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Article

Exploration of the First-Year University Students' Metacognitive Awareness about Reading Strategies

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Abstract: There have been a vast number of studies on reading strategies from different angles performed at various age levels. However, the COVID-19 pandemic has brought a challenge to students' lives, especially at the university level where they have to struggle with reading many materials online and offline. Therefore, this study investigated the levels of three different strategies of metacognitive awareness: global reading strategy, problem-solving strategy, and support reading strategy among 192 Slovak freshmen university students in a Business English class during the COVID-19 pandemic. The findings reveal that the students used problem-solving strategies the most, followed by global and support reading strategies the least. The results also indicate a difference between male and female students at individual levels of reading strategies. The study proposes a set of recommendations with an alliance of COVID-19 learning environment based on the results such as taking notes while reading and highlighting the most important information with an emphasis on details or showing the importance of previewing the text, asking questions/making predictions about the text, and most importantly paying attention to self-regulation practices in a new school environment.

Keywords: metacognitive awareness; reading; global reading strategies; problem-solving strategies; support reading strategies; freshmen Slovak students; English

1. Introduction

The first year for freshmen university students is critical when it comes to their future success, resistance, and persistence in the academy (Ribeiro et al., 2019). Many times, the expectations of students and reality are not in alignment, and therefore distress, poor academic performance, and higher drop-out rates come into place (Hassel & Rideout, 2018). Another factor that is present is that these students need to learn to be oriented in the new academic setting and predict many social distractions which come along with being a freshman. Academically, these students face especially a challenge when they are suddenly exposed to an abundance of reading materials in comparison to their high school studies and inadequate preparation for university reading (Ntreke & Ramoroka, 2017). In fact, reading is an essential skill in higher education because students are asked to read more independently and critically (Rianto, 2021). Additionally, literature shows that students miss text comprehension skills (Puerto, Thoms, & Boscarino, 2018; Ribeiro et al., 2019). Interestingly, the research reveals that more advanced students with better grades in English have a higher chance to succeed in their academic reading course than students of middle or lower grades. Furthermore, the most difficult skill for students is considered to be critical reading (Zulu, 2009). Not only do they have to read more, comprehend it well, and approach it critically, but they also need to start using different strategies to process such an amount of information. Research suggests that EFL learners have trouble reading academic texts in English and at the same time they use ineffective reading strategies (Al-

Mekhlafi, 2018). Basically, students are asked to be metacognitively aware of different techniques and methods to effectively process study materials to retain them in their long-term memory. However, the situation has significantly changed since March 2020 when the COVID-19 pandemic hit the world. Suddenly, students needed to be much more self-regulated in their studies, which required a lot of online and offline reading. But research (Green, 2021) indicates that self-regulated learning remains largely absent from educational standards and curricula.

The findings of this study indicate that there is a mixed and wide variation of students reading competency levels when students first enter the university and that a significant number of first-year entrants are inadequately prepared for university reading.

Metacognitive awareness reading strategies can be divided into three subcategories according to the MARSI inventory (Mokhari & Reichard, 2002; Mokhtari, Dimitrov & Reichard, 2018):

- Global reading strategies (GLOB) are procedures to implement goals and monitor their process, such as having a purpose in mind, previewing the text, skimming, predicting, and activating prior knowledge.
- Problem-solving strategies (PROB) are applied when a reader encounters challenges in reading such as guessing the meaning of unknown words, rereading the text, adjusting the reading speed, reading aloud, and visualizing information in the text.
- Support reading strategies (SUP) include using a dictionary, taking notes, using outside reference aids, paraphrasing what was read, and annotated to help a reader to understand a text (Ghaith & El-Sanyoura, 2019; Lin, 2019).

Research on metacognitive reading strategies has gained popularity throughout the years and is still topical today (Habák & Magyar, 2019; Lin, 2019; Ahmed, 2020). Metacognition is understood as a higher-level ability and involves learners' monitoring, regulating, managing, and evaluating their cognitive processes (Lin, 2019). In addition, the findings reveal that metacognitive skills are strongly associated with higher academic achievement (Ghaith & El-Sanyoura, 2019) and well-being (Craig et al., 2020). Metacognition helps learners decide which strategies they can use and how they should use them (Ahmed, 2020). It has been proven that students who use reading strategies can understand and recall more information, which is also associated with their higher language proficiency (Habák & Magyar, 2019). Continuously, metacognitive awareness goes hand in hand with proficient strategic reading because the students can consciously direct the reasoning process. Additionally, they effectively work with strategies while reading and can apply these strategies and reasoning skills to future reading tasks (Yüksel & Yüksel, 2012). In addition, a literature review by Lin (2019) demonstrates four factors that concern reading strategy use: English proficiency, first language (L1) literacy experience, gender, and motivation. Particularly foreign language proficiency and gender seem to play a significant role in second language reading comprehension and choice of reading strategy (Rianto, 2021). In fact, more skilled and proficient readers appear to exploit a wider variety of strategies than less skilled and proficient readers (Peart, 2017). Moreover, the study by Rianto (2021) shows that female students scored higher in overall problem-solving and support strategy use than their male counterparts. On the contrary, Ganji, Yarahmadzehi, and Sasani (2018) found no significant differences between their male and female university students in the use of metacognitive awareness reading strategies. In addition, all their students exhibited a high level of MARSI. These findings were also confirmed by Haydee and Bulusan (2020) who found university freshmen demonstrated a high metacognitive awareness of reading strategies while reading academic texts in English. Problem-solving strategies were their prime choice, followed by support strategies, and global strategies. Moreover, the authors also pointed out differences in the use of MARSI among study disciplines, which was most likely connected to the need, nature, and types of texts used in each discipline. For example, undergraduate business students demonstrated that metacognitive reading awareness influenced their academic success (Sheikh, Soomro & Hussain, 2020). Additionally, Aziz, Nasir, and Ramazani (2019) identified that high-performance students used the strategies more often than low-performance students.

However, as the results of these studies (e.g., Ganji, Yarahmadzehi & Sasani, 2018; Rianto, 2021) reveal, there is still a gap in the research conducted about first-year university students and the

reading strategies they apply in new learning environments, including academic texts. Hence, the research questions are as follows:

- (1) *What reading strategies do freshman business students use most often when reading academic materials in a foreign language (FL)?*
- (2) *What is the level of reading strategies among freshman business students when reading academic materials in FL? What is the difference between male and female freshman business students regarding the mentioned strategies?*

Based on the literature studied, we propose the following hypotheses:

H1: First-year Slovak students are aware of metacognitive reading strategies at a low level.

H2: Female students will be more aware of metacognitive strategies than their male counterparts.

The aim of this study was to explore first-year university Business English students' metacognitive awareness about reading strategies as well as develop recommendations for how to teach these strategies to students so that they can use them efficiently in their university studies.

2. Materials and Methods

3.1. Participants

The research was performed in December 2021 at a Central European University located in Slovakia, more specifically at the University of Economics in Bratislava. At the time of the survey, the students had experienced their first semester of studies remotely. The survey was conducted among 192 freshman university students in their specialized courses in Business English as a foreign language. The research sample included students of the faculties of the national economy, commerce, economic informatics, business management, and international relations. Their average age was 20 and they were enrolled in a Business English course corresponding to B2 level, according to the Common European Reference Framework for languages.

3.2. Instruments

The research instrument was metacognitive reading strategies awareness (MARS) questionnaire developed by Mokhtari and Reichard (2002) containing a list of 30 statements rated on a scale from 1 to 5 (1 denoting the least agree with the statement 5 denoting most agree with the statement). All 30 statements were presented in three categories of strategies (global reading strategies – GLOB: 13 statements; problem-solving strategies – PROB: 8 statements; and support reading strategies: SUP – 9 statements). They are discussed in the Results section. Additionally, we asked for demographic data (i.e., age, gender, year of study) in the questionnaire.

3.3. Data Collection

When collecting data, all participants agreed to participate in the online survey by taking part. It was voluntary and no instruction was given to them by the researchers. All GDPR was strictly followed. The demographic data are presented in this manuscript without any personal identification. This research was approved by the Ethics Committee no. 2/2021 of the University of Hradec Kralove, Czech Republic.

3.4. Statistical Analysis

The statistical analysis consisted of evaluating the descriptive characteristics of the respondent data and calculating the average score of students in the use of the groups of strategies and with respect to individual strategies. A two-sample T-test for independent samples was used to assess the significance of the difference in average scores between female and male students and tested the null hypothesis that the average score does not differ between the genders against the alternative hypothesis that there would be a significant difference in the average score. The significance level for testing was set at 0.05. According to the results of Levene's test of variance equality, a variant of the

T-test for equal variances was chosen. All analyses were performed using IBM SPSS Statistics 28 software.

3. Results

Based on the demographic results, 192 freshman students participated in the questionnaire online survey. Female representatives slightly outnumbered the male students since the females included 111 respondents (57,8 %) and the male representatives were 81 (42,2%). The average age was 19.74 years.

3.1. Results of the Researched Strategies

Table 1 below provides an overview of the surveyed metacognitive reading strategies. The findings reveal that students reached an average score of 3.2104 on the MARSI questionnaire. According to this result, they applied metacognitive reading strategies on a medium level (see the explanations below). The most exploited strategies, however, were *Problem-Solving Strategies* with an average score of 3.7598 (level *High*), followed by *Global Reading Strategies* with an average score of 3.0733 (level *Medium*) and the least used strategies were *Support Reading Strategies* with an average score of 2.9201 (level *Medium*).

Table 1. Results of the strategies investigated.

	Minimum	Maximum	Mean	Std. Deviation
GLOB mean score	1.54	4.38	3.0733	.51624
PROB mean score	1.38	5.00	3.7598	.55342
SUP mean score	1.33	4.44	2.9201	.59324
Overall mean score	1.53	4.20	3.2104	.45774

Explanations: GLOB – global reading strategies, PROB – problem-solving strategies, SUP – supportive reading strategies; 3.5 or higher = High; 2.5 – 3.4 = Medium; 2.4 or lower = Low.

In addition, Table 2 below provides a more detailed analysis of the applied metacognitive reading strategies, which further confirms the findings from Table 1. The most common strategies are *When the text becomes difficult, I reread to increase my understanding*; *When the text becomes difficult, I pay closer attention to what I'm reading*; and *I try to get back on track when I lose concentration*, which belongs to *Problem-Solving Strategies*. On the contrary, the less applied strategies are as follows: *I discuss what I read with others to check my understanding*, *I take notes while reading to help me understand what I read*, and *I ask myself questions I like to have answered in the text* belonging to the group of *Support Reading Strategies*.

These findings indicate that students try hard to detect the meaning of the text. However, they are not used to reflecting on it and/or discussing it with others.

Table 2. Results of individual strategies.

	Mean	Std. Deviation
GLOBI have a purpose in mind when I read.	3.47	.920
SUP I take notes while reading to help me understand what I read	2.36	1.127
GLOB I think about what I know to help me understand what I read.	3.59	.998
GLOB I preview the text to see what it's about before reading it.	3.18	1.266
SUP When text becomes difficult, I read aloud to help me understand what I read.	3.35	1.345
SUP I summarize what I read to reflect on important information in the text.	3.15	1.058
GLOB I think about whether the content of the text fits my reading purpose.	3.11	1.060
PROB I read slowly and carefully to be sure I understand what I'm reading	3.73	.996

SUP	I discuss what I read with others to check my understanding.	2.36	1.019
GLOB	I skim the text first by noting characteristics like length and organization.	2.85	1.173
PROB	I try to get back on track when I lose concentration.	4.05	.911
SUP	I underline or circle information in the text to help me remember it.	3.20	1.327
PROB	I adjust my reading speed according to what I'm reading	3.90	.954
GLOB	I decide what to read closely and what to ignore.	3.27	1.037
SUP	I use reference material such as a dictionary to help me understand what I read.	3.10	1.240
PROB	When the text becomes difficult, I pay closer attention to what I'm reading.	4.08	.870
GLOB	I use tables, figures, and pictures in the text to increase my understanding.	2.96	1.168
PROB	I stop from time to time and think about what I'm reading.	3.09	1.014
GLOB	I use context clues to help me better understand what I'm reading.	2.77	1.038
SUP	I paraphrase (restate ideas in my own words) to better understand what I read.	3.18	1.164
PROB	I try to picture or visualize information to help me remember what I read.	3.49	1.176
GLOB	I use typographical aids like boldface and italics to identify key information.	2.87	1.348
GLOB	I critically analyze and evaluate the information presented in the text.	2.63	1.030
SUP	I go back and forth in the text to find relationships among ideas in it.	3.05	1.065
GLOB	I check my understanding when I come across conflicting information.	3.53	.965
GLOB	I try to guess what the material is about when I read.	3.00	1.093
PROB	When the text becomes difficult, I reread it to increase my understanding.	4.09	.931
SUP	I ask myself questions I like to have answered in the text.	2.53	1.270
GLOB	I check to see whether my guesses about the text are right or wrong.	2.72	1.182
PROB	I try to guess the meaning of unknown words or phrases.	3.64	1.074

3.2. Differences between Genders

As Table 3 illustrates, there is no difference at the significance level of 0.05 between female and male students in terms of the achieved average score within the groups of strategies. There is also no significant difference between genders in terms of the overall average score ($F=$ mean 3.2219; $M=$ mean 3.1947; sign. .685).

However, significant differences arise if one considers individual-specific strategies. In the *Global Reading Strategies* group, there is a difference in the use of strategies *I use typographical aids like boldface and italics to identify key information*, which is more common among female students. On the contrary, *I critically analyze and evaluate the information presented in the text* was more often applied by male students. In the *Problem-Solving Strategies* group, there were differences in the use of strategies *I read slowly and carefully to be sure I understand what I read* and *I try to get back on track when I lose concentration* in favor of female students in both cases. In the group *Support Reading Strategies*, there are differences in the use of strategies *When text becomes difficult, I read aloud to help me understand what I read*; *I underline or circle information in the text to help me remember it*; and *I use reference material such as a dictionary to help me understand what I read*, which female students used more often, and strategies as *I ask myself questions I like to have answered in the text*, which was more common among male students.

Table 3. Gender differences.

	Gender	Mean	Std. Deviation	t	Significance
GLOB mean score	Female	3.0457	.52351	-.866	.388
	Male	3.1111	.50690		
PROB mean score	Female	3.7703	.52509	.307	.759
	Male	3.7454	.59307		
SUP mean score	Female	2.9890	.61225	1.895	.060
	Male	2.8258	.55609		
Overall mean score	Female	3.2219	.45725	.407	.685
	Male	3.1947	.46078		

4. Discussion

The findings of this study indicate that the first-year students applied metacognitive reading strategies at a medium level (3.2) which does not confirm our hypothesis on students being aware of them on the low level. Proven, the most commonly used strategies were problem-solving strategies, such as *When the text becomes difficult, I reread to increase my understanding; When the text becomes difficult, I pay closer attention to what I'm reading; and I try to get back on track when I lose concentration*, followed by global reading strategies. The least often used strategies are the support ones, such as *I discuss what I read with others to check my understanding; I take notes while reading to help me understand what I read; and I ask myself questions I like to have answered in the text*. The findings are in compliance with EFL College students in Kuwait. The findings of this study performed among 80 students reported an overall high awareness of metacognitive reading strategies. As with Slovak students, the most common individual strategies were problem-solving followed by global and support strategies (Alrabah & Wu, 2018). This was also true for the study by Haydee and Bulusan (2020). In comparison to the older students, the study of 240 fourth-year students majoring in English and French at Jordan universities reported a moderate use of metacognitive reading strategies with a tendency, to global reading strategies, followed by support and problem-solving strategies (Rabadi, Al-Muhaissen, & Al-Bateineh, 2020). Interestingly, in Oman 74 tertiary EFL students used a high level of all three types of reading strategies with no regard to various levels of learners (Al-Mekhlafi, 2018). It might be concluded that the strategies used depends also on the context, culture, and education of students in the given country. However, this is in contrast with the study by Bećirović, Brdarević-Čeljo, Sinanović (2017) in the Bosnian context where nationality did not have an effect on the overall use of metacognitive reading strategies but gender, grade level, and study field.

Continuously, in the Chilean context, when students were supported by metacognitive instructions as cognitive supports, the effectiveness of peer interaction tasks was improved (Sato, 2020). It shows when a teacher demonstrates the proper way of using metacognition, the enhancement of students' rise regarding this matter alongside their self-regulation.

As far as the second research question on the difference between male and female freshman business students in their use of the mentioned strategies was concerned, there was no significant difference between female and male students in terms of the achieved average score within the groups of strategies. Therefore, the hypothesis of female students being more aware of metacognitive awareness was not confirmed. Interestingly, a similar study on Central European students (Poland, Hungary, Slovakia, Czech Republic) with a similar questionnaire – Metacognitive Reading Strategies Questionnaire (MRAQ) distinguishing between analytic-cognitive and programmatic-behavior components reported similar findings in all universities researched, however, pragmatic metacognitive reading strategies prevailed over analytic ones with an emphasis on females preferring pragmatic strategies, no difference in analytic ones when it comes to the gender. Also, when it comes to the difference between L1 and L2 in the educational context in Taiwan, the study by Jou (2014) revealed that both analytic and pragmatic strategies are used when students read L1 academic texts more than L2 ones. On the contrary, Al-Mekhlafi (2019) reports that the results were in favor of females in his study, especially on the level of problem-solving and supporting reading strategies. It

is in line with the findings of this study on the individual level of problem-solving strategies among female students when they say that *I read slowly and carefully to be sure I understand what I read and I try to get back on track when I lose concentration*. The findings tend to indicate that female students seem to be more careful and thorough readers than male students. In addition, they try to retain the information by highlighting it: *I use typographical aids like boldface and italics to identify key information*. On the contrary, men seem to have a more analytical mind, which is associated with their nature, as they admit: *I critically analyze and evaluate the information presented in the text*.

Based on the results described above, the following recommendations to develop metacognitive awareness of reading strategies with an emphasis on support strategies among first-year university students might be as follows:

- To support students in discussing what they read with their classmates either in the face-to-face classrooms in pairs or online in the breakout rooms in groups of three or in pairs and thus also develop their collaborative and reflection skills as well as skills of critical thinking.
- To stimulate students to take notes while reading and highlighting the most important information with an emphasis on gist and details as well through, for example, Google doc. More specifically, it explains why it is essential to take notes so they can retain the text information in their long-term memory.
- To show the importance of previewing the text and asking questions/making predictions about what the text will be about to help readers activate their knowledge base, which aids comprehension.
- To enhance students' interest in reading by asking them to bring their own reading materials for the class to motivate them to read.
- To encourage both genders to use visual aids, especially male students, and stimulate female students to express a more critical point of view on the text.
- Overall, to encourage learners' self-regulation learning (Mohammadi et al., 2020).

Additionally, according to Rabadi, Al-Muhaisen, and Al-Bateineh (2020), findings indicate that EFL students recognize which strategies to use but may not know how to use them successfully. In other words, knowing how to use them correctly is important rather than just knowing which strategies to employ. Importantly, to identify students' awareness of metacognitive reading strategies, teachers can implement evidence-based instruction to maximize the use of students' metacognitive reading strategies (Alrabah and Wu, 2018).

The limitations of this study consisted of including only first-year students of EFL at the university. Additionally, even though the students are in the same B2 Business English course, their proficiency level ranges from B1-B2 levels. Furthermore, the study does not distinguish between reading online and offline.

5. Conclusions

The study contributes to the spectrum of research on metacognitive reading awareness in the central European context – Slovakia. Based on the results, the study suggests that students should develop more supportive reading strategies and in this respect, the teacher should guide them in how to do it. Furthermore, the results show that there was a difference between male and female students on the individual level of reading strategies. The article generates recommendations, such as discussing the study matter with colleagues in the breakout rooms, taking notes/highlighting through google doc, previewing the text by asking questions and encouraging students to bring their own reading materials to the class as well as taking into account a difference between genders in the COVID-19 learning environment.

Future research might then focus on empirical research concentrating on the process of applying specific recommendations described above to improve students' metacognitive reading skills. Furthermore, researchers might also investigate the use of individual reading strategies in an online and offline environment.

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