primary problems emerged:

- i) **Staying Focused:** Students struggled to sustain concentration when preparing to read, especially with lengthy or unfamiliar academic texts.

“Sometimes I just read straight away because I lose focus when trying to plan what to do.”

- ii) **Inadequate Reading Time:** Heavy academic workloads limited time for planning activities. Students viewed pre-reading as optional rather than an essential step.
- iii) **Lack of Contextual Understanding:** Some students found it difficult to anticipate meaning due to limited background knowledge or vocabulary gaps.

“When I don’t understand the topic, I can’t plan what to look for in the text.”

These findings align with prior research indicating that weak readers often lack pre-reading schemata to guide comprehension (Phakiti, 2003). Without clear goals or contextual awareness, learners fail to activate prior knowledge—one of the most powerful facilitators of comprehension (Kintsch, 2013).

Despite the high reported use of monitoring strategies, interview data revealed several difficulties in real-time comprehension control. The three most recurrent themes were:

- i) **Difficulty Deciding on a Strategy:** Students were uncertain which techniques to use when encountering comprehension breakdowns.

“Sometimes I don’t know if I should reread, use a dictionary, or just skip the word.”

- ii) **Challenges in Rereading:** Many found rereading exhausting or time-consuming, particularly for long academic passages.
- iii) **Difficulty with Lexical Items:** Unfamiliarity with vocabulary emerged as a major obstacle. Students reported frequent interruptions in comprehension due to unknown words.

“I get stuck when there are too many new words, and I stop reading to check meanings.”

These patterns confirm observations by Ghazali *et al.* (2009) and Djudin (2017) that limited vocabulary proficiency disrupts monitoring and the flow of comprehension. While students are aware that rereading or inferencing could help, they often lack the persistence or metacognitive control to apply these strategies effectively.

Furthermore, this difficulty reflects what Baker and Brown (1984) called “metacognitive knowledge deficiency”; a lack of understanding of how and when to use particular strategies. Training that incorporates explicit instruction and modelling can help students develop adaptive monitoring behaviours.

The evaluation phase presented fewer but significant issues. Students reported struggling to reinforce strategies and evaluate their comprehension outcomes. Two dominant themes emerged:

- i) **Reinforcement of Strategies:** Learners found it difficult to reapply successful strategies in future tasks.

“I can’t remember what worked last time, so every reading feels new.”

- ii) **Difficulty Evaluating Output:** Many students were unsure how to determine whether they had understood the text adequately.

"Even after reading, I don't know if my understanding is correct."

These findings echo those of Teng (2020), who found that students without explicit metacognitive training often fail to transfer or generalise effective strategies. They may engage in evaluation superficially, for example, focusing on task completion rather than comprehension quality. To address these challenges, structured post-reading reflection activities can be introduced, such as reading journals or metacognitive self-assessments that guide students to identify which strategies worked, which did not, and why.

When viewed together, the results reveal an interesting paradox. Quantitative data show that students report high use of all metacognitive strategies, yet qualitative data expose clear deficiencies in the depth and accuracy of their application. This pattern suggests that although learners recognise the importance of MCS, they may not use them effectively or consistently. This finding supports Anderson's (2002) assertion that awareness of strategies does not automatically translate into successful strategy use. Similarly, Zhang and Seepho (2013) argue that many ESL readers possess declarative knowledge (knowing about strategies) but lack procedural knowledge (knowing how to use them effectively).

The combination of findings highlights a developmental continuum:

- Learners are aware of metacognitive strategies (as reflected in high mean scores).
- They attempt to apply them (especially monitoring).
- But they struggle to sustain, evaluate, and transfer these strategies autonomously.

This reinforces the call for explicit metacognitive instruction, with teachers modelling planning, verbalising monitoring processes, and scaffolding reflective evaluation to build robust self-regulation in reading.

CONCLUSION

The results have both pedagogical and theoretical implications. Pedagogically, the study suggests the need for structured metacognitive strategy instruction within Malaysian university ESL courses. Teachers should integrate think-aloud sessions, guided questioning, and reflective journals to strengthen planning, monitoring, and evaluation cycles (Cohen, 2007; Teng, 2020).

From a theoretical perspective, the findings support Flavell's (1979) Metacognitive Learning Theory and its application to L2 reading. The cyclical relationship among planning, monitoring, and evaluation processes is evident: weaknesses in one phase (e.g., planning) affect performance in subsequent phases. The results also align with Bandura's (1986) concept of self-regulated learning, highlighting how learners' beliefs, cognitive control, and environmental factors interact to influence comprehension outcomes.

Furthermore, this study contributes to the ongoing discourse on metacognition in multilingual contexts. Malaysian learners operate in complex linguistic environments where English functions as a second language alongside strong mother-tongue influence. Their high awareness but uneven strategic control reflect the transitional nature of bilingual metacognition that students may possess cognitive resources from both L1 and L2 but lack metacognitive integration to optimise them.

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