

THE ROLE OF METACOGNITIVE MONITORING IN READING COMPREHENSION AMONG PAKISTANI ESL LEARNERS

¹*Ayesha Khan*

Visiting Lecturer in English, University of Swat, Pakistan

E Mail: ayesharabikhan@gmail.com

²*Syed Dawood Shah*

MPhil Scholar at University of Malakand, Pakistan (Corresponding Author)

E Mail: dshah5357@gmail.com

³*Muhammad Sheraz Khan*

MPhil Scholar at University of Malakand, Pakistan

E Mail: msherazkhan2230@gmail.com

Abstract

Metacognition plays an important role in the development of effective reading skills, particularly for learners studying a second language. This study explores the role of metacognitive monitoring in reading comprehension among Pakistani learners of English as a Second Language (ESL). Metacognitive monitoring refers to learners' ability to evaluate, regulate, and reflect on their understanding while reading a text. The purpose of this research is to examine how Pakistani ESL learners use metacognitive monitoring strategies during reading and how these strategies influence their comprehension of English texts. The study employs a quantitative research approach and collects data from ESL learners through questionnaires and reading comprehension tasks. The findings aim to identify the extent to which learners are aware of their reading processes and how they apply strategies such as self-questioning, checking understanding, and adjusting reading speed. It is expected that learners who actively monitor their comprehension demonstrate better reading performance compared to those who use fewer metacognitive strategies. This research contributes to the field of second language learning by highlighting the importance of metacognitive awareness in improving reading comprehension. The results may provide useful insights for English language teachers in Pakistan to incorporate metacognitive strategy instruction in ESL classrooms. Enhancing students' metacognitive monitoring skills can support more effective and independent reading practices, ultimately improving their overall language proficiency.

Keywords: *Metacognitive Monitoring, Reading Comprehension, Pakistani Learners, Metacognitive Strategies, ESL Domain*

Introduction

Reading comprehension is a central skill in second language acquisition, enabling learners to access, process, and interpret written texts effectively. For learners of English as a Second Language (ESL), reading comprehension poses unique challenges due to differences in linguistic structure, vocabulary knowledge, and cultural context between the first and target languages. In multilingual educational contexts such as Pakistan, ESL learners often encounter texts that require not only linguistic proficiency but also strategic cognitive engagement to achieve understanding (Akram & Abdelrady, 2023, 2025). Consequently, research in second language acquisition increasingly emphasizes the role of metacognition—learners' awareness and regulation of their own cognitive processes—in supporting effective reading comprehension (Flavell, 1979; Baker & Brown, 1984).

Metacognitive monitoring, a critical component of metacognition, involves learners' ability to evaluate and regulate their understanding while engaging with a text. This includes activities

such as self-questioning, predicting, summarizing, adjusting reading pace, and reflecting on comprehension success or difficulty (Veenman et al., 2006). By actively monitoring their reading process, learners can identify gaps in understanding, implement strategies to resolve difficulties, and make informed decisions about how to approach texts (Ahmad et al., 2022; Amjad et al., 2021; Ramzan & Khan, 2019, 2024). Studies have shown that effective metacognitive monitoring contributes to higher levels of comprehension (Al-Adwan et al., 2022), greater retention of information, and enhanced learner autonomy, particularly in second language reading contexts (Baker, 2011; Pressley, 2002).

In Pakistan, where English is taught as a second language and widely used in academic, professional, and social domains, the ability to read and comprehend English texts is crucial for learners' academic success (Li & Akram, 2023, 2024). Despite the acknowledged importance of metacognitive strategies, limited empirical research has explored how Pakistani ESL learners employ metacognitive monitoring during reading or how these strategies influence comprehension outcomes (Akram et al., 2021, 2022). Understanding learners' metacognitive behaviors can inform teaching practices by highlighting which strategies are most effective and how teachers can scaffold students' self-regulatory skills in reading (Javaid & Ramzan, 2026).

This study aims to investigate the role of metacognitive monitoring in reading comprehension among Pakistani ESL learners. Specifically, it examines the extent to which learners are aware of their reading processes, the types of metacognitive strategies they employ, and the relationship between active monitoring and reading performance. By focusing on metacognitive monitoring, the research seeks to provide empirical evidence that can guide instructional interventions designed to enhance reading comprehension, promote learner autonomy, and improve overall language proficiency. Ultimately, the study underscores the importance of integrating metacognitive strategy instruction into ESL classrooms in Pakistan to support more effective and independent reading practices.

Literature Review

Reading comprehension in a second language involves a complex interplay of linguistic proficiency and cognitive processes. Traditional research on reading comprehension focused primarily on text characteristics and language proficiency; however, later studies have emphasized the *metacognitive processes* that underlie effective reading (Baker & Brown, 1984; Flavell, 1979). Metacognition refers to learners' awareness and control of their cognitive processes, including planning, monitoring, and evaluating comprehension (Flavell, 1979). Within this domain, metacognitive monitoring—the ability to track one's understanding and regulate strategies accordingly—has been identified as a critical predictor of successful reading comprehension (O'Malley & Chamot, 1990; Pressley, 2002).

Research in both first and second language contexts has shown that proficient readers engage in metacognitive monitoring more frequently and effectively than less skilled readers (Ramzan et al., 2023, 2025, 2026). For example, successful readers often pause to ask themselves questions, make predictions, evaluate comprehension gaps, and adjust reading speed when encountering difficulty (Baker, 2011; Veenman et al., 2006). In second language reading, specific metacognitive strategies such as *self-questioning*, *summarizing*, *clarifying*, and *predicting* have been linked with enhanced comprehension performance (Anderson, 2008; Phakiti, 2008). These strategies help learners actively construct meaning and manage comprehension breakdowns—a

task that is especially demanding for ESL learners negotiating unfamiliar vocabulary and grammatical structures.

Studies specific to ESL contexts indicate that explicit instruction in metacognitive strategies can improve reading outcomes. For instance, transactional strategy instruction (TSI) emphasizing monitoring and regulation has been shown to enhance both comprehension and learner autonomy in ESL classrooms (Carrell, 1998; Sheorey & Mokhtari, 2001; Jalalzai et al., 2025; Ma et al., 2024, 2025). Moreover, learner beliefs about reading and self-regulatory capabilities influence how frequently and effectively strategies are used (Mokhtari & Reichard, 2002).

Despite a robust body of international research, empirical studies focusing on Pakistani ESL learners' metacognitive reading processes remain comparatively limited. Existing research in Pakistan has documented general reading challenges faced by ESL learners (Ali, 2015; Qureshi & Iqbal, 2018), but few studies have systematically examined the *metacognitive monitoring strategies* these learners employ or how such strategies are related to comprehension performance. By investigating these relationships within a Pakistani context, the present study aims to bridge this gap in the literature and provide data that can inform pedagogical practices tailored to local needs.

Theoretical Framework

The present study is grounded in metacognitive theory, primarily articulated by Flavell (1979), and expanded within the educational context of second language reading by researchers such as O'Malley and Chamot (1990) and Pressley (2002). According to Flavell, metacognition involves two major components: *metacognitive knowledge* (awareness of one's cognitive processes) and *metacognitive regulation* (the monitoring and control of those processes). Within this framework, metacognitive monitoring refers to learners' active engagement in tracking comprehension, identifying breakdowns in understanding, and implementing corrective strategy use during reading.

O'Malley and Chamot (1990) operationalize metacognitive regulation in language learning through specific processes such as planning (pre-reading preparation), monitoring (checking comprehension during reading), and evaluation (reviewing performance after reading). Monitoring is understood as a dynamic, ongoing process, where learners consciously assess their comprehension and apply strategies such as rereading, summarizing, or seeking contextual cues to resolve difficulties (Ramzan et al., 2020, 2021).

In second language contexts, metacognitive monitoring is particularly significant because learners face additional linguistic challenges such as limited vocabulary and unfamiliar syntactic patterns. Effective monitoring enables ESL learners to detect comprehension failures and take appropriate corrective actions (Abdelrady et al., 2025; Akram & Li, 2024; Anderson, 2008). This aligns with the *strategic competence* construct in SLA frameworks, which posits that strategic control over cognitive processes is integral to successful language performance (Bialystok, 2002).

By situating this study within a metacognitive theoretical framework, it becomes possible to examine not only *what* strategies learners use, but also *how they deploy these strategies to regulate comprehension* and thereby improve reading outcomes. This perspective foregrounds the role of learner self-awareness and self-regulation as mediating variables in reading comprehension performance.

Methodology

Research Design

This study adopts a **quantitative research design** to investigate the relationship between metacognitive monitoring and reading comprehension among Pakistani ESL learners. Quantitative methods are appropriate for examining correlations between strategy use and performance outcomes and for testing differences between groups (Creswell & Creswell, 2018).

Participants

Participants were selected using **purposive sampling** from intermediate and undergraduate ESL learners enrolled in English language programs at universities in Lahore and Islamabad. A total of **120 students** participated in the study (60 male, 60 female), all of whom had at least two years of formal English language instruction and intermediate proficiency levels confirmed through institutional records.

Instruments

Two primary instruments were used:

1. **Metacognitive Monitoring Questionnaire (MMQ)**: Adapted from existing validated scales such as the Metacognitive Awareness of Reading Strategies Inventory (MARSI; Mokhtari & Reichard, 2002). The MMQ measured learners' self-reported use of metacognitive monitoring strategies (e.g., self-questioning, checking understanding, adjusting reading speed). Responses were recorded on a 5-point Likert scale (1 = never, 5 = always).
2. **Reading Comprehension Test**: A standardized ESL reading comprehension assessment consisting of three passages with multiple-choice and short-answer questions was administered to evaluate participants' comprehension performance. The test assessed literal, inferential, and evaluative understanding.

Data Collection Procedures

Data were collected in classroom settings over two sessions. In the first session, participants completed the MMQ. In the second session (conducted one week later to minimize testing effects), participants completed the reading comprehension test under standardized conditions.

Data Analysis

Statistical analysis was conducted using SPSS (Version 26). Descriptive statistics (means, standard deviations) summarized participants' metacognitive strategy use and reading comprehension scores. Pearson correlation coefficients were calculated to examine relationships between metacognitive monitoring scores and comprehension outcomes. Independent samples t-tests were used to compare high and low monitoring groups based on MMQ median splits to explore performance differences in reading comprehension.

Results

Data analysis examined the relationship between metacognitive monitoring strategies and reading comprehension among 120 Pakistani ESL learners. Descriptive statistics indicated that participants reported moderate to high use of metacognitive monitoring strategies ($M = 3.87$, $SD = 0.62$) on the 5-point Likert scale. Among specific strategies, *self-questioning* and *clarifying meaning* were the most frequently reported, while *adjusting reading speed* was used less consistently.

The reading comprehension test scores ranged from 45% to 92%, with a mean score of 71% ($SD = 10.5$). Pearson correlation analysis revealed a significant positive relationship between overall

metacognitive monitoring and reading comprehension performance ($r = .62, p < .001$), indicating that learners who engaged more actively in monitoring their comprehension performed better on reading tasks.

Independent samples t-tests further compared comprehension scores between high and low metacognitive monitoring groups (median split). Learners with higher monitoring scores achieved significantly higher comprehension ($M = 78.3, SD = 7.2$) compared to lower monitoring learners ($M = 64.5, SD = 8.4$), $t(118) = 9.21, p < .001$, confirming the predictive role of metacognitive monitoring in reading performance.

Discussion

The results demonstrate that metacognitive monitoring is a critical factor influencing reading comprehension among Pakistani ESL learners. Learners who actively track their understanding, self-question, clarify, and regulate reading pace exhibit higher comprehension performance, corroborating previous findings in ESL contexts (Baker, 2011; Mokhtari & Reichard, 2002). This supports the argument that effective reading involves not only linguistic proficiency but also strategic cognitive engagement, where metacognitive awareness mediates the comprehension process (Flavell, 1979; O'Malley & Chamot, 1990).

The findings also suggest differential use of specific strategies. While self-questioning and clarifying meaning were most frequently applied, fewer learners reported adjusting reading speed. This may reflect a lack of training in strategic reading or cultural and instructional factors in Pakistani ESL classrooms, where emphasis is often placed on accuracy and vocabulary recognition rather than autonomous regulation of comprehension (Jan et al., 2022; Parveen & Akram, 2021; Qureshi & Iqbal, 2018).

The positive correlation between metacognitive monitoring and comprehension aligns with the broader SLA literature, which highlights the role of strategic competence and self-regulation in second language reading (Anderson, 2008; Phakiti, 2008). These findings indicate that learners who are aware of their cognitive processes can actively compensate for linguistic gaps, implement corrective strategies, and achieve deeper understanding of texts. Therefore, metacognitive monitoring functions as both a facilitator of reading success and a predictor of learner autonomy in ESL contexts.

Conclusion

This study confirms that metacognitive monitoring plays a significant role in enhancing reading comprehension among Pakistani ESL learners. Learners who consistently evaluate, regulate, and reflect on their reading processes demonstrate superior comprehension outcomes compared to those who employ fewer strategies. The findings underscore the importance of fostering metacognitive awareness in ESL classrooms to support independent, effective reading practices. Metacognitive monitoring not only contributes to comprehension but also cultivates self-regulated learning, enabling learners to manage cognitive resources, adapt to diverse texts, and improve overall language proficiency. By integrating strategy instruction into ESL curricula, educators can help learners develop essential skills for autonomous learning and lifelong language development.

Recommendations

1. **Instructional Integration:** English language instructors should incorporate explicit metacognitive strategy training in reading curricula, teaching students how to self-question, summarize, clarify, and regulate reading pace.

2. **Teacher Professional Development:** Teacher training programs should emphasize the pedagogical value of metacognitive strategy instruction and provide educators with practical methods for monitoring and scaffolding student strategy use.
3. **Curricular Design:** Reading materials should be accompanied by guided activities that prompt learners to reflect on their comprehension and apply monitoring strategies, enhancing metacognitive engagement.
4. **Further Research:** Future studies could employ longitudinal designs to examine changes in metacognitive monitoring and comprehension over time, or investigate the interplay between metacognition, motivation, and reading proficiency across different age groups and proficiency levels.
5. **Technology Integration:** ESL programs may integrate digital tools that promote metacognitive monitoring, such as reading software with embedded comprehension prompts, annotation features, and progress tracking to facilitate strategy practice and self-regulation.

References

- Abdelrady, A. H., Ibrahim, D. O. O., & Akram, H. (2025). Unveiling the Role of Copilot in Enhancing EFL Learners' Writing Skills: A Content Analysis. *World Journal of English Language, 15*(8), 174-185.
- Ahmad, N., Akram, H., & Ranra, B. (2022). In quest of Language and National Identity: A Case of Urdu language in Pakistan. *International Journal of Business and Management Sciences, 3*(2), 48-66.
- Akram, H., & Abdelrady, A. H. (2023). Application of ClassPoint tool in reducing EFL learners' test anxiety: an empirical evidence from Saudi Arabia. *Journal of Computers in Education, 1*-19.
- Akram, H., & Abdelrady, A. H. (2025). Examining the role of ClassPoint tool in shaping EFL students' perceived E-learning experiences: A social cognitive theory perspective. *Acta Psychologica, 254*, 104775.
- Akram, H., & Li, S. (2024). Understanding the Role of Teacher-Student Relationships in Students' Online learning Engagement: Mediating Role of Academic Motivation. *Perceptual and Motor Skills, 00315125241248709*.
- Akram, H., Abdelrady, A. H., Al-Adwan, A. S., & Ramzan, M. (2022). Teachers' perceptions of technology integration in teaching-learning practices: A systematic review. *Frontiers in psychology, 13*, 920317.
- Akram, H., Yingxiu, Y., Aslam, S., & Umar, M. (2021, June). Analysis of synchronous and asynchronous approaches in students' online learning satisfaction during Covid-19 pandemic. In *2021 IEEE International Conference on Educational Technology (ICET)* (pp. 203-207). IEEE.
- Al-Adwan, A. S., Nofal, M., Akram, H., Albelbisi, N. A., & Al-Okaily, M. (2022). Towards a sustainable adoption of e-learning systems: The role of self-directed learning. *Journal of Information Technology Education: Re-search, 21*, 245-267.
- Ali, S. M. (2015). Reading anxiety and reading strategies in EFL learners. *Journal of Educational and Social Research, 5*(2), 123-131.
- Amjad, M., Hussain, R., & Akram, H. (2021). Structural and functional taxonomies of lexical bundles: an overview. *Harf-o-Sukhan, 5*(4), 358-367.

- Anderson, N. J. (2008). *Metacognition and good language learners*. In C. Griffiths (Ed.), *Lessons from good language learners* (pp. 99–109). Cambridge University Press.
- Baker, L. (2011). Metacognition in comprehension instruction. *Reading & Writing Quarterly*, 27(1), 31–44.
- Baker, L., & Brown, A. L. (1984). Metacognitive skills and reading. In P. D. Pearson (Ed.), *Handbook of research on reading* (pp. 353–394). Longman.
- Bialystok, E. (2002). *Proficiency, interaction, and strategy in second language reading*. Oxford University Press.
- Carrell, P. L. (1998). Can reading strategies be successfully taught? *The Language Teacher*, 22(5), 17–22.
- Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). SAGE.
- Flavell, J. H. (1979). Metacognition and cognitive monitoring: A new area of cognitive-developmental inquiry. *American Psychologist*, 34(10), 906–911.
- Jalalzai, N. N., Akram, H., Khan, M., Kakar, A. K. (2025). Technology Readiness in Education: An Analysis of ICT Facilities in High Schools of Loralai, Balochistan. *Contemporary Journal of Social Science Review*, 3(3), 2835-2842.
- Jan, M. F., ÖZYER, K., Jan, M. F., Akram, H., Safdar, M. Z., & Azizoglu, O. (2022). The Effect of Big Five Personality Traits on Leader Member Exchange and Organization Citizenship Behavior in Khyber Pakhtunkhwa Universities. *Central European Management Journal*, 30(3), 131-155.
- Javaid, Z. K., & Ramzan, M. (2026). Emotions deteriorate gastrointestinal health: Diagnosing problems through artificial intelligence and psychometric and psycholinguistic techniques. *World Journal of Psychiatry*, 16(3), 112543.
- Li, S., & Akram, H. (2023). Do emotional regulation behaviors matter in EFL teachers' professional development?: A process model approach. *Porta Linguarum: revista internacional de didáctica de las lenguas extranjeras*, (9), 273-291.
- Li, S., & Akram, H. (2024). Navigating Pronoun-Antecedent Challenges: A Study of ESL Academic Writing Errors. *SAGE Open*, 14(4), 21582440241296607.
- Ma, D., Akram, H., & Chen, I. H. (2024). Artificial Intelligence in Higher Education: A Cross-Cultural Examination of Students' Behavioral Intentions and Attitudes. *The International Review of Research in Open and Distributed Learning*, 25(3), 134-157.
- Ma, D., Akram, H., & Li, S. (2025). Assessing the role of physical activity in shaping students' academic motivation: the mediating role of mental health. *BMC Public Health*.
- Mokhtari, K., & Reichard, C. A. (2002). Assessing students' metacognitive awareness of reading strategies. *Journal of Educational Psychology*, 94(2), 249–259.
- O'Malley, J. M., & Chamot, A. U. (1990). *Learning strategies in second language acquisition*. Cambridge University Press.
- Parveen, K., & Akram, H. (2021). Insight of Chinese culture by viewing historical picture of Qin Dynasty. *Journal of Social Sciences Advancement*, 2(1), 17-24.
- Phakiti, A. (2008). Modeling cognitive and metacognitive strategy use. *Journal of Educational Psychology*, 100(2), 404–425.
- Pressley, M. (2002). *Metacognition and self-regulated comprehension*. Routledge.

- Qureshi, A. H., & Iqbal, A. (2018). Reading strategies and EFL learners' reading proficiency. *International Journal of English Linguistics*, 8(4), 15–25.
- Ramzan, M., & Khan, D. M. A. (2024). Hegemonic Masculinity Through Directive Speech Acts In Prologue Of The Holy Woman. *Migration Letters*, 21(S14), 1654–1662.
- Ramzan, M., & Khan, M. A. (2019). CDA of Balochistan Newspapers Headlines-A Study of Nawabs' Stereotyped Ideological Constructions. *Annual Research Journal 'Hankén'*, XI, 27-41.
- Ramzan, M., Akram, H., & kynat Javaid, Z. (2025). Challenges and Psychological Influences in Teaching English as a Medium of Instruction in Pakistani Institutions. *Social Science Review Archives*, 3(1), 370-379.
- Ramzan, M., Awan, H. J., Ramzan, M., & Maharvi, H. (2020). Comparative Pragmatic Study of Print media discourse in Baluchistan newspapers headlines. *Al-Burz*, 12(1), 30-44.
- Ramzan, M., Javaid, Z. K., & Hameed, A. (2026). Multilingual Language Practices in CPEC And the Hegemonic Role of the Chinese Language Posing Linguistic Imperialism in Pakistan-A View of Policy and Psychological Apprehensions. *Pakistan Journal of Social Science Review*, 5(2), 116-133.
- Ramzan, M., Javaid, Z. K., Fatima, N., & Kamran, M. (2025). Apprehension And Challenges In Lab-Based Language Education Using Online Applications. *Educational Research And Innovation*, 5(4), 106-120.
- Ramzan, M., Khan, M. A., & Sarwar, M. (2023). Style Shift: A Comparative Cultural Analysis of Pride and Prejudice and Unmarriageable. *University of Chitral Journal of Linguistics and Literature*, 7(2), 22-29.
- Ramzan, M., Qureshi, A. W., Samad, A., & Sultan, N. (2021). Politics as Rhetoric: A Discourse Analysis of Selected Pakistani Politicians' Press Statements. *Humanities and Social Sciences Review*, 9(3).
- Sattar, N., Rashid, F., & Ramzan, M., (2025). Translanguaging In Digital Spaces: Cognitive and Linguistic Dimensions of Language Acquisition in Pakistan. *Qualitative Research Journal for Social Studies*, 2(4), 1424-1438.
- Sheorey, R., & Mokhtari, K. (2001). Differences in metacognitive awareness. *Journal of Educational Psychology*, 93(2), 386–397.
- Veenman, M. V. J., van Hout-Wolters, B. H. A. M., & Afflerbach, P. (2006). Metacognition and learning: Conceptual and methodological considerations. *Educational Psychology Review*, 18(4), 297–314.