Interplay Between Reading Strategies and Comprehension Challenges in Academic Reading: Insights from Indonesian EFL Learners

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Marcy Saartje Ferdinandus[1], Jamaludin Simantuak[1]
[1]University of Pattimura, Jalan Ir. M. Putuhena, Ambon 97233, Indonesia

Abstract

Reading academic texts in a second or foreign language involves substantial cognitive and linguistic demands, particularly for learners in English as a Foreign Language (EFL) contexts. Although various reading strategies, global, problem-solving, and support, have been widely theorized, their dynamic interaction with comprehension challenges remains underexplored, especially in Indonesian higher education. This study investigates the interplay between reading strategies and comprehension challenges among Indonesian EFL learners. Using a mixed-method design, 60 English Department students at Pattimura University were purposively selected. Quantitative data were collected through the Metacognitive Awareness of Reading Strategies Inventory (MARSI) and a researcher-developed Reading Comprehension Challenges Inventory, while qualitative data were obtained via semi-structured interviews with 10 participants. Quantitative results showed that global and problem-solving strategies were most frequently used, with their effectiveness varying by challenge type. Correlation and regression analyses revealed that global strategies aided conceptual connections, whereas problem-solving strategies addressed lexical and syntactic barriers. Thematic analysis showed that support strategies often failed with abstract concepts. These findings highlight an interactive, rather than linear, relationship between strategy use and comprehension challenges. The study contributes to applied linguistics by proposing a strategy–challenge interplay model and demonstrates the value of integrated methodological approaches for informing pedagogical practices in academic reading instruction.

INTRODUCTION

Reading academic texts in English for English as a Foreign Language (EFL) learners is one of the most challenging skills in second language acquisition (Goldenberg, 2020; Yapp et al., 2021). In the Indonesian academic context, English major students are often required to comprehend scholarly articles, international journals, and academic readings that contain complex syntactic structures, technical terminology, and abstract theoretical concepts (Hidayati & Santiana, 2020). These challenges are not merely linguistic but also involve cognitive and metacognitive abilities to manage strategic reading processes. In this regard, understanding how students employ reading strategies to navigate these challenges becomes a crucial area of inquiry (Souisa et al., 2020).

Various studies have shown that successful academic readers are not necessarily those with the widest vocabulary knowledge, but rather those who can control and monitor their

comprehension process (Huang & Jun Zhang, 2020; Turan & Akdag-Cimen, 2020; Xia et al., 2016). Reading strategies such as skimming, scanning, inferring meaning, and using semantic context have been identified as key tools to handle complex texts (Elaish et al., 2019). However, the effective use of these strategies depends largely on the reader's level of metacognitive awareness (Mahmoud, 2014; Mali, 2023). In practice, many Indonesian EFL students report being familiar with reading strategies, yet still struggle to comprehend academic content, particularly when faced with dense and structurally intricate discourse.

This reality illustrates a paradox in academic reading instruction in the Indonesian EFL context: strategies are taught and known, yet not always successfully applied to address actual comprehension difficulties. Previous research conducted across various Asian contexts, such as Le (2023) in China, Bui et al. (2023) in Thailand, and Sadoughi and Hejazi (2021) in Iran, has shown that reading strategies are often used mechanically, without a deep understanding of their functions in resolving specific comprehension problems. In Indonesia, studies by Putra and Musigrungsi (2022), Septiana (2020), and Shiddiq et al. (2023) indicate that students tend to rely on global strategies to grasp the main idea of a text but seldom connect them with linguistic challenges such as syntactic difficulty or logical relationships between ideas.

A number of previous studies have also highlighted the link between reading strategies and metacognitive awareness in academic text comprehension. For instance, Deliany and Cahyono (2020) and Ondé et al. (2022), through the development of the Metacognitive Awareness of Reading Strategies Inventory (MARSI), found that efficient readers tend to adjust their strategies based on reading purposes and text characteristics. Kazi et al. (2020) further argued that awareness of when and how to use a strategy is a key indicator of proficient readers. Conversely, Chaves-Yuste and de-la Peña (2023) and Usman et al. (2022) revealed that most EFL students tend to overuse strategies without considering their effectiveness in addressing specific comprehension challenges. Similarly, Mubarok and Budiono (2022) and Suhirman and Rahayu (2021) found that many students rely heavily on literal translation strategies, which often fail to help them grasp theoretical or argumentative content in complex academic discourse.

Apart from strategic factors, comprehension challenges also stem from the linguistic features inherent in academic texts. Dardjito et al. (2023) and Lumaela and Que (2021) observed that academic texts are lexically dense, containing numerous nominalizations and lexical bundles that are difficult for non-native readers to process. Studies by Ramadhianti and Somba (2023) and Wenno et al. (2021) revealed that EFL students often fail to recognize coherence and cohesion across sentences because they are not accustomed to identifying discourse markers. Research in Indonesia by Anwar and Sailuddin (2022) and Litualy and Serpara (2021) further demonstrated that even readers with a high vocabulary range encounter difficulties when dealing with complex syntactic structures or when the main idea is distributed implicitly across multiple paragraphs. Hence, reading difficulties arise not only from the text itself but also from the interaction between linguistic knowledge, cognitive strategies, and readers' metacognitive awareness.

Research combining the perspectives of reading strategies and comprehension challenges remains relatively scarce in Indonesia. Most studies focus on one aspect in isolation, either emphasizing strategies without linking them to specific difficulties or describing linguistic challenges without exploring how strategies are applied to overcome them (Nanda & Azmy, 2020; Sarah, 2022). In reality, these two aspects interact dynamically during reading. For example, a student might use inference strategies to guess the meaning of an unfamiliar word, yet the success of this strategy largely depends on the syntactic complexity of the sentence containing the word. Such interrelationships are rarely addressed empirically, though they are central to understanding academic reading processes.

In recent years, several attempts have been made to explore the reciprocal relationship between strategies and comprehension challenges. Annury et al. (2019) and Manuputty (2022) introduced the concept of the "interplay" between cognitive and metacognitive strategies in academic reading, emphasizing the importance of viewing reading as a dynamic rather than a linear process. However, these studies did not explicitly connect specific types of strategies with specific comprehension difficulties. Meanwhile, Hamiddin and Saukah (2020), Tableessy and Umkeketony (2022), and Wijaya (2021) showed that readers who rely on global strategies tend to perform better in handling complex ideas but are less effective in dealing with vocabulary or syntactic challenges. In Indonesia, this integrative approach has rarely been applied systematically to understand the dynamics between the two elements.

This situation reveals a gap in the literature: the dynamic relationship between reading strategies and comprehension challenges remains insufficiently understood in the Indonesian EFL context. Many studies stop at statistically describing the frequency of strategy use without examining how these strategies function in actual reading situations. Few have employed mixed-method approaches to capture the complexity between quantitatively measurable reading behaviors and the qualitatively rich experiences of readers. Yet, a deeper understanding of the interplay between strategies and challenges could pave the way for pedagogical innovations grounded in learners' actual needs.

In this context, the present study aims to fill this gap by examining the interconnection between reading strategies and comprehension challenges among Indonesian EFL students when reading academic texts. The approach adopted seeks not only to map out the types of strategies and difficulties but also to understand how they interact during reading. Through a combination of quantitative and qualitative data, this study seeks to capture the dynamic use of strategies in addressing specific problems, whether certain strategies truly help students overcome particular obstacles, or prove ineffective due to mismatches between strategy types and linguistic challenges.

More broadly, this study offers a new perspective in applied linguistics and language education by viewing academic reading not as a static activity but as an adaptive process in which strategies and challenges mutually shape one another. This approach opens the possibility of developing a new conceptual model for understanding how reading strategies function within the EFL context while also providing practical insights for designing process-

oriented academic reading instruction. Through this research, it is expected that a more comprehensive understanding can be formulated regarding how Indonesian university students construct meaning from academic English texts and how their strategies can be directed toward becoming more effective and reflective in enhancing academic literacy competence.

RESEARCH METHOD

This study ensured that participants possessed sufficient academic reading experience to reflect meaningfully on their strategies and comprehension difficulties. From the total sample, ten students were selected for in-depth interviews based on variations in questionnaire results, specifically, those showing notable differences in strategy use frequency and the level of challenges encountered. This selection allowed the interviews to capture diverse perspectives and experiences among students with different reading profiles.

Data collection proceeded through three interrelated stages. The first stage involved the administration of the Metacognitive Awareness of Reading Strategies Inventory (MARSI) (Annury et al., 2019; Hamiddin & Saukah, 2020). This instrument, internationally validated, measures awareness and frequency of use across three categories of reading strategies: global strategies, problem-solving strategies, and support strategies. Each statement was rated on a five-point Likert scale ranging from "never" to "always used."

The second stage involved an additional researcher-developed questionnaire, the Reading Comprehension Challenges Inventory, designed to identify comprehension difficulties encountered by students. This instrument covered aspects such as academic vocabulary, complex syntactic structures, abstract theoretical ideas, and logical relations across text segments. The questionnaire was piloted with ten students to ensure content validity and clarity of items.

The third stage consisted of semi-structured, in-depth interviews aimed at exploring students' actual experiences in relating their reading strategies to specific comprehension challenges. Semi-structured interviews were chosen for their balance between systematic guidance and exploratory flexibility (Haven & Grootel, 2019; Stanley, 2023). The interviews were conducted face-to-face and lasted between 45 and 60 minutes per respondent. Questions focused on how students selected particular strategies when encountering difficulties with vocabulary, sentence structures, or complex concepts, and how effective they perceived those strategies to be. All interviews were audio-recorded with participant consent and transcribed verbatim for subsequent analysis.

Data analysis was carried out in two stages. Quantitative data were analyzed using descriptive statistics to depict the frequency of reading strategy use and the most common comprehension challenges. Additionally, Pearson correlation analyses were conducted to examine relationships between strategy use and types of difficulties, followed by simple linear regression to identify which strategies most strongly influenced specific types of challenges. Qualitative data were analyzed thematically (Gephart, 2018; Wiesner, 2022), involving steps of identifying meaning patterns, initial coding, theme categorization, and thematic

interpretation related to the interaction between strategies and comprehension challenges.

To ensure trustworthiness, the study employed both methodological and source triangulation (Maher & Dertadian, 2018). Methodological triangulation involved comparing questionnaire results (quantitative data) with interview findings (qualitative data) to assess consistency between self-reported behavior and students' reflective accounts. Source triangulation compared interview results from participants with different strategy profiles and ability levels, enabling a more comprehensive understanding of how reading strategies operate across varied contexts. Furthermore, member checking was conducted by asking several participants to review interview summaries to verify that the researcher's interpretations accurately represented their original experiences.

RESULTS AND DISCUSSION

Profile of Indonesian EFL Students' Reading Strategies

This section provides an in-depth account of the reading strategy profiles of Indonesian EFL students, based on quantitative and qualitative data obtained from research conducted in the English Department of Pattimura University. Quantitative data were collected through the Metacognitive Awareness of Reading Strategies Inventory (MARSI), and further enriched by in-depth interviews and field observations of students' reading behaviors when dealing with English academic texts. The primary aim of this section is to describe the dominant patterns of reading strategy use while also exploring the sociolinguistic and cognitive contexts underlying those patterns.

Overall, the descriptive results indicate that Indonesian students tend to employ two main categories of strategies, global reading strategies and problem-solving strategies, far more frequently than support strategies. This finding suggests that students have progressed beyond the beginner level toward becoming semi-skilled readers who attempt to monitor their reading processes more consciously. However, as Par (2020) pointed out, the frequency of strategy use does not always correlate with depth of comprehension; in many cases, strategies are employed mechanically without sufficient metacognitive reflection.

Table 1 shows a relatively consistent pattern: most students (around 70–80%) "always" or "usually" use strategies related to previewing, predicting, inferencing, and rereading. These four strategies constitute the core of their academic reading practice. In interviews, several students mentioned that before reading academic articles, they "first look at the abstract and conclusion to get an idea of what it's about", a practice consistent with previewing strategies (Ismail & Edi, 2022; Setiawati & Budiasih, 2022). However, deeper probing revealed that this behavior was often driven by pragmatic reasons, such as saving time or meeting assignment deadlines, rather than reflective strategic awareness.

Field observations in reading rooms and reading comprehension classes showed that students tended to hold a highlighter or pen to mark difficult words while simultaneously using a digital dictionary app on their phones. This activity often occurred rapidly, without reflective pauses to interpret contextual meaning. One instructor of Academic Reading noted that most students "race to find word-by-word meanings instead of understanding the

relationships among ideas." This phenomenon illustrates the tendency to use problem-solving strategies, such as rereading, adjusting reading speed, and using context clues, without strong metacognitive monitoring (Febriani et al., 2019).

Table 1 Descriptive Statistics of Global Reading Strategy Usage

No	Main Indicator	Always (%)	Usually (%)	Sometimes (%)	Occasionally (%)
1	Reading with a clear purpose	29.1	41.0	25.0	2.1
2	Thinking about what to read beforehand	27.1	43.7	21.1	2.1
3	Taking an overall view of the text	12.5	27.1	47.1	16.6
4	Relating content to purpose	18.7	41.6	27.1	12.5
5	Previewing the text before reading	14.5	16.6	48.8	22.1
6	Deciding what to read closely or skip	23.0	27.1	35.4	14.5
7	Using tables, figures, pictures	23.0	18.7	39.5	14.5
8	Using context clues	8.3	33.1	48.0	10.5
9	Using typographical cues	10.4	27.1	41.6	18.7
10	Critically analyzing information	12.5	39.5	35.4	12.5
11	Checking understanding when reading	27.1	58.3	10.4	4.1
12	Predicting text content	35.4	45.8	14.5	4.1
13	Verifying predictions	33.3	29.1	29.1	8.3

Source: Research data analysis, 2023

Conceptually, the dominance of global and problem-solving strategies among Indonesian students can be understood as a reflection of the cognitive transition experienced by readers adapting to academic texts in a foreign language. Isma and Nur (2023) describe this phase as strategic emergence, in which readers begin to recognize the importance of controlling cognitive processes during reading but have not yet mastered how to align strategies with specific comprehension goals. Students in this study exhibited these symptoms: they knew that predicting or rereading could help understanding, but had not yet learned when such strategies would be most effective.

Interviews with several informants also reinforced this finding. One student, RM, stated that he often guessed paragraph meaning by reading the first and last sentences but would immediately consult a dictionary if the paragraph was "too academic." Another, DS, said she typically read the abstract and conclusion first because "those are the important parts for assignments." These statements depict efficient yet shallow reading behaviors, where strategies are used to navigate the text rather than to construct deep comprehension.

This condition cannot be separated from the multilingual and socio-academic context of Indonesian students. As noted by A. Hakim et al. (2022) and Rusgandi (2023), many Indonesian EFL learners have limited academic vocabulary and are accustomed to literal,

translation-based reading approaches. Consequently, strategies such as rereading or using context clues are often applied not to infer conceptual meaning but to verify word-by-word translations. This phenomenon shows that reading strategies in the Indonesian context frequently function as linguistic compensation tools rather than as genuine metacognitive monitoring mechanisms.

From a cognitive standpoint, these findings highlight that the frequency of strategy use cannot be taken as a reliable indicator of reading proficiency. As Nurkamto et al. (2021) argue, expert readers do not merely use more strategies; they adapt them flexibly according to text demands and communicative purposes. In this study, Indonesian EFL students had not yet achieved such flexibility. They could apply key strategies but tended to do so uniformly, without modification based on text type or encountered difficulty.

Mapping Reading Comprehension Challenges in Academic Texts

This section provides a detailed analysis of the comprehension challenges faced by Indonesian EFL students when reading academic English texts. Based on the results of the Reading Comprehension Challenges Inventory administered to 60 students in the English Department of Pattimura University, four main categories of reading difficulties were identified: a) limited academic vocabulary; b) complex syntactic structures; c) abstract ideas and theoretical concepts requiring higher inferential reasoning, and; d) difficulty connecting ideas across paragraphs. These four dimensions are interrelated and contribute to increased cognitive load in reading, consistent with Cognitive Load Theory in L2 reading, which posits that the greater the linguistic burden, the less cognitive capacity remains for constructing deeper conceptual meaning(Hezam et al., 2022).

The quantitative results reveal a rather striking distribution. Of all respondents, more than 78% reported frequently experiencing difficulties in understanding academic vocabulary that rarely appears outside classroom contexts. Meanwhile, 65% of respondents indicated confusion when encountering long sentences containing multiple subordinate clauses, and 71% admitted struggling to comprehend abstract or theoretical ideas that require inferential reasoning. Another 58% mentioned difficulty in connecting ideas across paragraphs as a barrier that caused them to lose track of the author's line of argument. The following table presents a summary of these quantitative findings.

Table 2 shows that the primary difficulties lie in linguistic dimensions (vocabulary and syntax) and conceptual dimensions (idea abstraction and inter-idea connection). In other words, students face dual challenges: limited linguistic competence and limited cognitive capacity to interpret complex ideas in academic texts. This aligns with Ahmed (2021), who emphasized that cognitive load in L2 reading arises not only from text complexity but also from mismatches between readers' linguistic competence and the conceptual demands of the text.

Table 2 Percentage of Reading Comprehension Challenges among Indonesian EFL Students

No	Type of Comprehension Challenge	Often Experienced (%)	Sometimes Experienced (%)	Rarely Experienced (%)
1	Unfamiliar academic vocabulary	78.3	18.4	3.3
2	Complex syntactic structures (subordinate clauses)	65.0	27.0	8.0
3	Abstract ideas and concepts (high inference)	71.6	21.6	6.8
4	Connecting ideas across paragraphs	58.3	30.0	11.7

Source: Research data analysis, 2023

In-depth interviews offered a more tangible picture of these experiences. One informant, MT, reported often stopping mid-text because "there are too many words I don't know," particularly academic terms not found in general dictionaries. Another, SL, explained that although she could translate word by word, she still struggled to grasp the overall sentence meaning, especially when dealing with multi-clause sentences such as "Although previous studies have demonstrated... which may, in turn, affect..." This reflects syntactic overload, where readers lose the main sentence focus due to the hierarchical processing required by complex structures.

Field observations during reading sessions corroborated these findings. Students were often seen highlighting long sentences and breaking them into small fragments for literal translation. In one observed case, a student wrote translations above each line of text while expressing frustration that "the sentence goes in circles." Such behavior demonstrates surface decoding rather than conceptual integration, that is, understanding the surface structure without connecting meanings across sentence parts. This finding aligns with Yasin and Shah (2019), who argued that L2 readers often become trapped in local-level processing, sacrificing global textual coherence.

The third dimension, difficulty understanding abstract ideas and concepts, was also dominant. Many students reported feeling they "lacked sufficient background knowledge" to comprehend academic terminology or theoretical discussions. Informant AR stated that when reading a linguistics article on cognitive processing, she felt "blank" despite having translated every sentence. This indicates limited schema activation, the ability to connect new knowledge to existing cognitive structures (Anwar & Sailuddin, 2022; Kazi et al., 2020). Under such conditions, cognitive load increases because readers must simultaneously construct meaning and interpret unfamiliar concepts.

Meanwhile, the fourth challenge, difficulty in connecting ideas across paragraphs, appeared more subtle but significantly affected global comprehension. In interviews, HN revealed that "sometimes I understand each paragraph, but I don't know how one connects to another." This reflects weak awareness of discourse markers (e.g., however, therefore, on the other hand) and cohesive ties such as pronominal references or idea repetition. In Indonesian EFL classrooms, teaching tends to focus on vocabulary and grammar, while

discourse-level features of cohesion and coherence are often neglected (Ahmed, 2021; Hezam et al., 2022). Consequently, students may comprehend micro-level elements but fail to grasp macro-level text structure.

This trend was further confirmed through classroom observation. In one reading comprehension class, students were asked to explain the relationship between two paragraphs in an academic article. Most responses described literal content without mentioning logical relations such as cause-effect or comparison. This illustrates that their reading strategies remain linguistically focused rather than discourse-oriented. Hamiddin and Saukah (2020) and Par (2020) referred to this as the local trap, a condition in which readers understand textual fragments separately but fail to construct an integrated meaning structure across the text.

Interplay between Reading Strategies and Comprehension Challenges

The relationship between reading strategies and comprehension challenges among Indonesian EFL university students reveals a dynamic that is not linear but adaptive and situational. Based on correlation and regression analyses, it was found that global strategies have a significant positive relationship with the ability to manage complex ideas and build connections across concepts, while problem-solving strategies are more effective in addressing linguistic difficulties, particularly with complex vocabulary and syntax. Conversely, support strategies, such as dictionary use, literal translation, and note-taking, showed no significant correlation with improved comprehension of abstract ideas in academic texts. These findings reinforce the Interactive Compensatory Model of Reading proposed by Hezam et al. (2022), which asserts that when one source of information is insufficient, for instance, lexical understanding, readers tend to rely on other strategies, such as inference or adjusting reading speed, to compensate for the deficiency.

Quantitatively, results from the MARSI questionnaire indicate a pattern of strategy selection that reflects students' efforts to adapt to the demands of academic texts. The following table presents the relationship between reading strategies and the types of comprehension difficulties most frequently reported by students.

Table 3 Relationship between Reading Strategies and Types of Comprehension Difficulties

Reading Strategy Type	Type of Challenge Addressed	Correlation to Comprehension (r)	Observed Effectiveness
Global Strategy	Complex ideas and inter-paragraph connections	0.61	High
Problem-Solving Strategy	Difficult vocabulary and complex sentence structures	0.55	Moderate–High
Support Strategy	Literal translation and note-taking	0.12	Low

Source: Research analysis, 2023

The table above indicates that the use of global strategies is closely associated with students' success in understanding logical relationships between ideas. This was also evident

during library observations, where several students were seen taking notes on the main points of each paragraph and later reorganizing them into conceptual outlines. For instance, one student highlighted topic sentences and rewrote the relationships between ideas in the form of a simple concept map in their notebook. Such activities demonstrate conscious efforts to regulate cognitive processes during reading, a form of metacognitive awareness that characterizes semi-skilled readers (Ahmed, 2021).

However, not all students were able to adapt their strategies effectively to the types of difficulties they encountered. In an in-depth interview, an informant referred to as Ls explained that when reading linguistics articles filled with technical terminology, she tended to reread sections multiple times until the meaning "made sense," without fully realizing why certain parts were difficult to grasp. She admitted to frequently using a digital dictionary for word-by-word translation, yet this often caused her to lose focus on the flow of ideas. This phenomenon aligns with Wijaya (2021), who argues that support strategies are often employed mechanically without genuine strategic awareness, thus failing to improve comprehension in a substantive way.

This tendency was also observed during classroom sessions of Academic Reading courses in the fifth semester. When the instructor assigned a text on Language Policy and Multilingualism, most students opened translation apps on their phones, while others engaged in brief discussions to infer the meaning of certain paragraphs. In some cases, such spontaneous collaborative strategies resulted in deeper comprehension than dictionary use. Observation notes indicated that students who discussed the argumentative structure of the text were quicker to grasp the author's stance and logic. This supports A. Hakim et al. (2022), who argue that reading is not a linear process that merely moves from word recognition to meaning construction, but a complex interaction among strategy, context, and reader experience.

In terms of problem-solving strategies, data show that rereading, inferencing, and adjusting reading speed were the most frequently used. Approximately 60.4% of students reported always rereading when the text felt difficult, and 45.8% said they adjusted their reading speed depending on text difficulty. In an interview, a student referred to as Rn explained that she often slowed down when encountering technical terms or sentences with multiple subordinate clauses, stating, "When I read too fast, it feels like the author's ideas slip away from my mind," making rereading an integral part of her reading routine. This statement illustrates the application of self-monitoring in reading, in which readers actively evaluate their comprehension and adjust strategies as needed (Hezam et al., 2022; Nurkamto et al., 2021).

Nevertheless, rereading also has its limitations. Based on observations of independent study activities in the library, many students spent long periods on a single article, repeatedly reading the same sentences without attempting to derive meaning from context. In such cases, rereading became mechanical rather than reflective. This aligns with Annury et al. (2019) and Nanda and Azmy (2020), who, drawing on Cognitive Load Theory, argue that when linguistic load is too high, due to unfamiliar academic vocabulary or complex syntax, working

memory capacity becomes constrained, making it difficult for readers to move from surface-level processing to meaningful comprehension.

Meanwhile, global strategies proved crucial in helping students navigate complex ideas within academic texts. Students who habitually engaged in previewing or predicting before reading tended to anticipate the text's content and prepare a conceptual schema. In an interview, a senior student, Yd, explained that before reading journal articles, she always examined the abstract and subheadings to understand the author's argument structure. She noted that this approach made her reading process more efficient because "not all sections need to be read with the same intensity." This finding indicates the effective use of selective strategies, in which readers allocate their focus and cognitive resources according to information relevance.

Conversely, support strategies, particularly direct translation and literal note-taking, showed limited effectiveness in improving comprehension. Although 41.6% of students reported consistently translating texts into Indonesian, comprehension test results revealed no significant improvement compared to those who used contextual inference. This reinforces the argument that literal translation can hinder language automatization and reduce the reader's ability to process meaning holistically (Hamiddin & Saukah, 2020; Par, 2020).

Pedagogical Implications: From Frequency to Function

The pedagogical implications of this study mark a fundamental shift in the orientation of reading strategy instruction within Indonesia's English as a Foreign Language (EFL) context. Whereas previous approaches tended to emphasize the frequency of strategy use, how often students engaged in previewing, predicting, inferencing, or rereading, these findings underscore the need for a paradigm shift toward functional understanding: focusing not on "how often" strategies are used, but on "why" and "when" they are relevant and effective for comprehension. This new paradigm aligns with the concept of function-based strategy instruction, which places metacognitive awareness at the core of academic reading competence.

In classroom practice, many instructors of Academic Reading or Critical Reading still emphasize strategy checklists, such as asking students to highlight text sections or note when they made predictions about content. As seen in field observations at a public university in Maluku, instruction remained largely linear and procedural. The lecturer introduced strategies, and students applied them in exercises without reflecting on their effectiveness. When the lecturer asked, "Who used inferencing in this text?", most students raised their hands, but when prompted further, "What made that strategy helpful?", the classroom fell silent. This situation shows that students often use strategies as academic rituals rather than reflective tools for comprehension enhancement.

Interviews with several students supported this observation. One informant, referred to as N.R., stated that she "always used the rereading strategy when encountering difficult texts but sometimes still couldn't understand." This statement illustrates high-frequency but low-functionality strategy use, students apply rereading as an automatic reaction rather than

understanding its role in deepening interpretation or connecting textual information. This finding aligns with Ramadhianti and Somba (2023), who argue that semi-skilled L2 readers often "manage the reading process mechanically without deep metastrategic understanding." In this sense, frequency is not an indicator of proficiency but rather a reflection of procedural habit.

Table 4 Comparison between Frequency-Based and Function-Based Approaches to Reading Strategy Instruction

Teaching Aspect	Frequency-Based Approach	Function-Based Approach
Primary focus	How often strategies are used	Why and when strategies are used
Learning goal	Increasing the number of strategies mastered	Aligning strategy use with text challenges
Student role	Passive strategy user	Reflective and adaptive reader
Evaluation	Strategy-use checklist	Assessment of strategy effectiveness in context
Learning outcome	Procedural mastery	Metacognitive awareness and strategy transfer

Source: Research analysis, 2023

In implementation, this paradigm shift requires a transformation in the instructor's role. Lecturers should move beyond merely introducing strategies to becoming learning facilitators who guide students to evaluate strategy functionality within specific reading contexts. For example, when students face academic texts with multiple embedded clauses, lecturers may prompt reflection with open-ended questions such as, "Does skimming help you grasp the argument structure here?" or "What happens to your understanding when you use inference strategies?" Such an approach not only fosters metacognitive awareness but also cultivates self-regulated reading behavior, as described by Deliany and Cahyono (2020) in the MARSI framework.

Follow-up observations in Critical Reading II classes revealed intriguing dynamics when lecturers integrated strategy reflection into group reading activities. In one session, students compared the effectiveness of two strategies while reading the same academic article. Some found that predicting worked better for narrative academic texts like case studies, whereas rereading was more helpful for argumentative texts with complex cause-effect structures. Such activities illustrate that functional awareness can be built through experiential exploration rather than theoretical explanation alone.

In an in-depth interview, another student, F.L., admitted that she only realized the difference between "using" and "understanding the function of" a strategy after participating in this reflective session. She explained that she previously used highlighting merely to mark important sentences, but later realized that it was more effective when combined with summarizing to internalize meaning. Such findings affirm Setiawati and Budiasih (2022), who argue that cross-context strategy transfer is possible only when students can evaluate a strategy's function in relation to text demands and reading purposes.

It is also important to note that within Indonesia's EFL context, the broader academic culture influences how students perceive strategies. A learning tradition centered on compliance with teacher instructions often leads students to treat reading strategies as task requirements rather than cognitive tools. In several observations, students only engaged in strategic reflection after being asked to write reading journals about their experiences with particular strategies. Although simple, such reflective activities help students develop the awareness that strategies are not universal, their effectiveness depends on text type, reading purpose, and cognitive load.

This context further reinforces the close relationship between reading strategies and Cognitive Load Theory in L2 Reading (Hezam et al., 2022). When students fail to align strategies with specific linguistic or cognitive challenges, working memory load increases and comprehension declines. Therefore, function-based instruction must be accompanied by explicit training on how to reduce cognitive load through appropriate strategy selection. For instance, lecturers can teach students to break down long sentences into smaller meaning units to facilitate information processing before applying inferencing strategies.

Strategy–Challenge Interplay: Integrating Cognitive, Linguistic, and Pedagogical Dimensions

The interplay between reading strategies and comprehension challenges among EFL students cannot be viewed as two separate domains; rather, it represents a field of interaction in which cognitive, linguistic, and pedagogical dimensions are interwoven and mutually influential. Our quantitative findings, that global strategies are strongly correlated with the ability to manage complex ideas and inter-idea connections, that problem-solving strategies are more effective in addressing lexical and syntactic difficulties, and that support strategies are relatively weak in handling abstract concepts, serve as an entry point for understanding how these three dimensions operate in conjunction. Cognitively, the choice and effectiveness of strategies are heavily influenced by working memory capacity and the cognitive load imposed by the text. When a student slows down or rereads (as frequently noted by informant Rn), such behavior represents a direct cognitive response to reduce processing errors: rereading functions as an effort to stabilize meaning within working memory. However, when linguistic load, such as chains of technical terms or embedded clauses, is excessively high, rereading alone often proves insufficient; the capacity to construct conceptual representations is diminished (A. Hakim et al., 2022; Rusgandi, 2023). Field observations in reading rooms revealed students repeatedly rereading a single paragraph while writing word-by-word translations, an indicator of intense cognitive effort that often remains limited to local processing, thereby constraining their ability to integrate higher-level ideas.

From a linguistic perspective, vocabulary and syntactic challenges serve as "gateways" determining whether readers can successfully access the propositional meaning of the text. Our data show that more than half of the respondents frequently encountered unfamiliar academic terms and struggled with complex clause structures. Informant MT described this phenomenon: she often paused because "there were too many words I didn't know," relying instead on literal translation, a practice that, while providing immediate definitions, often

disrupts discourse cohesion, making it difficult to reconstruct global ideas. Classroom observations confirmed this pattern: students marked difficult words, opened digital dictionaries, but rarely spent time examining how those words functioned within sentence structures or how discourse markers established logical relationships between clauses. Thus, problem-solving strategies such as inferring meaning from context or adjusting reading speed are effective in addressing lexical-syntactic obstacles when readers possess sufficient background knowledge; however, these same strategies lose their function when background knowledge is limited or when pedagogical instruction fails to teach how to use context for inference (Souisa et al., 2020).

The pedagogical dimension serves as a critical link between cognitive capacity and linguistic demands. When instructional approaches emphasize quantity (how often a strategy is used) rather than function (why and when a strategy is effective), students tend to internalize strategies as operational routines rather than as tools of cognitive regulation. Interviews with NR and FL reveal a key transition: several students initially employed highlighting or translation by default, but after engaging in reflective activities, such as comparing the effectiveness of strategies in small groups, they began to understand that predicting is more useful for thematically structured texts, while rereading is beneficial when the reading goal requires verification of details. The metacognitive strategy transfer approach emphasized by Annury et al. (2019) underscores that awareness of a strategy's function is a prerequisite for transferring it across reading contexts; without reflection and guided learning, strategies remain mechanical procedures with limited adaptability.

The integration of these three dimensions generates a dynamic and situational picture of interplay: readers select strategies in response to linguistic demands and available cognitive resources, choices that are themselves shaped by the quality of instruction they have received. For example, students who regularly engage in previewing (such as Yd) can lower intrinsic cognitive load by activating schemata prior to reading, thereby freeing cognitive resources for the comprehension of abstract ideas. This pattern illustrates how simple pedagogical interventions (such as structured pre-reading exercises) can recalibrate the cognitive–linguistic balance toward deeper understanding. Conversely, using a dictionary as a support strategy, when not accompanied by integrative tasks (for instance, asking students to explain a term's role in the author's argument), tends to facilitate only lexical decoding without engaging discourse cohesion, explaining why the correlation between support strategies and the comprehension of abstract ideas is weak.

Interplay is thus not merely a statistical correlation but a process of strategic negotiation: readers must decide when to employ problem-solving strategies to overcome lexical or structural barriers, when to activate global strategies to construct meaning frameworks, and when to refrain from overusing support strategies that may disrupt cognitive flow. Effective instruction, therefore, is that which cultivates students' metacognitive capacity, teaching them not only techniques but also criteria for selecting and evaluating strategies based on the type of challenge encountered. Classroom observations suggest that activities such as strategy comparison, think-aloud exercises, and guided

reflection help readers explicitly perceive the function of strategies, thereby fostering adaptive flexibility.

CONCLUSION

This study affirms that the relationship between reading strategies and comprehension challenges among Indonesian EFL students is interactive and contextual rather than linear, as is often assumed in academic reading instruction. While global and problem-solving strategies are frequently employed, their effectiveness depends on functional alignment with the types of linguistic and cognitive challenges faced. When strategies are consciously selected based on function, rather than habit or academic expectation, readers' capacity to construct conceptual meaning increases significantly. These findings indicate that successful academic reading depends not on the frequency of strategy use but on how readers integrate metacognitive awareness, cognitive flexibility, and linguistic sensitivity within their comprehension processes. Theoretically, this study proposes a strategy–challenge interplay model that connects cognitive, linguistic, and pedagogical dimensions within a unified conceptual framework. Practically, it underscores the need for a pedagogical paradigm shift from frequency-based toward function-based approaches, ones that nurture reflection, adaptability, and strategic autonomy among EFL readers in Indonesia's higher education context.

ETHICAL STATEMENT AND DISCLOSURE

REFERENCES

A Hakim, I., Tanuatmadja, A. P., & Hodairiyah. (2022). Dealing with Common Challenges in Improving Reading Comprehension Skills for Indonesian Secondary School Students. *ELS Journal on Interdisciplinary Studies in Humanities*, *5*(2), 255–264. https://doi.org/10.34050/elsjish.v5i2.21042

Ahmed, W. M. A. (2021). Exploring EFL university learners' acquisition of advanced reading skills in the Yemeni context. *Indonesian Journal of Applied Linguistics*, *10*(3), 771–781. https://doi.org/10.17509/ijal.v10i3.31765

Annury, M. N., Mujiyanto, J., Saleh, M., & Sutopo, D. (2019). The Use of Metacognitive Strategies in EFL Reading Comprehension. *Proceedings of the First International*

Conference on Administration Science (ICAS 2019), 62–66. https://doi.org/10.2991/icas-19.2019.13

Anwar, I. W., & Sailuddin, S. P. (2022). Academic Reading Difficulties in Higher Education. *Journal of Languages and Language Teaching*, *10*(2), 309–320. https://doi.org/10.33394/jollt.v10i2.4849

Bui, H. P., Nguyen, L. T., & Nguyen, T. V. (2023). An investigation into EFL pre-service teachers' academic writing strategies. *Heliyon*, *9*(3), e13743. https://doi.org/10.1016/j.heliyon.2023.e13743

Chaves-Yuste, B., & de-la Peña, C. (2023). Podcasts' effects on the EFL classroom: a socially relevant intervention. *Smart Learning Environments*, *10*(1), 20. https://doi.org/10.1186/s40561-023-00241-1

Dardjito, H., Rolls, N., Setiawan, A., & Sumekto, D. R. (2023). Challenges in reading English academic texts for non-English major students of an Indonesian university. *Studies in English Language and Education*, *10*(3), 1290–1308. https://doi.org/10.24815/siele.v10i3.29067

Deliany, Z., & Cahyono, B. Y. (2020). Metacognitive reading strategies awareness and metacognitive reading strategies use of EFL university students across gender. *Studies in English Language and Education*, *7*(2), 421–437. https://doi.org/10.24815/siele.v7i2.17026

Elaish, M. M., Shuib, L., Ghani, N. A., & Yadegaridehkordi, E. (2019). Mobile English Language Learning (MELL): a literature review. *Educational Review*, *71*(2), 257–276. https://doi.org/10.1080/00131911.2017.1382445

Febriani, D., Elfrida, E., & Jayanti, F. G. (2019). Reading Comprehension Problems in the Reading Section of the TOEFL Test. *JALL (Journal of Applied Linguistics and Literacy)*, *3*(2), 86–99. https://doi.org/10.25157/jall.v3i2.2537

Gephart, R. P. (2018). Qualitative Research as Interpretive Social Science. In *The SAGE Handbook of Qualitative Business and Management Research Methods: History and Traditions* (pp. 33–53). SAGE Publications Ltd. https://doi.org/10.4135/9781526430212.n3

Goldenberg, C. (2020). Reading Wars, Reading Science, and English Learners. *Reading Research Quarterly*, *55*(S1), 131–144. https://doi.org/10.1002/rrq.340

Hamiddin, H., & Saukah, A. (2020). Investigating metacognitive knowledge in reading comprehension: The case of Indonesian undergraduate students. *Indonesian Journal of Applied Linguistics*, *9*(3), 608–615. https://doi.org/10.17509/ijal.v9i3.23211

Haven, T. L., & Grootel, L. Van. (2019). Preregistering qualitative research. *Accountability in Research*, *26*(3), 229–244. https://doi.org/10.1080/08989621.2019.1580147

Hezam, T. A., Ali, J. K. M., Imtiaz, S., Saifi, M. A., & Rezaul Islam, M. (2022). Challenges and Problems of Reading Comprehension Experienced by EFL Learners. *Journal of English Studies in Arabia Felix*, *1*(2), 11–21. https://doi.org/10.56540/jesaf.v1i2.28

Hidayati, A. N., & Santiana, S. (2020). Promoting Cultural Awareness through Intercultural Listening Activities. *Jurnal Tahuri*, *17*(2), 53–62. https://doi.org/10.30598/tahurivol17issue2page53-62

Huang, Y., & Jun Zhang, L. (2020). Does a Process-Genre Approach Help Improve Students' Argumentative Writing in English as a Foreign Language? Findings From an Intervention Study. *Reading & Writing Quarterly*, *36*(4), 339–364. https://doi.org/10.1080/10573569.2019.1649223

Isma, A., & Nur, S. (2023). Examining the Reading Performance and Problems among Students

in Indonesian Higher Education. *SELTICS*, *6*(1), 12–23. https://doi.org/10.46918/seltics.v6i1.1763

Ismail, H., & Edi, E. (2022). Students' Perceptions of Implementing Problem-Based Learning with Blended Learning in EFL Academic Reading. *English Review: Journal of English Education*, *10*(3), 929–936. https://doi.org/10.25134/erjee.v10i3.6807

Kazi, A. S., Moghal, S., & Asad, Z. (2020). Metacognitive Awareness of Reading Strategies for Academic Materials: A Study of Undergraduate Students in Pakistan. *Global Social Sciences Review*, *5*(I), 44–51. https://doi.org/10.31703/gssr.2020(V-I).05

Le, T. T. D. (2023). Grammatical Error Analysis of EFL Learners' English Writing Samples: The Case of Vietnamese Pre-intermediate Students. *International Journal of TESOL & Education*, *3*(4), 1–14. https://doi.org/10.54855/ijte.23341

Litualy, S. J., & Serpara, H. (2021). Comparative Literary Works, Language Learning, and Character Building of Learners. *Jurnal Tahuri*, *18*(2), 14–23. https://doi.org/10.30598/tahurivol18issue2page14-23

Lumaela, E., & Que, S. R. (2021). Using Explicit Instruction Method in Improving Students' Grammar Ability in Simple Present Tense at Class X3 of SMA Negeri 4 Leihitu. *Jurnal Tahuri*, *18*(1), 13–32. https://doi.org/10.30598/tahurivol18issue1page13-32

Maher, L., & Dertadian, G. (2018). Qualitative research. *Addiction*, *113*(1), 167–172. https://doi.org/10.1111/add.13931

Mahmoud, M. M. A. (2014). The effectiveness of using the cooperative language learning approach to enhance EFL writing skills among Saudi university students. *Journal of Language Teaching and Research*, *5*(3), 616. https://doi.org/doi:10.4304/jltr.5.3.616-625

Mali, Y. C. G. (2023). EFL Students' Challenges in Writing Research Proposals. *LLT Journal: A Journal on Language and Language Teaching*, *26*(1), 272–289. https://doi.org/10.24071/llt.v26i1.5296

Manuputty, R. (2022). Enhancing Students' Critical Reading Skills in Teaching Argumentative Essay. *Jurnal Tahuri*, *19*(1), 36–46. https://doi.org/10.30598/tahurivol19issue1page36-46

Mubarok, Y., & Budiono, T. (2022). An error analysis on EFL students' writing. *Englisia: Journal of Language, Education, and Humanities*, *9*(2), 187–199. https://doi.org/10.22373/ej.v9i2.11386

Nanda, D. W., & Azmy, K. (2020). Poor Reading Comprehension Issue in EFL Classroom Among Indonesian Secondary School Students: Scrutinizing the Causes, Impacts, and Possible Solutions. *Englisia: Journal of Language, Education, and Humanities*, *8*(1), 12–24. https://doi.org/10.22373/ej.v8i1.6771

Nurkamto, J., Drajati, N. A., Ngadiso, N., & Karlina, Y. (2021). Teachers' beliefs and practices in teaching reading at Islamic secondary schools in Indonesia. *Indonesian Journal of Applied Linguistics*, *10*(3), 667–676. https://doi.org/10.17509/ijal.v10i3.31753

Ondé, D., Jiménez, V., Alvarado, J. M., & Gràcia, M. (2022). Analysis of the Structural Validity of the Reduced Version of Metacognitive Awareness of Reading Strategies Inventory. *Frontiers in Psychology*, *13*(5), 88–102. https://doi.org/10.3389/fpsyg.2022.894327

Par, L. (2020). The Relationship between Reading Strategies and Reading Achievement of the EFL Students. *International Journal of Instruction*, *13*(2), 223–238. https://doi.org/10.29333/iji.2020.13216a

Putra, J. R., & Musigrungsi, S. (2022). Indonesian EFL Teachers' Beliefs about Incorporating Cultural Aspects in Their Multilingual and Multicultural EFL Classrooms. *3L The Southeast*

Asian Journal of English Language Studies, *28*(1), 75–89. https://doi.org/10.17576/3L-2022-2801-06

Ramadhianti, A., & Somba, S. (2023). Reading Comprehension Difficulties in Indonesian EFL Students. *Journal of English Language Teaching and Literature (JELTL)*, *6*(1), 1–11. https://doi.org/10.47080/jeltl.v6i1.2477

Rusgandi, M. A. (2023). Reading Strategies in Enhancing Students' Reading Comprehension: Are They Still Relevant? *IJET (Indonesian Journal of English Teaching)*, *12*(1), 57–72. https://doi.org/10.15642/ijet2.2023.12.1.57-72

Sadoughi, M., & Hejazi, S. Y. (2021). Teacher support and academic engagement among EFL learners: The role of positive academic emotions. *Studies in Educational Evaluation*, *70*(12), 101–116. https://doi.org/10.1016/j.stueduc.2021.101060

Sarah, Y. (2022). Study on EFL Classroom Management in Classroom at SMP Negeri 13 Ambon. *Jurnal Tahuri*, *19*(1), 10–19. https://doi.org/10.30598/tahurivol19issue1page10-19

Septiana, A. R. (2020). The indonesian grammatical interference on EFL students' writing. *Journal of Research on English and Language Learning (J-REaLL)*, *1*(1), 46–53. https://doi.org/10.33474/j-reall.v1i1.5610

Setiawati, M. D. A., & Budiasih, B. (2022). Strategies on Teaching Reading Comprehension for Junior High School Students During the COVID-19 Pandemic. *International Journal of Research on English Teaching and Applied Linguistics*, *2*(2), 15–25. https://doi.org/10.30863/ijretal.v2i2.2451

Shiddiq, S. M., Oktaviani, L., Herwiana, S., & Suryanovika, C. (2023). Lexical and grammatical errors analysis on Indonesian-English translation of EFL students in Indonesia. *JEES (Journal of English Educators Society)*, *8*(1), 104–113. https://doi.org/10.21070/jees.v8i1.1674

Souisa, T. R., Lekatompessy, J., & Ferdinandus, M. (2020). Diglot Picture Storybook Based on Maluku Content and Its Relevance for Young Learners' Literacy. *Jurnal Tahuri*, *17*(2), 84–95. https://doi.org/10.30598/tahurivol17issue2page84-95

Stanley, M. (2023). Qualitative Descriptive. In *Qualitative Research Methodologies for Occupational Science and Occupational Therapy* (pp. 52–67). Routledge. https://doi.org/10.4324/9781003456216-4

Suhirman, L., & Rahayu, B. (2021). Empowering EFL Teachers for Scientific Writing in PPG Workshop: Writing Classroom Action Research Proposal. *Indonesian Journal of EFL and Linguistics*, *6*(2), 473–486. https://doi.org/10.21462/ijefl.v6i2.414

Tableessy, N., & Umkeketony, S. (2022). Causes of Code Mixing in Learning Interaction of Indonesian for Class VIII SMP Negeri 1 Ambon. *Jurnal Tahuri*, *19*(1), 55–59. https://doi.org/10.30598/tahurivol19issue1page55-59

Turan, Z., & Akdag-Cimen, B. (2020). Flipped classroom in English language teaching: a systematic review. *Computer Assisted Language Learning*, *33*(5–6), 590–606. https://doi.org/10.1080/09588221.2019.1584117

Usman, J., Zainuddin, Z., Zulfikar, T., Lugendo, D., & Yusuf, Y. (2022). When online learning and cultural values intersect: Indonesian EFL students' voices. *Issues in Educational Research*, *32*(3), 1196–1212. https://search.informit.org/doi/10.3316/informit.655017804047081

Wenno, E. C., Serpara, H., & Litualy, S. J. (2021). Actantial Schema and Functional Structure of the Fairy Tale "Die Gänsemagd" (The Goose Girl) of the Brothers Grimm Fairy Tale Collection (Analysis of A. J. Greimas' Theory). *Jurnal Tahuri*, *18*(1), 1–12. https://doi.org/10.30598/tahurivol18issue1page1-12

Wiesner, C. (2022). Doing qualitative and interpretative research: reflecting principles and principled challenges. *Political Research Exchange*, *4*(1), 2127372. https://doi.org/10.1080/2474736X.2022.2127372

Wijaya, K. (2021). The Important Role of Extensive Reading Strategy in Indonesian EFL Learning Contexts. *Acuity: Journal of English Language Pedagogy, Literature and Culture*, *6*(2), 107–117. https://doi.org/10.35974/acuity.v6i2.2482

Xia, M., Kochmar, E., & Briscoe, T. (2016). Text Readability Assessment for Second Language Learners. *Proceedings of the 11th Workshop on Innovative Use of NLP for Building Educational Applications*, 12–22. https://doi.org/10.18653/v1/W16-0502

Yapp, Deborah, de Graaff, Rick, & van den Bergh, Huub. (2021). Effects of reading strategy instruction in English as a second language on students' academic reading comprehension. *Language Teaching Research*, *27*(6), 1456–1479. https://doi.org/10.1177/1362168820985236

Yasin, Z. M., & Shah, M. I. A. (2019). The Interactive Roles of Lexical Knowledge and Reading Strategies on Reading Comprehension Performance. *Journal of Nusantara Studies (JONUS)*, *4*(1), 273–299. https://doi.org/10.24200/jonus.vol4iss1pp273-299