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Mhd Ghaith Alturjman: Metacognitive Reading Strategies among International Students in English-Taught Programs in Hungary  
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## **Metacognitive Reading Strategies among International Students in English-Taught Programs in Hungary**

Globalization has made English the dominant lingua franca, especially in higher education, creating challenges for non-native speakers (Bound et al., 2021; Tight, 2021). Academic reading in English poses significant difficulties, as students often struggle with complex texts (Aboud et al., 2019; Al-Jarrah & ISMAIL, 2018). IN ORDER TO ADDRESS THIS, VARIOUS INITIATIVES HAVE AIMED TO IMPROVE reading skills, with metacognitive strategies proving particularly effective (Brown, 2017; Grabe, 2009; Haukås et al., 2018). Metacognition involves reflecting on, monitoring, and regulating one's cognitive processes (Brown, 2017; Haukås et al., 2018). This study explores (1) the metacognitive reading strategies perceived to be known to international students in English-taught programs in Hungary and (2) how these strategies evolve with English proficiency and educational level (BA, MA, PhD). Using the MARSIR inventory (Mokhtari et al., 2018), results indicate that proficiency significantly enhances the use of Global and Support Reading Strategies, while educational level shows no substantial effect.

**Keywords:** Metacognition, Reading, Reading Strategies Tertiary Education, MARSIR

### **1. Introduction**

Globalization has significantly impacted education at different tiers and within various fields. Not only has the content of education been impacted, but also the methodologies and skills taught, which claimed to be effective in better preparing students for today's interconnected world (Bound et al., 2021; Tight, 2021). The internationalization of education has resulted in the standardization of educational processes, the adoption of globally oriented management approaches, and participation in international rankings (Salih & Omar, 2021). The process of globalization and internationalization has resulted in the widespread use of English as a medium of instruction (EMI) in higher education. English has become more and more prevalent as countries aim to align their educational systems with global standards and enhance communication across borders (Bezborodova & Radjabzade, 2022).

While English as Medium of Instruction (EMI) is often positively perceived by instructors and students (Briggs et al., 2018; Puspitasari & Ishak, 2023), numerous challenges arise in its implementation, including regarding both the students' and the instructors' levels of English proficiency (Alhamami & Almelhi, 2021; Siddiqui et al., 2021) as well as students' academic skills (Al-Sobhi et al., 2017).

Students are reported to face difficulties with academic reading, a crucial skill for success in higher education, detrimentally impacting their overall academic levels (Aboud et al., 2019). That is due to their insufficient linguistic knowledge, absence of reading strategies, and difficulties in organizing ideas and outlining thoughts can also further exacerbate these hurdles in reading comprehension (Shehata, 2019).

Efforts have been made to address these challenges. It has been maintained that raising awareness about effective reading strategies, enhancing information literacy skills, improving text structure knowledge, and promoting critical thinking skills can better support students in overcoming their challenges and ultimately enhancing their academic reading skills in English-medium instructional environments (Al-Jarrah & Ismail, 2018). Efforts have also extended to deploy metacognitive knowledge and strategies to ameliorate students' reading skills and overall comprehension in second language acquisition globally (Brown, 2017; Haukås et al., 2018; Veenman et al., 2006).

Thus, the two overarching questions of this research are:

1. What metacognitive reading strategies do international readers in Hungary's English-taught programs report being aware of?
2. How do metacognitive reading strategies evolve with increasing English proficiency as well as academic level among international readers in English-taught programs in Hungary?

This paper is organized as follows: Section two defines academic reading and reading skills and introduces metacognition as a research area focused on enhancing reading achievement. Section three details the methodology, including the research design, participant information, instruments used, and the process for data collection and analysis. Section four presents the data analysis, and section five addresses the study's limitations and offers the researcher's recommendations.

## **2. Literature Review**

Due to the spread of interconnectedness and globalization in today's world, readers are compelled to be fluent in at least two languages. Today's globalized world poses novel dynamics characterized by global integration, social mobility, and diverse cultural interactions, and this necessitates proficiency in multiple languages (Nandi, 2022). As mentioned previously, today's global integration helped the rise of English as a global language, which accelerated and heightened the utility of bilingualism among non-native English speakers. Speakers of languages other than English need to be proficient in English alongside their native language to be able to be a part of today's ever-changing world (Karagöz & Erdemir, 2022). Bilingualism was depicted as a key to opening multiple doors in various spheres, including employment, education, and personal interactions (Nandi, 2022). This resulted in considerable interest in bilingual education,

especially featuring the English language, and it was maintained that reading in two languages will bestow better opportunities (Sánchez-Pérez & Manzano-Agugliaro, 2021).

Researchers defined the skill of reading differently; while some researchers lucidly simplified the definition of reading, others targeted the manifold purposes for reading and the varying processes that happen while reading. For example, reading has been defined as "the process of receiving and interpreting information encoded in language form via the medium of print" (Urquhart & Weir, 1998, p. 22), or "Comprehension occurs when the reader extracts and integrates various information from the text and combines it with what is already known" (Koda, 2005, p. 4). According to Grabe (2009), however, no single definition can grasp the multidimensionality of the process of reading, given its unique purposes and ever-changing processes. He suggests that a more holistic understanding of this process necessitates characterizing the reading processes of fluent readers and the ability to answer questions like "What do fluent readers do when they read? What processes are used by fluent readers? How do these processes work together to build a general notion of reading? As a starting point, we can say that reading is understood as a complex combination of processes" (Grabe, 2009, p. 14). According to Grabe (2009), reading is a rapid, efficient, comprehending, interactive, strategic, flexible, purposeful, evaluative, learning, and linguistic process.

The process of reading should be rapid and efficient, as research has shown that while reading speed can positively impact comprehension, it is not the sole factor in reading proficiency (Akan et al., 2023; Klimovich et al., 2023). Reading is fundamentally a comprehending and interactive process where readers engage with texts to understand the messages conveyed and create individual interpretations based on their background knowledge, domain knowledge, implicit assumptions, and personal experiences (Farooq, 2018; Grabe, 2009). It is also a strategic process involving the identification of key information, organizing text structure, and summarizing essential details (Faridah, 2022; Razkane et al., 2023), as well as the ability to repair comprehension breakdowns (Bråten & Samuelstuen, 2004; Zein et al., 2020). Proficient readers adapt to new information and objectives during the reading process (Brandmo & Bråten, 2021; Mandokoro, 2018), and they question and assess content for better evaluation and deeper understanding (Yasemin, 2020). Recurrent evaluation enhances comprehension, understanding, and retention (Takarroucht, 2021). Ultimately, reading is a complex cognitive process requiring linguistic activities such as graphemic-phonemic connections, morpheme awareness, and syntactic analysis, all crucial for comprehension and meaning-making (Colé et al., 2014; Duncan, 2018). These skills can be polished utilizing several reading strategies, but what is the difference between skills and strategies? Proficiency in a complex action is linked to skill, whereas strategy pertains to a purposeful and structured approach

(Afflerbach et al., 2008). To elaborate, readers deploy strategies when they consciously plan their reading behavior. For example, they might thoughtfully plan to focus on questions before reading the text. Nonetheless, reading skills are automatic, with no deliberate plans. Once deploying a strategy becomes effortless and requires less and less thought, it becomes a skill, and this is the point of teaching strategies explicitly (Afflerbach et al., 2008).

In metacognition research, three main strategies were identified: global reading strategies, problem-solving strategies, and support reading strategies. Global Reading Strategies focus on guiding students to have a reading purpose in mind when reading a text, which includes setting goals, previewing the structure of the text, finding the main idea, leveraging background knowledge, and making predictions (Mokhtari & Reichard, 2002; Muhid et al., 2020). Researchers ask whether the reader sets reading outcomes before reading, skims through the passage, connects with prior knowledge, and makes predictions about what the text will be about (Mokhtari et al., 2018). Problem-solving strategies involve the active and continual process of cognitive monitoring and evaluating reading activity when faced with problems (Mokhtari et al., 2018; Muhid et al., 2020; Rajasagarar & Ismail, 2022). This includes adjusting, monitoring, and evaluating the reading speed, rereading the text, and reading aloud (Ali & Razali, 2019). Monitoring strategies involve pausing and checking the coherence of the text, visualizing the information, paying attention to tables and charts, maintaining focus, and maneuvering through unfamiliar words (Mokhtari et al., 2018). Evaluating strategies include summarizing key information, checking whether predictions were correct, evaluating the information, rereading passages that seem difficult, judging the efficacy of their strategies, and checking their ability to achieve their reading objectives (Mokhtari et al., 2018). Support reading strategies are supplementary to the reading process: the use of a dictionary, using the mother tongue, reading images, the reading aloud technique, note-taking, and underlining (Ali & Razali, 2019).

These three types of reading strategies have been stressed in the different reading achievement studies, and one of the most cited is metacognition. The concept of metacognition is mainly attributed to John Flavell and Ann Brown. Their theoretical and empirical investigations yielded insights into the reflective processes of learners and shed light on individuals' awareness of their cognitive abilities (Brown, 1978; Flavell, 1979). Metacognition extends beyond mere awareness of one's cognitive processes to encompass a range of higher-order thinking skills and strategies. Metacognition refers to the knowledge about and regulation of one's cognitive activities in learning processes. It involves thinking about one's thinking, including understanding what one knows and doesn't know and effectively managing cognitive processes. Metacognition enables individuals to monitor, control, and adaptively regulate their cognitive processes, thereby

enhancing learning outcomes and problem-solving abilities (Brown, 2017; Haukås et al., 2018; Mokhtari & Reichard, 2002; Veenman, 2006).

According to Flavell (1979), the realm of metacognition follows three main currents: metacognitive knowledge, metacognitive experience, and metacognitive strategies. Metacognitive knowledge, encompassing an individual's deep understanding of their cognitive processes, serves as a cornerstone for effective learning. Person knowledge fosters self-awareness regarding one's cognitive strengths and weaknesses, guiding learners to capitalize on their abilities and address areas needing improvement. Task knowledge empowers individuals to decipher the intricacies of various learning tasks, enabling them to employ appropriate strategies tailored to each challenge's demands. Strategy knowledge equips learners with a diverse toolkit of cognitive strategies, facilitating adaptive problem-solving and efficient information processing. Metacognitive experiences, characterized by conscious reflections during learning, afford learners the opportunity to monitor their comprehension, regulate their strategies, and evaluate their progress, thus fostering self-directed learning and metacognitive competence. Through deliberate utilization of metacognitive strategies such as meticulous planning, insightful self-questioning, succinct summarization, vivid visualization, and rigorous self-testing, learners can optimize their cognitive endeavors, enhance learning efficacy, and cultivate autonomy in navigating complex academic terrain. This holistic integration of metacognitive elements not only elevates learning outcomes but also nurtures a lifelong disposition for reflective and adaptive learning practices, essential for thriving in today's dynamic and knowledge-driven society (Brown, 1978, 2017; Flavell, 1979; Haukås et al., 2018; Oxford, 1995; Van Kraayenoord, 2010).

It is worth mentioning that although many researchers assert the effectiveness of deploying metacognitive reading strategies, different researchers deployed different instruments and revealed different results (Csíkos, 2022). To measure students' metacognitive strategies, some researchers used offline instruments, like self-reporting questionnaires, while others used online, like observations or eye-tracking experiments. Since this study mainly uses a self-reporting questionnaire, it is valid to mention that using only this tool can result in some issues. First, students may under or overestimate their awareness of these strategies, and even their reported awareness may not translate to actual and appropriate strategy use (Veenman, 2016). Second, students also may have to rely on their memory to answer the questionnaire questions, which might not necessarily reflect reality. Third, reading the questions may remind the students of strategies, even if they do not actually deploy them. Finally, some students compare themselves to different people to answer the questions. Some students might compare themselves to their peers, while others might compare themselves to a teacher, which can also affect the results (Veenman & van Cleef, 2019). Nonetheless, research also maintained the importance of using questionnaires, especially in

contexts where they have not been utilized enough. First, they are easy to administer to larger groups of students, are less resource-intensive, cover a wide range of metacognitive reading strategies, and provide retrospective insights into how students perceive themselves, which is the first step to start from and develop (Veenman & van Cleef, 2019).

### **3. Method**

The study comprised 75 international students currently enrolled in universities in Hungary, all possessing at least an intermediate level of English proficiency. The participants consist of 43 males and 32 females, with ages ranging from 17 to 42 years ( $M = 26.51$ ,  $SD = 5.486$ ). The participants represented a diverse array of nationalities, including but not limited to Algerian, Brazilian, Chinese, Jordanian, Pakistani, Russian, Syrian, and Turkish. Arabic was the most prevalent native language among the participants, followed by Chinese, Russian, and Urdu. Despite their varied backgrounds, all participants indicated English as the language of instruction at their respective universities. Regarding their educational levels, the majority were pursuing Master's degrees (48%), followed by Bachelor's (29.3%) and Doctoral (22.7%) degrees. The participants self-reported their English proficiency as follows: 12 out of 75 participants were at an intermediate level, 22 were at an upper-intermediate level, and 41 were at an advanced level.

This research follows a quantitative design. The data was derived from a questionnaire (See Appendix A). The questionnaire is based on the revised version of the Metacognitive Awareness of Reading Strategies Inventory, hereafter referred to as MARS (Mokhtari et al., 2018). This 5-likert scale questionnaire features 15 statements that explore three main reading skills: global reading skills (GRS), problem-solving skills (PSS), and support reading skills (SRS). According to the designers, this questionnaire has been tested for six aspects of validity: content, substantive, structural, generalizability, external, and consequential (Mokhtari et al., 2018). The questionnaire demonstrated high reliability, as evidenced by a Cronbach's alpha value of 0.916.

The data were collected online. It was sent through international students' online groups. The data were analyzed in accordance with what the questionnaire designers recommended (Mokhtari et al., 2018). They asserted that students' awareness of a metacognitive strategy can be demonstrated on a scale from one to five. The lower a participant scores, the less aware they can be considered. In this section, I grouped all items related to global reading strategies (GRS), i.e., having a purpose in mind when I read, previewing the text to see what it is about before reading it, checking to see if the content of the text fits my purpose for reading, using typographical aids like boldface and italics to pick out key information, and critically analyzing and evaluating the information read. Problem-solving strategies (PSS) include getting back on track when getting

sidetracked or distracted, adjusting reading pace or speed based on what the person is reading, stopping from time to time to think about what is being read, rereading to make sure the person understands what they are reading, and guessing the meaning of unknown words or phrases. Support reading strategies (SRS) include taking notes while reading, reading aloud to help the person understand what they are reading, discussing what is being read with others to check understanding, underlining or circling important information in the text, and using reference materials such as dictionaries to support reading. Then, the mean of each category was calculated to see which group strategy was more achievable than others. Then, each strategy was also investigated to see the differences between specific items in the three groups. After that, the participants were categorized according to their English language proficiency and academic level. The former identified four groups: pre-intermediate, intermediate, upper-intermediate, and advanced, and the latter identified Bachelor's students, Master's students, and PhD students to investigate to what extent the level of English or the academic level has any role in their metacognitive awareness. Kruskal-Wallis tests were employed to check the extent to which English proficiency and academic level affect the perceived awareness of metacognitive reading strategies, as they are non-parametric and do not assume normality and homogeneity of variance (Ostertagova et al., 2014). The analysis involved investigating the composite score as well as the scores of each subskill per se: global reading strategies (GRS), problem-solving strategies (PSS), and support reading strategies (SRS).

#### **4. Results**

First, the participants in this study showed a relatively high level of metacognitive awareness. The students scored 3.81 out of five in their overall awareness. Nonetheless, some strategies were more achievable than others; the skill that was the most achievable was problem-solving, scoring 3.90, closely followed by support reading, scoring 3.82. As for global reading skills, they were the lowest to be achieved, scoring 3.56.

The table below lists all skills and subskills that were investigated, along with their scores from the highest to the lowest.

**Table 1.** The Most and Least Frequently Used Metacognitive Reading Strategies

Strategy Type	Items	Mean	SD
PSS	Rereading to make sure I understand what I'm reading.	<b>4.29</b>	<b>1.10</b>
SRS	Underlining or circling important information in the text.	<b>4.14</b>	<b>1.21</b>
PSS	Guessing the meaning of unknown words or phrases.	<b>4.13</b>	<b>0.99</b>
PSS	Adjusting my reading pace or speed based on what I'm reading.	<b>3.98</b>	<b>1.25</b>
SRS	Taking notes while reading.	<b>3.97</b>	<b>1.21</b>
GLS	Critically analyzing and evaluating the information read.	<b>3.85</b>	<b>1.25</b>
SRS	Using reference materials such as dictionaries to support my reading.	<b>3.77</b>	<b>1.18</b>
PSS	Stopping from time to time to think about what I'm reading.	<b>3.72</b>	<b>1.31</b>
GLS	Previewing the text to see what it is about before reading it.	<b>3.69</b>	<b>1.33</b>
SRS	Discussing what I read with others to check my understanding.	<b>3.66</b>	<b>1.17</b>
SRS	Reading aloud to help me understand what I'm reading.	<b>3.56</b>	<b>1.22</b>
GRS	Having a purpose in mind when I read.]	<b>3.53</b>	<b>1.39</b>
GRS	Checking to see if the content of the text fits my purpose for reading.	<b>3.49</b>	<b>1.39</b>
PSS	Getting back on track when getting sidetracked or distracted.	<b>3.41</b>	<b>1.33</b>
GRS	Using typographical aids like bold face and italics to pick out key information.	<b>3.26</b>	<b>1.35</b>

The table shows that predominantly, the strategies perceived to be known for the student are problem-solving strategies, with three out of five of them in the top five most frequently perceived to be used. On the other hand, global reading strategies appear to be perceived as less achievable for the students, with three of them out of five occupying the bottom five in the list. This result answers the first research question in this paper.

The second question investigates how metacognitive reading strategies evolve with increasing English proficiency as well as academic level. The data from the MARSII questionnaire was used, and different statistical tests were used to answer this question. The following procedure is followed to answer this overarching question.

1. How do all metacognitive reading strategies evolve with increasing English proficiency?
2. How do different categories within all metacognitive reading strategies evolve (PSS, GRS, SRS) with increasing English proficiency?
3. How do specific groups differ in particular: pre-intermediate, intermediate, upper-intermediate, and advanced?
4. How do all metacognitive reading strategies evolve with increasing academic levels?
5. How do different categories within all metacognitive reading strategies evolve (PSS, GRS, SRS) with increasing academic levels?

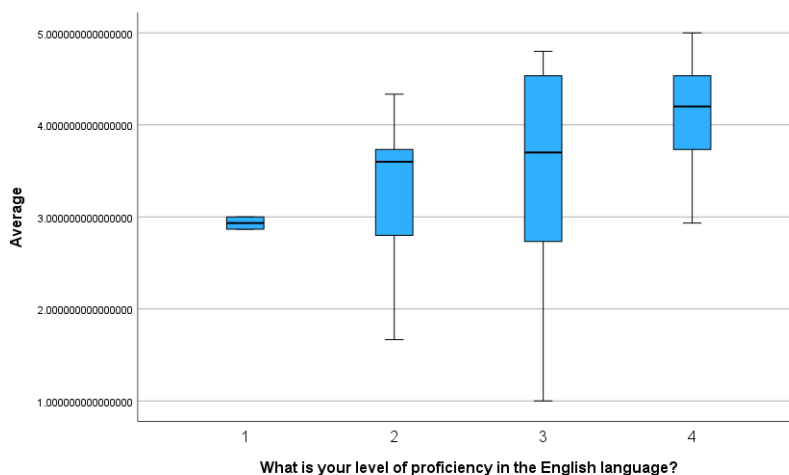


6. How do specific groups differ in particular: BA, MA, and PhD students?

Kruskal-Wallis tests were employed to answer the first two sub-questions. The first analysis assessed the impact of English level of proficiency on metacognitive reading strategies. The impact of English proficiency on all metacognitive reading strategies proved to be positive and statistically significant ( $p = .016$ ). This result demonstrates that readers with higher levels of English proficiency report higher awareness of metacognitive reading strategies. However, not all metacognitive strategies are affected equally. Both global reading strategies and support reading strategies showed a positive relationship with the following values, respectively ( $p = .002$ ) and ( $p = .046$ ). Nonetheless, students' perceived knowledge of problem-solving strategies was not statistically significant ( $p = .161$ ).

Further, Mann-Whitney U tests were deployed to identify which groups differ. The results revealed that students with advanced English proficiency differ significantly from students with pre-intermediate ( $p = .026$ ) or intermediate level of proficiency ( $p = .011$ ). However, no significant differences were found between the following groups: (1) pre-intermediate and intermediate levels ( $p = .450$ ), (2) the pre-intermediate and upper intermediate levels ( $p = .296$ ), (3) the intermediate and upper intermediate levels ( $p = .416$ ), or (4) the upper intermediate and advanced levels ( $p = .089$ ). These findings suggest that the Advanced level significantly differs from lower levels, especially both the Pre-Intermediate and Intermediate levels, while the other comparisons do not show significant differences.

**Figure 1.** The Effect of English Proficiency on Metacognitive Reading Strategies



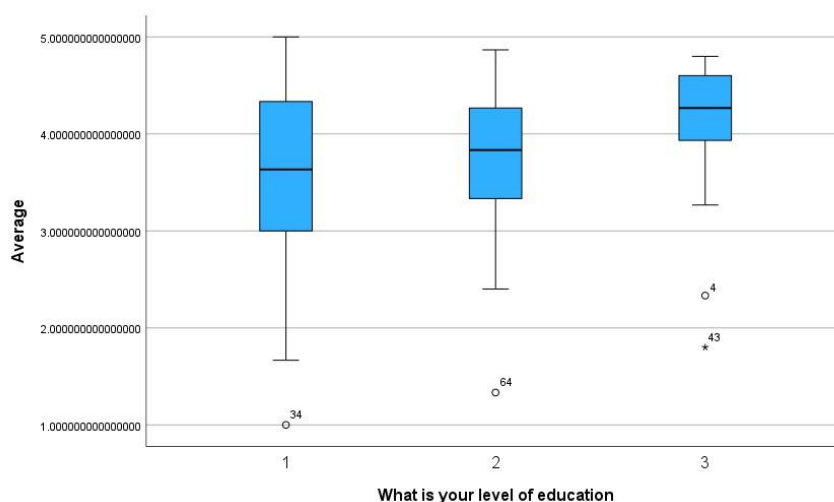
As depicted in the figure, the perceived knowledge of metacognitive reading strategies tends to increase with higher proficiency in English, suggesting a positive relationship.

Students' academic levels showed different results. First, students with more degrees do not report more awareness of metacognitive reading strategies ( $p$

=.089). None of the subskills showed any remarkable differences: problem-solving strategies ( $p=.614$ ), global-reading strategies ( $p=.105$ ), and support-reading strategies ( $p=.122$ ).

Mann-Whitney U tests were also utilized to detect whether any of the groups differ. The results revealed that BA students and MA students do not significantly differ ( $p=.653$ ), and the same applies to students between MA students and PhD students ( $p=.109$ ). However, the closest to being considered statistically significant was between BA students and PhD students ( $p=.077$ ). Nonetheless, it is not enough to be considered statistically significant. This result shows that students' academic levels do not correspond to higher awareness of metacognitive reading strategies. These strategies are supposed to be explicitly taught, even at higher academic levels.

**Figure 2.** The Effect of Academic Level on Metacognitive Reading Strategies



The figure visualizes how higher levels of education do not necessarily corroborate with higher awareness of metacognitive reading strategies, as students report.

#### 4.1 Discussion

The findings of this study underscore the significant relationship between English proficiency and the use of metacognitive reading strategies among international students in English-taught programs in Hungary. This supports the primary hypothesis that learners with higher proficiency levels are more adept at employing metacognitive strategies such as planning, monitoring, and evaluating their reading processes, or at least how they perceive their reading behaviour. These strategies enable students to navigate complex academic texts more efficiently, aligning with the work of Brown (2017) and Grabe (2009), who highlight the value of metacognitive awareness in language learning. However, these strategies would vary significantly across educational levels (BA, MA,

PhD)—and were not supported. This discrepancy could be due to the homogeneity of the participant sample, as the majority were highly educated and self-reported advanced proficiency levels. This lack of diversity may have dampened the potential for significant differences between educational levels, suggesting that metacognitive strategies are more closely tied to language proficiency than to academic standing. This finding diverges from previous studies (e.g., Bound et al., 2021; Tight, 2021), which indicate that academic demands might shape reading strategy use. The observed homogeneity in educational background and proficiency limits the generalizability of these results, as students at varying proficiency and academic levels may exhibit different patterns of strategy use.

Another key point is the lack of a significant correlation between metacognitive reading strategies and academic level. While metacognitive strategies are clearly essential for navigating English-language texts, their direct influence on academic performance appears to be mediated by other factors, such as the specific academic tasks students face or broader intellectual abilities. This aligns with Aboud et al. (2019) and Al-Jarrah & Ismail (2018), who found that metacognitive skills alone may not suffice for academic success. These findings suggest that while metacognitive strategies are essential for language proficiency, they may not guarantee a higher academic level, especially in diverse academic contexts.

From another perspective, the result showing no significant relation between someone's academic level and their use of metacognitive reading strategies may be explained by the fact that these strategies should be taught at all levels. In other words, explicit instruction in metacognitive strategies is essential across all educational levels, as they do not develop on their own. Educators should be encouraged to explicitly teach these strategies rather than assuming they will naturally develop. To achieve this, educators can encourage reflection on learning processes and offer tools that enable students to observe their comprehension and development in reading.

These results must be interpreted with caution, as limitations in the study design may have influenced the findings. First, the sample size, particularly the overrepresentation of advanced English speakers, may have skewed the results. Moreover, the reliance on self-reported data introduces the possibility of bias in measuring both proficiency and strategy use; it only shows what students believe they do, rather than what they actually do while reading. Moreover, the study ignored the extent to which students' native language or academic background affects their reading behaviour in English and mainly focused on the academic level rather than academic performance. Future research should address these limitations by recruiting a more diverse sample and employing objective measures of both English proficiency and academic level. It would also be valuable to explore the influence of discipline-specific demands on strategy use, as different fields may require different reading approaches. Investigating these nuances

would offer a more comprehensive understanding of how metacognitive reading strategies contribute to academic success.

## **5. Conclusion**

This study contributes to the growing body of research on metacognitive reading strategies by examining their use among international students in English-taught programs in Hungary. Although the data emerged from only a questionnaire, it still gave retrospective insights into what students believe they do, which can be the first step to build on. Students' perceptions indicate that English proficiency is a key factor in the frequent use of metacognitive strategies, particularly Global Reading Strategies (GRS) and Support Reading Strategies (SRS). However, educational levels—whether students are at the BA, MA, or PhD level—do not appear to influence strategy use significantly. Additionally, while these strategies are instrumental in helping learners navigate academic texts, their direct impact on the academic level remains unclear, as other factors seem to mediate this relationship. The study's limitations, including a homogeneous sample and self-reported data, restrict the generalizability of the findings. Future research should aim to include more diverse participants and consider other academic and cognitive factors that might influence both metacognitive strategy uses and academic success.

Additionally, further studies could explore how discipline-specific academic demands shape the use of reading strategies, as well as examine the long-term development of metacognitive skills across different academic levels and contexts. In practical terms, these findings underscore the importance of incorporating metacognitive strategy training into English language education, especially for students seeking to enhance their reading abilities. Educators should emphasize the development of these skills not only to improve language proficiency but also to better equip students to tackle complex academic tasks. Although the direct link between metacognitive strategies and academic level remains uncertain, the development of these strategies clearly plays a crucial role in successful language learning. Future research could explore the integration of metacognitive strategies within specific academic curricula, offering a more targeted approach to enhancing both reading skills and academic performance.

## References

- Aboud, F., Alafeshat, R., & Shamsi, A. F. (2019). Thesis challenges for Arab PhD candidates in English medium of instruction context. *Journal of Studies in Education*, 9(4), 13–24. 10.5296/jse.v9i4.15492
- Afflerbach, P., Pearson, P. D., & Paris, S. G. (2008). Clarifying differences between reading skills and reading strategies. *The Reading Reacher*, 61(5), 364–373. <https://doi.org/10.1598/RT.61.5.1>
- Albashtawi, A. H., Jaganathan, P., & Singh, M. (2016). Linguistic knowledge aspects in academic reading: Challenges and deployed strategies by English-major undergraduates at a Jordanian institution of higher education. *Higher Education Studies*, 6(3), 61–71. <https://doi.org/10.5539/hes.v6n3p61>
- Aldabbus, S. (2017). Challenges faced by some foundation students at Bahrain Teachers College in acquiring reading and writing skills. *International Journal of Pedagogical Innovations*, 5(02), 123–131. <https://doi.org/10.12785/PI/050203>
- Aldawsari, M. (2022). Deciphering students and teachers' perceptions towards English as a medium of instruction: A case study of Prince Sattam Bin Abdulaziz University. *Theory and Practice in Language Studies*, 12(12), 2687–2694. <https://doi.org/10.17507/tppls.1212.17>
- Alhamami, M., & Almelhi, A. (2021). The dilemma of English as a medium of instruction policy in science college programs. *Studies in English Language and Education*, 8(3), 1045–1060. <https://doi.org/10.24815/siele.v8i3.21391>
- Ali, A. M., & Razali, A. B. (2019). A review of studies on cognitive and metacognitive reading strategies in teaching reading comprehension for ESL/EFL learners. *English Language Teaching*, 12(6), 94–111. <https://doi.org/10.5539/elt.v12n6p94>
- Al-Jarrah, H., & Ismail, N. S. B. (2018). Reading comprehension difficulties among EFL learners in higher learning institutions. *International Journal of English Linguistics*, 8(7), 32–41. <https://doi.org/10.5539/ijel.v8n7p32>
- Al-Shboul, O. K. (2022). The students' perceptions of Arabic and English as a medium of instruction in Jordan. *Theory and Practice in Language Studies*, 12(7), 1441–1446. <https://doi.org/10.17507/tppls.1207.26>
- Al-Sobhi, B. M. S., Rashid, S. M., Abdullah, A. N., & Darmi, R. (2017). Arab ESL secondary school students' spelling errors. *International Journal of Education and Literacy Studies*, 5(3), 16–23. <https://doi.org/10.7575/aiac.ijels.v.5n.3p.16>
- Altamimi, D., & Ab Rashid, R. (2019). Effective teaching strategies to eliminate spelling problems among Saudi English language undergraduates. *International Journal of English Linguistics*, 9(5), 317–327. <https://doi.org/10.5539/ijel.v9n5p317>
- Bensaad, S., & Ghania, O. (2020). An examination of reading strategies awareness among Algerian ESP students at the National Higher School for hydraulics. *Journal of Language and Linguistic Studies*, 16(4), 1784–1802. <https://doi.org/10.17263/jlls.851020>
- Bezborodova, A., & Radjabzade, S. (2022). English in higher education in the Kyrgyz Republic, Tajikistan, and Uzbekistan. *World Englishes*, 41(1), 72–91. <https://doi.org/10.1111/weng.12564>
- Bound, J., Braga, B., Khanna, G., & Turner, S. (2021). The globalization of postsecondary education: The role of international students in the US higher education system. *Journal of Economic Perspectives*, 35(1), 163–184. <https://doi.org/10.1257/jep.35.1.163>
- Brandmo, C., & Bråten, I. (2021). Measuring internet-specific reading motivation and engagement in an academic domain. *Nordic Journal of Literacy Research*, 7(1), 21–44. <https://doi.org/10.23865/njlr.v7.2107>
- Bråten, I., & Samuelstuen, M. S. (2004). Does the influence of reading purpose on reports of strategic text processing depend on students' topic knowledge? *Journal of Educational Psychology*, 96(2), 324–336. <https://doi.org/10.1037/0022-0663.96.2.324>
- Briggs, J., Dearden, J., & Macaro, E. (2018). English medium instruction: Comparing teacher beliefs in secondary and tertiary education. *Studies in Second Language Learning and Teaching*, 8(3), 673–696. <https://doi.org/10.14746/ssl.2018.8.3.5>
- Brown, A. L. (2017). Metacognitive development and reading. In R. J. Spiro, B. C. Bruce, & W. F. Brewer (Eds.), *Theoretical issues in reading comprehension* (pp. 453–482). Routledge.

- Channa, M. A., Nordin, Z. S., Siming, I. A., Chandio, A. A., & Koondher, M. A. (2015). Developing reading comprehension through metacognitive strategies: A review of previous studies. *English Language Teaching*, 8(8), 181–186. <https://doi.org/10.5539/elt.v8n8p181>
- Colé, P., Duncan, L. G., & Blaye, A. (2014). Cognitive flexibility predicts early reading skills. *Frontiers in Psychology*, 5, 1–8. <https://doi.org/10.3389/fpsyg.2014.00565>
- Csikós, C. (2022). Metacognitive and non-metacognitive processes in arithmetic performance: Can there be more than one meta-level?. *Journal of Intelligence*, 10(3), 53. <https://doi.org/10.3390/jintelligence10030053>
- Duncan, L. G. (2018). Language and reading: The role of morpheme and phoneme awareness. *Current Developmental Disorders Reports*, 5, 226–234. <https://doi.org/10.1007/s40474-018-0151-8>
- Faridah, F. (2022). The influence of students' level ability of reading comprehension on the students' translation ability. *Jurnal PTK Dan Pendidikan*, 8(1), 55–64. <https://doi.org/10.33578/jpfdkip.v8i1.8430>
- Farooq, M. B. (2018). A review of Gadamerian and Ricoeurian hermeneutics and its application to interpretive accounting research. *Qualitative Research in Organizations and Management: An International Journal*, 13(3), 261–283. <https://doi.org/10.1108/QROM-09-2017-1565>
- Flavell, J. H. (1979). Metacognition and cognitive monitoring: A new area of cognitive–developmental inquiry. *American Psychologist*, 34(10), 906–911. <https://doi.org/10.1037/0003-066X.34.10.906>
- Grabe, W. (2009). *Reading in a second language: Moving from theory to practice*. Cambridge University Press. <https://doi.org/10.1017/CBO9781139150484>
- Haukås, Å., Bjørke, C., & Dypedahl, M. (2018). *Metacognition in language learning and teaching*. Taylor & Francis. <https://doi.org/10.4324/9781351049146>
- Jimenez, L. M., & Meyer, C. K. (2016). First impressions matter: Navigating graphic novels utilizing linguistic, visual, and spatial resources. *Journal of Literacy Research*, 48(4), 423–447. <https://doi.org/10.1177/1086296X16677952>
- Karagöz, S., & Erdemir, N. (2022). Reasons, views, and practices of non-native parents towards raising bilingual children. *Anemon Muş Alparslan Üniversitesi Sosyal Bilimler Dergisi*, 10(3), 1341–1358. <https://doi.org/10.18506/anemon.1120057>
- Kasemsap, B., & Lee, H. Y.-H. (2015). L2 reading in Thailand: Vocational college students' application of reading strategies to their reading of English texts. *The Reading Matrix: An International Online Journal*, 15(2), 101–117.
- Khuziakhmetov, A., Nasibullov, R., Yarullin, I., & Nasibullova, G. (2020). Improving the quality of future bilingual mathematics teachers knowledge at university using digital education resources. *ARPHA Proceedings*, 3, 1605–1613. <https://doi.org/10.3897/ap.3.e1605>
- Koda, K. (2005). *Insights into second language reading: A cross-linguistic approach*. Cambridge University Press.
- Mandokoro, R. (2018). Effects of reading purposes on EFL reading comprehension: Comparing reading for multiple-choice tests and for essay tests. *JLTA Journal*, 21, 23–41.
- Marchal, M., Scholman, M., & Demberg, V. (2022). The effect of domain knowledge and implicitation on discourse relation inferences. *Dialogue & Discourse*, 13(2), 49–78. <https://doi.org/10.5210/dad.v13i2.12440>
- Mokhtari, K., & Reichard, C. A. (2002). Assessing students' metacognitive awareness of reading strategies. *Journal of Educational Psychology*, 94(2), 249–259. <https://doi.org/10.1037/0022-0663.94.2.249>
- Nandi, S. (2022). Bilingualism & multilingualism: A new perspective to language learning. *International Journal of English Learning & Teaching Skills*, 4(2), 1–8.
- Oxford, R. L. (1995). When emotion meets (meta) cognition in language learning histories. *International Journal of Educational Research*, 23(7), 581–594. [https://doi.org/10.1016/0883-0355\(96\)80440-4](https://doi.org/10.1016/0883-0355(96)80440-4)
- Puspitasari, T., & Ishak, C. N. (2023). Indonesian students' perceptions of English medium instruction. *LLT Journal: A Journal on Language and Language Teaching*, 26(1), 324–334. <https://doi.org/10.24071/llt.v26i1.5880>
- Razkane, H., Sayeh, A. Y., Diouny, S., & Yeou, M. (2023). Eleventh-grade students' use of metacognitive reading strategies in Arabic (L1) and English (L3). *International Journal of Instruction*, 16(1), 573–588. <https://doi.org/10.29333/iji.2023.16131a>

- Sáez, I. M., Vidal-Abarca, E., & Magliano, J. (2022). Comprehension processes on question-answering activities: A think-aloud study. *Electronic Journal of Research in Education Psychology*, 20(56), 1–26. <https://doi.org/10.25115/ejrep.v20i56.4622>
- Salih, A. A., & Omar, L. I. (2021). Globalized English and users' intercultural awareness: Implications for internationalization of higher education. *Citizenship, Social and Economics Education*, 20(3), 181–196. <https://doi.org/10.1177/20471734211049629>
- Sánchez-Pérez, M. del M., & Manzano-Agugliaro, F. (2021). Worldwide trends in bilingual education research: A half-century overview. *Education Sciences*, 11(11), 1–22. <https://doi.org/10.3390/educsci11110718>
- Shehata, A. M. K. (2019). Understanding academic reading behavior of Arab postgraduate students. *Journal of Librarianship and Information Science*, 51(3), 814–822. <https://doi.org/10.1177/0961000617742453>
- Siddiqui, K. A., Syed, H., & Sahito, Z. (2021). Desafíos y estrategias de los estudiantes universitarios en las clases de enseñanza media en inglés (EMI): Un estudio de caso. *Foro Educativo*, 36, 9–25.
- Takarroucht, K. (2021). The effect of self-assessment on the development of EFL reading comprehension skills. *Journal of English Education and Teaching*, 5(2), 231–247. <https://doi.org/10.33369/jcet.5.2.231-247>
- Tight, M. (2021). Globalization and internationalization as frameworks for higher education research. *Research Papers in Education*, 36(1), 52–74. <https://doi.org/10.1080/02671522.2019.1633560>
- Urquhart, A. H., & Weir, C. J. (1998). *Reading in a second language: Process, product and practice*. Routledge.
- Van Kraayenoord, C. E. (2010). The role of metacognition in reading comprehension. *Focal Points of the Research and Development of Pedagogically-Psychological Perspectives*, 277–302.
- Veenman, M. V. J. (2006). Metacognition and learning: Conceptual and methodological considerations. *Metacognition and Learning*, 1(1), 3–14. <https://doi.org/10.1007/s11409-006-6893-0>
- Veenman, M. V. J. (2016). Learning to self-monitor and self-regulate. In R. E. Mayer & P. A. Alexander (Eds.), *Handbook of research on learning and instruction* (2nd ed., pp. 249–273). Routledge.
- Veenman, M. V., & van Cleef, D. (2019). Measuring metacognitive skills for mathematics: students' self-reports versus online assessment methods. *ZDM*, 51(4), 691–701. <https://doi.org/10.1007/s11858-018-1006-5>
- Yasemin, B. (2020). The effect of critical reading skills on the evaluation skills of the creative reading process. *Eurasian Journal of Educational Research*, 20(88), 199–224. <https://doi.org/10.14689/ejer.2020.88.9>
- Zein, S., Sukyadi, D., Hamied, F. A., & Lengkanawati, N. S. (2020). English language education in Indonesia: A review of research (2011–2019). *Language Teaching*, 53(4), 491–523. <https://doi.org/10.1017/S0261444820000208>

## Appendix A

### Metacognitive Awareness of Reading Strategies Inventory-Revised (MARSIR, 2018)

#### GENERAL INFORMATION:

Name: \_\_\_\_\_

Age: \_\_\_\_\_

Gender: Male / Female / Prefer not to say

I consider myself (Check one):

1. \_\_\_\_\_ An excellent reader
2. \_\_\_\_\_ A good reader
3. \_\_\_\_\_ An average reader
4. \_\_\_\_\_ A poor reader

#### Instructions for Completing the Inventory

The statements listed on this inventory describes 15 strategies or actions readers use when reading academic or school-related materials such as book chapters, journal articles, stories, etc.

Directions:

Step 1: Read each statement to indicate whether you are aware of and/or use these strategies when you read.

Step 2: Use the following scale to show your strategy awareness and/or use:

1. I have never heard of this strategy before.
2. I have heard of this strategy, but I don't know what it means.
3. I have heard of this strategy, and I think I know what it means.
4. I know this strategy, and I can explain how and when to use it.
5. I know this strategy quite well, and I often use it when I read.

Step 3: After reading each strategy statement, place the numbers (1, 2, 3, 4, or 5) in the spaces preceding each statement to show your level of awareness and/or use of each strategy.

Example: \_\_\_\_\_ Sounding words out when reading

Place the number 1 in the blank space next to the strategy if you've never heard of it before; place the number 2 next to the strategy if you've heard of it, but don't know what it means; and so on. There are no right or wrong answers to the statements in this inventory. It takes about 7-10 minutes to complete the inventory.

#### Metacognitive Awareness of Reading Strategies Inventory-Revised (MARSIR, 2018)

Strategy scale:

1. I have never heard of this strategy before.
2. I have heard of this strategy, but I don't know what it means.
3. I have heard of this strategy, and I think I know what it means.
4. I know this strategy, and I can explain how and when to use it.
5. I know this strategy quite well, and I often use it when I read.

After reading each strategy statement, place the numbers (1, 2, 3, 4, or 5) in the spaces preceding each statement to show your level of awareness and/or use of each strategy.



Strategies 1-15

- \_\_\_\_\_ 01. Having a purpose in mind when I read.
- \_\_\_\_\_ 02. Taking notes while reading.
- \_\_\_\_\_ 03. Previewing the text to see what it is about before reading it.
- \_\_\_\_\_ 04. Reading aloud to help me understand what I'm reading.
- \_\_\_\_\_ 05. Checking to see if the content of the text fits my purpose for reading.
- \_\_\_\_\_ 06. Discussing what I read with others to check my understanding.
- \_\_\_\_\_ 07. Getting back on track when getting sidetracked or distracted.
- \_\_\_\_\_ 08. Underlining or circling important information in the text.
- \_\_\_\_\_ 09. Adjusting my reading pace or speed based on what I'm reading.
- \_\_\_\_\_ 10. Using reference materials,,,,, such as dictionaries to support my reading.
- \_\_\_\_\_ 11. Stopping from time to time to think about what I'm reading.
- \_\_\_\_\_ 12. Using typographical aids like bold face and italics to pick out key information.
- \_\_\_\_\_ 13. Critically analyzing and evaluating the information read.
- \_\_\_\_\_ 14. Rereading to make sure I understand what I'm reading.
- \_\_\_\_\_ 15. Guessing the meaning of unknown words or phrases.