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Metacognitive Awareness of Reading Strategies on Second Language Vietnamese Undergraduates

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Abstract
Metacognitive awareness is considered a crucial factor in reading comprehension. In the present study, the quantitative research method was applied using descriptive statistics, T-test, and ANOVA to identify: (1) What is second language (L2) Vietnamese students' metacognitive awareness of reading strategies? (2) Are there any significant differences between male and female L2 Vietnamese students in metacognitive awareness of reading strategies? (3) Are there any significant differences between good, medium, and poor L2 Vietnamese readers in metacognitive awareness of reading strategies? One hundred and twenty-three English-majored undergraduates of Hong Bang International University completed an online survey which discovers their frequencies of using problem-solving, global, and support reading strategies. They next took a comprehension test on the TOEIC format test, whose results were adopted to classify students into three levels, namely good, medium, and poor readers. Reading strategies usage mean scores were compared across three strategy types and these scores were collated between groups. Results showed; first, reading strategies were used in academic texts at medium frequency level with the high usage of problem-solving strategies, followed by medium usage of support and global reading strategies. Second, female readers showed a higher frequency of using support strategies than males did. Third, learners' proficiency levels were found to predict the levels of metacognitive awareness in reading with high-reading-ability students applying reading strategies more frequently than poor-reading-ability ones. This is significant to indicate that instructors should integrate all three reading strategies in their teaching, especially, raising awareness of global and support reading strategies among Vietnamese learners.

Keywords: Metacognitive awareness, reading strategies, second language, Vietnamese undergraduates, reading comprehension, Survey of Reading Strategies

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Introduction

Reading is "an interactive cognitive process" (Yüksel & Yüksel, 2012, p.894), including planned steps taken to make sense of what to read (Sheorey & Baboczky, 2008). Successful readers usually use different strategies while reading, such as using their knowledge or reading carefully to understand the written materials (Sheorey & Mokhtari, 2001). Besides, reading strategies are one of the effective solutions for poor readers to improve their reading comprehension and aid them to become strategic readers (Meniado, 2016; Temur & Bahar, 2011). In other words, reading strategies play a vital role in academic contexts and reading comprehension. Thus, educating metacognitive strategies might lead to an enhancement in reading comprehension as reading strategies are used by readers' metacognitive awareness (Temur & Bahar, 2011).

Considering the importance of metacognitive awareness of reading strategies (MARS) in accelerating reading comprehension, numerous studies have adapted both original of MARS developed by Mokhtari and Reichard (2002) (e.g., Arrastia, Zayed, & Elnagar, 2016; Fitrisia, Tan, & Yusuf, 2015; Mokhtari, Dimitrov, & Reichard, 2018; Pammu, Amir, & Maasum, 2014; Wu, Valcke, & Van Keer, 2012) and a second version of Mokhtari and Sheorey (2002) like Temur and Bahar (2011) to investigate students' awareness of reading strategies. These studies showed that among three factors of reading strategies, problem-solving strategies were utilized more frequently than global and supporting reading strategies. Moreover, they concluded that reading strategies and reading comprehension are closely related.

However, it is worth considering that individual's awareness of applying reading strategies might be varied across languages (Arrastia et al., 2016). Similarly, other factors, including proficiency levels, learners, genders, and educational background might also affect students' awareness of reading strategies (Mokhtari et al., 2018). In terms of research instrument, the three-factor model of MARSI (used for L1 learners) and Survey of Reading Strategies - SORS (used for ESL learners) are reasonable to adapt to investigate learners' metacognitive awareness of reading strategies (Mokhtari & Reichard, 2002; Wu et al., 2012). According to this knowledge, therefore, the present study aims to address how often Vietnamese undergraduates apply different types of reading strategies in academic texts by adapting the SORS developed by Mokhtari and Sheorey (2002). Thus, it is hoped that the findings could be useful to ESL/EFL instructors when they design reading course syllabus for L2 learners to develop the habit of using reading strategies, especially for EFL Vietnamese students. Three research questions guided this study:

1. What is L2 Vietnamese students' metacognitive awareness of reading strategies?
2. Are there any significant differences between male and female L2 Vietnamese students in metacognitive awareness of reading strategies?
3. Are there any significant differences between good, medium, and poor L2 Vietnamese readers in metacognitive awareness of reading strategies?

Literature Review

Metacognitive Awareness

According to Flavell (1976), metacognition refers "to one' knowledge concerning one' own cognitive processes and products or anything related to them" (p.232). To be specific, it is individuals' awareness of their responsibility to monitor, regulate, and control their learning

activities (Livingston, 1997; Wilson, 1998; Wu et al., 2012). Accordingly, learners manage their learning process, plan their thinking before finishing the task, control, and regulate their thinking by making arrangements (Scott, 2008). Thus, metacognition is essential to acknowledge how the task is accomplished (Schraw, 2001).

There are three types of metacognitive awareness, namely declarative, procedural, and conditional knowledge (Brown, 1987; Jacobs & Paris, 1987; Schraw & Moshman, 1995). Based on the definitions of Schraw (2001), declarative knowledge is to know about things and factors affecting an individual's performance, for example, learners know about their memory. Procedural knowledge is defined as to know how to do things. A good example is that learners apply different strategies to deal with problems like looking up unfamiliar vocabulary during their reading process. Finally, conditional knowledge is to know why and what strategies are chosen to use.

To sum up, metacognitive awareness entails knowledge of what strategies to use, how to manage the comprehension, and which appropriate strategies are necessary for the task (Auerbach & Paxton, 1997).

Reading Strategies

Rajoo and Selvaraj (2020) defined reading strategies as "how readers interact with the written texts and how these strategies help to enhance text comprehension which includes mental plans" (p. 1301). The interaction between learners and written texts includes acknowledging the aim for reading, which parts of the text they focus, and how they solve problems to understand the text while reading (Block, 1986). To be specific, Iwai (2011) emphasized three important processes of reading strategies: planning, monitoring, and evaluating strategies. Planning strategies are used before reading like previewing the text. By looking at pictures and headings, readers could guess the meaning of the reading text. During the reading process, readers could use monitoring strategies such as checking unfamiliar words or choosing which reading parts to pay attention. After reading, learners might ask themselves about knowledge they gain from the reading and they might use the information from the text in other situations.

It can be recognized that reading strategies take more time for readers; however, these aforementioned processes may assist them perform effectively in their reading comprehension (Yuksel & Yuksel, 2012). Being aware of these processes is defined as metacognitive awareness of reading strategies, so learners should practice these strategies regularly and it gradually becomes a natural part of their reading (McNamara, 2007).

Survey of Reading Strategies (SORS)

Based on the relationship between metacognitive awareness of reading strategies and reading comprehension, we found that the content of Metacognitive Awareness of Reading Strategies Inventory (MARSI) Version 1.0 developed by Mokhtari and Reichard (2002) supports three learning activities (monitoring, regulating, and controlling) mentioned by Livingston (1997) and Wilson (1998). Nevertheless, MARSI was "originally designed for students who are native English speakers, it was inappropriate for use with non-native speakers" (Mokhtari & Sheorey, 2002, p. 3). Thus, the Survey of Reading Strategies (SORS) was developed by Mokhtari and Sheorey (2002) which is more suitable for ESL learners. This instrument is helpful for ESL/EFL students

to discover their reading strengths and weaknesses. In particular, there are three factors of metacognitive awareness consisting of Global Reading Strategies (GLOB), Problem Solving Strategies (PROB), and Support Reading Strategies (SUP). GLOB contains 13 items that refer to techniques that learners manage their reading (e.g., having a purpose in mind when reading or deciding what to read and what to ignore). PROB comprises eight items regarding actions used while reading (e.g., reading slowly to make sure what reading or paying closer attention to what reading). SUP contains nine items related to tools that students can use to better comprehend the reading text (e.g., translating from English into native language or paraphrasing to better understand what reading). The detail of these three main categories of SORS is presented in Appendix B.

Studies Related to Metacognitive Awareness of Reading Strategies

As mentioned above, the first and second versions of the MARSI and SORS were adapted by numerous researchers. There are four highlighted issues related to MARSI and SORS raised from these studies. First, students' proficiency is one of the key factors affecting students' metacognitive awareness of reading strategies **(**Mokhtari & Sheorey, 2002). Second, female learners used more reading strategies than male learners did (Arrastia et al., 2016; Mokhtari & Sheorey, 2002; Temur & Bahar, 2011). Third, problem-solving strategies were the most popular strategies among three types, compared to global and supporting strategies (Pammu et al., 2014; Fitrisia et al., 2015; Temur & Bahar, 2011; Yüksel & Yüksel, 2012). Finally, there was a close relationship between metacognitive awareness of reading strategies and reading comprehension ability, which should go hand in hand (Fitrisia et al., 2015; Wu et al., 2012). To be specific, the following section reviews these studies from the earliest to most recent.

Mokhtari and Sheorey (2002) carried out SORS on 152 ESL and 150 L1 US learners from high school, college, and university with the purpose of raising students' awareness of reading strategies. The study found that low-ability students seemed to have lower levels of awareness than those of high-ability. Thus, students who had low metacognitive awareness usually had difficulties in terms of reading materials, for instance, they felt that they struggled with unfamiliar words from the text. As for gender, American female students used reading strategies more frequently than male students.

Temur and Bahar (2011) investigated Turkish university students' metacognitive awareness strategies. All participants are freshmen studying English Language Education. The finding showed that gender was one of the key elements that affected students' reading strategies. In fact, female students' scores were higher than males' in all three categories of reading strategies, which is in line with Mokhtari and Sheorey's (2002) finding. In terms of three factors of reading strategies, Turkish students used problem strategies most frequently, followed by global and supporting strategies. Similarly, Yüksel and Yüksel (2012) found the same preference in applying three reading strategies by 16 EFL undergraduate Turkish students. It can be concluded that Turkish students had high awareness of reading strategies, especially they often utilized problem-solving strategies to solve reading comprehension problems.

In another context, Wu et al. (2012) validated the metacognitive awareness of reading strategies inventory on 2119 high school Chinese students. There are two main results figured out

by the researchers. First, students monitored and controlled their reading strategies in reading comprehension. Second, metacognitive awareness of reading strategies of Chinese students and reading comprehension ability were closely correlated. It means that understanding and using the three terms of reading strategies frequently benefit students' reading performance. Thus, students are encouraged to apply all these groups of strategies to perform well in their reading.

In Indonesia, Pammu et al. (2014) explored the awareness of reading strategies on 40 low proficiency learners. The results indicated that participants applied the reading strategies in their reading; however, the frequent usage was varied among three types of reading strategies, which was the same as Temur and Bahar's (2011) and Yüksel and Yüksel' s (2012) findings. For problem-solving strategies, students usually applied strategy of "reading slowly but carefully to be sure what to read" at high level. In terms of global support strategies, "setting purpose for reading, previewing text, determining what to read, resolving conflicting information, and confirming prediction" were indicated as high-frequency usage group. For support reading strategies, underlining or circling information in the text to help comprehension and using reference materials to improve comprehension were also reported at high level. In the same context, Fitrisia et al. (2015) also found that problem solving strategies were popular than global and support reading strategies.

Regarding the effect of gender on adopting reading strategies, Arrastia et al. (2016) explored 160 males and females L2 Egyptian university students' metacognitive awareness of reading strategies. By applying a series of t-test comparing the mean scores on the three terms of reading strategies, the researchers found that females used strategies more frequently than males did in all three categories, which is consistent with the findings of Mokhtari and Sheorey (2002) and Temur and Bahar (2011).

Last but not least, Mokhtari et al. (2018) invited 1,164 students in grades 6-12 with different groups (Caucasian, Hispanic, & African-Amerian) to participate in their study with the purpose of testing factorial invariance. Accordingly, they found evidence that there is uniformity in students' awareness on reading strategies across gender and ethnic groups. It means that it is possible to use the survey of MARSI to compare between genders and ethnic groups, and across student populations in order to explore students' awareness of reading strategies. Then the researchers encourage future research to apply MARSI to figure out students' level of metacognitive reading strategies.

Based on the above studies, some research gaps are worth noting. First, most studies seemed to focus on high school students (e.g., Mokhtari & Sheorey, 2002; Mokhtari et al., 2018; Wu et al., 2012); and undergraduates in different majors (e.g., Arrastia et al., 2016; Fitrisia et al., 2015; Temur & Bahar, 2011; Yüksel & Yüksel, 2012). Gaining insights into English reading language of L2 Vietnamese learners majoring in English is crucial since it may provide us with closer perspectives regarding obstacles encountered in English reading texts, compared to those reported by other majors and educational levels.

Second, as the suggestions from previous researchers that promoting metacognition starting with building an awareness among students will facilitate academic success, especially it

is important for learners to be aware of the reading strategies for their reading comprehension (Mokhtari et al., 2018; Schraw, 2001; Yüksel & Yüksel, 2012). Thus, the current study should be carried out to raise the awareness of reading strategies on Vietnamese students to enhance their reading comprehension.

Finally, among the above studies, metacognitive awareness of reading strategies has been conducted in different Asian contexts. However, it has been scarce in Vietnamese context. Thus far, to the best of our knowledge, Nguyen and Trinh (2011) adapted the survey of reading strategies from Mokhrari and Sheorey (2002). They explored metacognitive strategies using by 84 Vietnamese students in grade 11. By applying mixed research methods, the researchers found that students most used problem-solving strategies in academic texts, which means that students are insufficient of global and support reading strategies knowledge. This supports the findings of Fitrisia et al.'s (2015), Pammu et al.'s (2014), Temur and Bahar's (2011), Yüksel and Yüksel's (2012) studies. Besides, there is a strong connection between three reading strategies types and learners' reading comprehension which is in line with the findings of Fitrisia et al.'s (2015) and Wu et al.' s (2012) studies. According to these results, the authors recommended that teachers should put reading strategies into consideration when designing curriculum of reading course and create more activities related to these strategies during class as being suggested by Mokhtari et al. (2018).

Taking into account the context in Vietnam and above research gaps, it is necessary to investigate metacognitive awareness of reading strategies on L2 Vietnamese undergraduates majoring in English language. It is hoped that instructors might design effective curriculum in specific context and situation.

Research Methods

Participants

Convenient sampling was recruited to enter the present study in September 2020, which were 123 EFL Vietnamese undergraduates at Hong Bang International University in Vietnam (41 males and 82 females), aged from 17 to 28 (M = 19.18; SD = 2.69). Participants were selected based on two criteria. First, their major is Teaching English; in other words, they will be ESL/ EFL teachers in the future. It is necessary to investigate teachers' metacognitive awareness since Arrastia et al. (2016) mentioned that "EFL teachers without metacognitive awareness of their reading strategies may not able to effectively facilitate the development of such strategies among their prospective students" (p.46). Second, first-year students were chosen to join this study because after testing their metacognitive reading strategies, there will be various implications in training them in the following reading courses. For example, teachers might acknowledge their students' reading awareness and adjust a suitable curriculum for their target learners. A vast majority of them reported that they had not got any proficiency certificate (87%) while 16 participants have got International English Language Testing System (IELTS with no more than 6.5) or Key English Test (KET). In terms of reading strategies, 73% of them revealed that they have never been taught. When it comes to self-rating of their reading proficiency based on 5-point Likert scale, they reported a mean of 2.51 (SD=1.05).

Materials

To answer the research questions, a demographic information survey, a metacognitive reading strategies survey, and a reading comprehension test were employed in this study. To elicit basic background information, part one of the survey, including short-answer questions and scaling questions, asks information of age, gender, English certificate, self-rating on reading skill, and whether participants have learned reading strategies (see Appendix A). Part II of the survey consisting of 30 5-point Likert scale questions examines participants' metacognitive awareness of reading strategies. They ask learners to rate how frequently they used three types of reading strategies (global, problem-solving, and supporting strategies). The questionnaire was adapted from Mokhrari and Sheorey (2002) (Appendix B) because it was designed for L2 learners. Based on this purpose of the study, the researchers used this survey as the primary method because a questionnaire is the most suitable tool to measure metacognition and evaluate huge student groups in terms of data collection effectively and reliably (Pintrich & DeGroot, 1990; Tobias & Everson, 1996).

As for the reading comprehension test, there are 50 questions carried out after completing the questionnaire to understand participants' proficiency because "reading difficulties are closely associated with L2 readers' level of proficiency in the target language" (Mokhtari & Sheorey, 2002, p.3). The test is designed based on reading test format of TOEIC because Vietnamese learners at the university level are familiar with this kind of test.

Research Procedures

First, learners were asked to complete the questionnaire on Google form in a lab-based setting with instructors' assistance. Learners have informed the aim of the study and the fact that there were no right or wrong responses in the SORS. They were asked to express their opinions honestly by tick the box of appropriate scale that they used. To ensure the reliability of the survey, the first author showed the questionnaire on the screen and gave the explanation in each part; then students followed the instruction. The first author explained the questions in Vietnamese to make sure that students understood every single question, participants then completed the questionnaire in around 10 to 15 minutes. Second, participants were requested to do the paper comprehension test within 50 minutes under teacher's supervision. After collecting data, incomplete questionnaires were discarded, 123 appropriate questionnaires were coded for analysis.

Coding and Analysis

To examine reading strategy use, mean scores of three types of strategies were calculated, and descriptive statistics were analyzed. The frequency of strategy usage was categorized based on three groups of general language learning strategy proposed by Oxford and Burry-Stock (1995): high (mean of 3.5 or higher), medium (mean of 2.5-3.4), and low (mean of lower than 2.5). These usage levels provided a criterion to compare between different groups. In order to investigate any significant differences between groups based on gender, mean values of each strategies were counted for males and females; an independent sample T-test was then conducted to compare the mean scores of individual strategies and different groups between males and females.

The reading comprehension test was marked in scale of 100 points and the scores were then categorized into three groups. Participants who scored over 70 were grouped into good

readers, those whose scores were 31 to 69 were categorized as medium readers and learners scoring under 30 were classified as poor readers. Their proficiency levels were ranked as follows.

Table 1. *Students' reading proficiency*

Scores	Level	N
≥70	Good	22
31-69	Medium	35
≤30	Poor	13

In order to test significant differences between good, medium, and poor readers, means on each strategy type of different ability readers were calculated and compared using one-way ANOVA.

Results

Participants' Metacognitive Awareness of Reading Strategies

To answer the first research question, the mean scores indicating frequency of strategy use (from never to always) were calculated and interpreted. The overall mean score of thirty strategies in SORS was 3.38, SD= .68 which suggested medium usage of reading strategies or participants *sometimes* used them. To explain how learners rated strategy items, the proportion of each frequency was calculated and reported in Figure one.

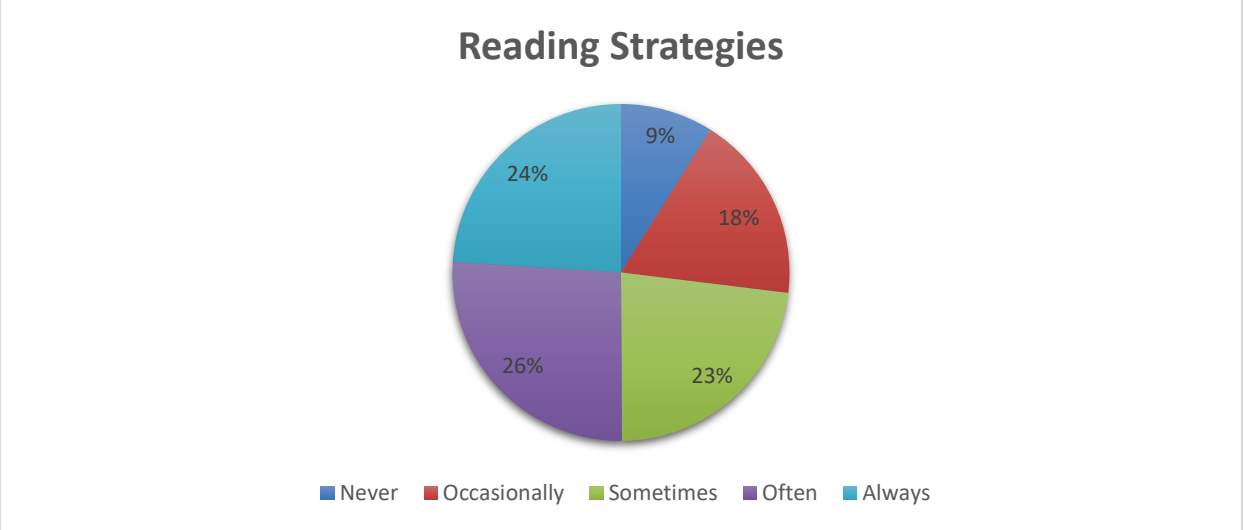

Figure 1. Participants' overall of using reading strategies

Figure one shows that more than a half of learners reported that they *often* or *always* apply reading strategies when they read academic texts. Moreover, a modest percentage (8%) of students revealed that they never adopt these strategies. These findings implied that participants were aware of utilizing different reading strategies when it comes to academic texts. In order to investigate learner's preference in different types of reading strategies, the mean values of three strategy categories, namely global, problem-solving, and support reading strategies were separately counted and analyzed as shown in Table two.

Table 2. *The distribution of participants' metacognitive awareness in terms of strategy categories*

Metacognitive Awareness	N	Mean	SD
Global reading strategies	123	3.24	.73
Problem solving strategies	123	**3.68**	.79
Support strategies	123	3.36	.74
Total reading strategies	123	3.38	.68

As Table two reveals that participants reported medium frequency usage of all reading strategies except for problem-solving strategies. Learners used problem-solving strategies more frequently than other strategies with the mean value of 3.68 (SD= .79), indicating a high usage of these strategies (M ≥ 3.5), followed by support and global reading strategies with mean values of 3.36, SD=.74 and 3.24, SD= .73, respectively.

To interpret the reason of their preferences towards different reading strategies, the following section provided further description of three reading strategies categories with the highlighted most frequent strategy types.

Problem-solving Strategies

In terms of problem-solving strategies, mean scores of each strategy in this group were counted and descriptive statistics were shown in Table three.

Table 3. *Descriptive statistics for various problem-solving reading strategies*

Factors	Problem-solving strategies	Mean	SD
Prob1 (Q7)	Reading slowly and carefully	3.80	1.11
Prob2 (Q9)	Trying to keep focused after distractions	**3.97**	1.15
Prob3 (Q11)	Adjusting reading pace	3.52	1.07
Prob4 (Q14)	Focusing closely on the content of the text	**3.97**	1.09
Prob5 (Q16)	Pausing and thinking about what is read	3.34	1.09
Prob6 (Q19)	Visualizing information while reading to remember	3.41	1.12
Prob7 (Q25)	Reading again for better understanding	3.72	1.25
Prob8 (Q28)	Predicting the meaning of unfamiliar words	3.68	1.16

Table three indicates that six of eight strategies (75%) were reported to be applied with high frequency (mean scores of 3.5 or above) while two remaining strategies types fell in the medium usage group with their mean scores ranged from 2.50 and 3.49 (M= 3.34 and M=3.41). None of problem-solving strategies has mean scores below 2.4, which indicates low frequency of usage. In

other words, learners reported high metacognitive awareness of using problem-solving strategies in academic reading. Specifically, learners revealed that they preferred to adapt strategies of "trying to keep focused after distractions" and "focusing closely on the content of the text" with mean value of 3.97 indicating high frequency usage of these strategies (SD=1.15 and SD=1.09, respectively).

Global Reading Strategies

As for global strategies, twelve were reported with mean values ranging from 2.73 to 3.76 in which two of them (15%) fell in the high usage category and the rest belongs to medium usage group. In particular, learners most frequently adopted strategies of "guessing the meaning of the text" (Glob12) (M= 3.76, SD=1.09) and "using prior knowledge" in academic reading. By contrast, utilizing typographical features (M=2.75, SD=1.40) and analyzing what they read (M=2.73, SD=1.15) were revealed as least frequent global strategies which learners *sometimes* used when they read academic texts as shown in Table four.

Table 4. *Descriptive statistics for various global reading strategies*

Glob1 (Q1)	Setting purpose for reading	3.49	1.05
Glob2 (Q3)	Adopting prior knowledge	3.66	1.09
Glob3 (Q4)	Previewing text before reading	3.46	1.26
Glob4 (Q6)	Checking whether the content matches reading purpose.	3.07	1.36
Glob5 (Q8)	Skimming through text characteristics	3.29	1.22
Glob6 (Q12)	Deciding what to read	3.14	1.20
Glob7 (Q15)	Taking advantages of text features (tables)	3.36	1.28
Glob8 (Q17)	Using context clues	3.48	1.26
Glob9 (Q20)	Using typographical features	2.75	1.40
Glob10 (Q21)	Analyzing and evaluating what is read	2.73	1.15
Glob11 (Q23)	Checking understanding of new information	3.26	1.25
Glob12 (Q24)	Guessing the meaning of the text	3.76	1.09
Glob13 (Q27)	Confirming predictions about the text	3.04	1.26

Support Reading Strategies

Table five demonstrates the number of strategies in this group in detail. Interestingly, the ranging intervals between various strategies in this category are big with mean values ranging from 2.24 to 4.04. They suggested that participants showed high frequency usage to a few strategies in this group while there are some support strategies which they hardly adopted.

Table 5. *Descriptive statistics for various support strategies*

Factors	Support Reading Strategies	X	SD
Supp1 (Q2)	Taking notes while reading	3.36	1.22
Supp2 (Q5)	Reading aloud for better understanding	2.24	1.21
Supp3 (Q10)	Underlining and circling information in the text	3.73	1.26
Supp4 (Q13)	Adopting reference materials	**4.04**	1.15
Supp5 (Q18)	Paraphrasing for better understanding	3.23	1.28
Supp6 (Q22)	Going back and forth to find associations between ideas	3.03	1.27
Supp7 (Q26)	Asking oneself questions	2.72	1.22
Supp8 (Q29)	Translating into Vietnamese while reading	3.67	1.33
Supp9 (Q30)	Thinking of information in both languages	3.54	1.28

Table five reveals that while "adopting reference materials" was reported as the most frequent strategy (M=4.04, SD=1.15) among all strategies, fell into the high usage group, participants *occasionally* read aloud to understand the text better (M=2.24, SD=1.21) or reading aloud was used with low frequency.

Metacognitive Awareness of Males and Females

To answer the second research question which investigates whether there is a significant difference between level of metacognitive awareness between male and female participants, the mean scores of overall reading strategies usage and each type of strategies were calculated and presented in Table six.

Table 6. *Comparison of mean ratings for three different strategy categories by males and females*

	Males		Females		t-test			
					t	df	p	d
	Mean	SD	Mean	SD				
Overall reading strategies	3.33	.70	3.41	.67	-.669	121	.51	-.08767
Global reading strategies	3.28	.75	3.21	.72	.524	121	.60	.073
Problem-solving strategies	3.59	.85	3.72	.76	-.888	121	.38	-1.337
Support strategies	3.17	.79	3.45	.70	-1.975	121	.05*	-2.766

*Note: * = significant at the level of .05*

In terms of the descriptive statistics, females and males reported a medium usage of reading strategies in which female students rated slightly higher than male did (M=3.41, SD=.67 and

M=3.33, SD= .70, respectively). Both female and male readers revealed a medium strategy usage of global and support reading strategies (means between 2.50 and 3.49) while they reported high frequency usage of problem-solving strategies (M>3.5). Interestingly, females reported higher mean scores in overall reading, problem-solving, and support strategies than those of males meanwhile male readers revealed that they used global reading strategies more frequently than female readers did. Using an adjusted alpha level, the independent sample T-test reported a statistically significant difference in the means of support reading strategies usage for males and females; meanwhile no significant differences were found in other types of reading strategies ($p>.05$). In other words, males were not aware of using support strategies while reading. To gain insight into three SORS subscales, a series of T-tests comparing mean scores of males and females on each strategy was conducted as shown in Table seven (see Appendix C).

As for individual strategy usage, there were some significant differences found between males and females in one global strategy (guessing the meaning of the text), one problem-solving strategy (pausing and thinking about what is read) and three support strategies (underlining and circling information in the text; adopting reference materials and translating into Vietnamese while reading) ($p<0.05$). Specifically, female students showed high frequency usage of all these strategies since females' mean values were significantly higher than those of males. This finding emphasized that females hold higher awareness of some reading strategies than males did.

Metacognitive Awareness of Good, Medium, and Poor Readers

To answer the third research question, ratings on reading strategies of good, medium, and poor readers were calculated and presented in Table eight.

Table 8. *Overall metacognitive strategies of learners in different levels*

Reader level	N	Mean (Overall metacognitive strategies)	SD
Good	22	3.64	.39
Medium	13	3.37	.71
Poor	35	2.93	.57
Total	123		

Table eight shows that good readers reported that they adopted reading strategies with high frequency (M=3.64, SD=.39) while medium and poor readers had mean values of 3.37 and 2.93, respectively which indicate medium usage of reading strategies. The mean of good learners in using reading strategies was significantly higher than that of poor learners. However, the standard deviation in the table recommended that the amount of spread among different level of learners was not wide. Moreover, mean ratings on three subscales among readers were compared using ANOVA as shown in Table nine.

Table 9. *Comparison of mean ratings for three different strategy categories by good, medium, and poor readers*

	Good readers	Medium readers	Poor readers	ANOVA			
				df	F	η_p^2	P

	M	SD	M	SD	M	SD				
Overall reading strategies	3.64	.39	3.37	.71	2.93	.57	2	3.644	1.594	.029*
Global reading strategies	3.70	.49	3.19	.73	2.79	.67	2	6.374	3.097	.002*
Problem-solving strategies	4.03	.49	3.65	.82	3.15	.62	2	4.409	2.586	.014
Support strategies	3.21	.62	3.42	.78	2.92	.49	2	1.540	.838	.219

*Note: * = significant at the level of .05*

Table nine suggests that there was a statistically significant relationship between learners' reading comprehension scores and their ratings on reading strategies ($p<0.05$). There was also a statistically significant difference between learners' levels in global reading strategies usage while no significant differences were found in problem-solving and support strategies. These findings indicate that the better readers, the higher metacognitive awareness of applying reading strategies in academic texts, especially global strategies. .

Discussion

Reading Strategies Usage

In general, participants reported a medium frequency usage of different reading strategies in academic texts. This is in line with the finding of Meniado (2016) that EFL Saudi students moderately adopted reading strategies. According to him, teachers might not be aware of these important strategies so they may not present them in their teaching and reading instruction. However, ESL learners have higher awareness of reading strategies as reported by Sheorey and Mokhtari (2001). It could be explained that English is considered as a foreign language in Vietnam; therefore, they are limited to use English outside classrooms. Students; hence, have less opportunities to practice English in daily lives.

Among three types of reading strategies, the majority of participants preferred to use problem-solving strategies in reading academic texts at high level. As the explanation of Meniado (2016), this might be related to linguistics challenges, students find these strategies to help them deal with reading comprehension problems. Similarly, students' proficiency is one of the reasons that lead to aforementioned order of three reading strategies (Mokhtari & Sheorey, 2002). In fact, poor or medium readers seem to use POB strategies to better understand the reading texts. This result is consistent with the findings of Fitrisia et al. (2015), Pammu et al. (2014), Temur and Bahar (2011), Yüksel and Yüksel (2012) having EFL students in Indonesia, Turkey, and Vietnam who applied PROB strategies frequently while reading. This indicates that problem-solving reading strategies were used widely by various students in different contexts, especially EFL learners.

To be specific, with regard to problem-solving reading strategies, "trying to keep focused after distractions" and "focusing closely on the content of the text" were rated at high level. In other words, the strategies of concentration were usually encouraged to apply when readers faced comprehension problems. However, the reading strategies like "pausing and thinking about what is read" and "visualizing information while reading to remember" showed least interest. It supports

Yüksel and Yüksel's (2012) finding that students seldom utilized these strategies to improve their reading comprehension because these might take time and effort. Thus, teachers are encouraged to teach these in L2 classrooms. As for global reading strategies, EFL Vietnamese students rated highest for "guessing the meaning of the text" and "using prior knowledge". This result is also in line with the finding of Yüksel and Yüksel's (2012) that students favored these strategies. It is recognized that readers' background knowledge plays an important role in understanding the reading texts because it assists readers to construct new information from the texts. In terms of support reading strategies, students adopted reference materials at the highest rate. It is underlined that they needed help from dictionaries to check new vocabulary to understand the texts. Meanwhile, EFL Vietnamese students occasionally read aloud to comprehend the text which might be time-consuming.

Metacognitive Awareness of Males and Females

Although, no significant differences between males and females when it comes to using reading strategies in general and global strategies, problem-solving strategies in specific, which is inconsistent with previous studies' findings (Arrastia et al., 2016; Mokhtari & Sheorey, 2002; Temur & Bahar, 2011). Females in the current study revealed a significantly higher frequency in applying support reading strategies than males'. These findings, thus, suggest that gender does not affect students' usage of reading strategies except for the frequency of adopting support strategies. It could be the emphasis on examination of Vietnamese educational system, students are taught reading and writing as key skills in English with the negligence of Listening and Speaking skills. Vietnamese EFL students; therefore, get used to with various reading strategies to earn high scores and performed high frequency using of these reading strategies, especially problem solving strategies which are reported as the most favored ones. In other words, both girls and boys are aware of adopting numerous strategies in reading academic texts, especially when it comes to popular type like problem-solving strategies. In terms of support reading strategies, females used them more frequently than males did so that Vietnamese male learners have limited awareness of this strategy type. Additionally, there is another reason responsible for this result is the imbalance in the number of males (41) and females (82) in the current study.

Proficiency Levels on Using Reading Strategies

The results of the correlation between students' frequencies of adopting reading strategies and their reading comprehension triangulates the findings of Fitrisia et al. (2015) and Wu et al. (2012) suggested that good readers showed higher awareness of using reading strategies than poor readers did. It means that successful readers usually apply reading strategies which might help them to lessen comprehension failure and low-ability readers are not familiar with those strategies. In short, this finding supports previous studies that metacognitive awareness in using reading strategies are closely related to reading comprehension.

Research Implication

According to the findings, this research offers some research limitations and suggestions for future researchers who are interested in this research area. The major limitation is related to research method since this study applied only quantitative method. Mokhtari and Sheorey (2002) emphasized that observation and in-depth interviews of qualitative methodology would be helpful to collect reliable results. For example, future researchers might interview students about

difficulties they encounter while reading to gain deeper understanding on their struggles and then apply suitable teaching methods to their specific learners. Besides, teaching experiment of reading strategies for students to practice was not carried out. Thus, future researchers should integrate those strategies into their lessons because "awareness of strategies does not guarantee that students actually use them" (Mokhtari & Reichard, 2002, p. 255). By doing so, it can be sure that students are aware of reading strategies and apply them into actual practice. Then the researchers could see how effective applying reading strategies is. For instance, administering pretest and posttest after instructing students reading strategies might evaluate the effect of reading strategies in reading process. Thus, it is highly recommended that future researchers might employ multiple research methods in their studies.

Conclusion

The current study aimed to investigate the metacognitive awareness of reading strategies on L2 Vietnamese undergraduate students majoring in English language. Besides, the researchers wanted to explore whether or not genders and proficiency levels affect students' awareness in using reading strategies. The results revealed three major findings as follows.

First, L2 Vietnamese students usually applied reading strategies in reading texts in which problem-solving strategies were their favorite strategies to deal with reading difficulties. In contrast, support reading and global strategies did not receive much attention. To be specific, "trying to keep focused after distractions", "focusing closely on the content of the text" (PROB); "guessing the meaning of the text" (GLOB); and "adopting reference materials" (SOP) were the most frequent strategies used by readers. Meanwhile, "visualizing information while reading to remember" (PROB); "analyzing what they read" (GLOB); and "reading aloud for better understanding" were reported as the least frequent strategies.

Second, there is no statistically significant difference towards students' metacognitive awareness of reading strategies in case of gender except for support reading strategies. It could be concluded that EFL Vietnamese learners are well equipped with strategies while reading and gender might not be a significant factor influencing learners' metacognitive awareness.

Third, the results indicated that there was a relationship between reading comprehension and metacognitive awareness in reading. Since good readers reported their higher awareness of reading strategies than poor readers who showed low frequent strategies usage. Therefore, it is encouraged to apply reading strategies for teaching students in order to enhance their reading comprehension.

As for pedagogical implications for EFL teachers in terms of reading skills, it suggests that EFL teachers should integrate all three reading strategies into their reading curriculum over a period of time to train future ESL/ EFL teachers about metacognitive awareness of reading strategies. This could be helpful if they are aware of this important teaching method in reading comprehension before becoming English teachers. According to the results of this study, Vietnamese students usually used problem-solving reading strategies in their reading process and ignored global and support reading strategies. Thus, it is recommended that teachers should raise awareness of these two types of reading strategies by teaching why and how to apply them into

reading tasks (Fitrisia et al., 2015). As the suggestion of Mokhtari and Sheorey (2002), teachers can go along with following steps to teach the strategies of setting purpose for reading (GLOB): "(a) describe what the strategy is, (2) explain why the strategy should be learned and used, and (c) provide examples of the circumstances under which the strategies should be used" (p. 6). Therefore, enhancing students' awareness of reading strategies by teaching and practicing reading strategies are significant steps that aid poor readers become strategic and successful readers (Mokhtari & Reichard, 2002).

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Appendix A: Demographic information questionnaire

Metacognitive Awareness of Reading Strategies on L2 Vietnamese learners

You are invited to participate in a study investigating metacognitive awareness of reading strategies of Vietnamese learners when they study English. You will be asked to rate various reading strategies, and to consider which strategies you often use. The questionnaire should take no longer than 10 minutes to complete.

Your responses will remain confidential, will be stored safely and will be accessible only to the researcher. By submitting your responses to the questionnaire, you agree to them being included in the writing up of my study as part of my research. If you would like to withdraw from the study at any time, simply email us at hieudm@hiu.vn or huongplt@hiu.vn

Demographic information

1. Full name (Họ tên)

2. Sex (Giới tính)

Chỉ đánh dấu một hình ôvan.

- Male
- Female

3. Age (Tuổi)

4. Do you have certificates of English proficiency tests like IELTS, TOEFL, TOEIC or any local test? When was it taken? How was the result? (Bạn có bằng hay chứng chỉ tiếng anh nào không? Nó là chứng chỉ gì? Bạn kiểm tra lúc nào? Kết quả như thế nào?)

5. Self-rating: Rate your proficiency level of reading skills on the scale of 1 to 5. Tick to the box in the scale (Tự đánh giá: Đánh giá kĩ năng đọc hiểu trên thang điểm từ 1 đến 5. Đánh dấu vào ô trong thang điểm dưới đây)

Chỉ đánh dấu một hình ôvan.

	1	2	3	4	5	
Very bad	◯	◯	◯	◯	◯	Very good

6. Have you learned Reading Strategies in your previous education? (Bạn đã được học về chiến lược đọc bài Tiếng Anh chưa?)

Chỉ đánh dấu một hình ôvan.

◯ Yes
◯ Not yet

Appendix B: Metacognitive Reading Strategies Survey

Metacognitive Awareness of Reading Strategies on L2 Vietnamese learners

Listed below are statements about what people do when they read academic or school related materials such as textbooks, library books, etc. Five numbers follow each statement (1, 2, 3, 4, 5) and each number means the following:
1 means "I never or almost never do this."
2 means "I occasionally do this." (About 30% of the time.)
3 means "I sometimes do this"(About 50% of the time.)
4 means "I often do this." (About 70% of the time.)
5 means "I always or almost always do this."
After reading each statement, tick in the box (1, 2, 3, 4, or 5) that applies to you using the scale provided. Please note that there are no right or wrong answers to the statements in this inventory.

Dưới đây là các ý kiến về những gì mọi người thường làm khi họ đọc các tài liệu liên quan đến học tập hoặc trường học như sách giáo khoa, sách thư viện, v.v. Mỗi câu sẽ có thang đo gồm năm số (1, 2, 3, 4, 5) và mỗi số có ý nghĩa như sau:
1 có nghĩa là "Tôi không bao giờ hoặc hầu như không bao giờ làm điều này."
2 có nghĩa là "Tôi lâu lâu làm điều này." (Khoảng 30% thời gian.)
3 có nghĩa là "Tôi thỉnh thoảng làm điều này" (Khoảng 50% thời gian.)
4 có nghĩa là "Tôi thường làm điều này." (Khoảng 70% thời gian.)
5 có nghĩa là "Tôi luôn luôn hoặc hầu như luôn luôn làm điều này."
Sau khi đọc từng câu lệnh, hãy đánh dấu vào ô đúng với bạn (từ 1 đến 5) bằng thang điểm đã cung cấp. Xin lưu ý rằng không có câu trả lời đúng hay sai cho các câu trong khoảng không quảng cáo này.

	Strategies	1 Never	2 Occasionally	3 Sometimes	4 Often	5 Always
1	I have a purpose in mind when I read. (Tôi có mục đích khi tôi đọc)					
2	I take notes while reading to help me understand what I read (Tôi ghi chú trong khi đọc để giúp tôi hiểu điều tôi đọc.)					
3	I think about what I know to help me understand what I read (Tôi nghĩ về những thứ tôi biết để giúp tôi hiểu những gì tôi đọc)					
4	I take an overview of the text to see what it's about before reading it. (Tôi xem tổng quát về văn bản để biết nội dung của nó trước khi đọc nó.)					
5	When text becomes difficult, I read aloud to help me understand what I read. (Khi bài đọc khó, tôi đọc to để giúp tôi hiểu điều tôi đọc.)					
6	I think about whether the content of the text fits my reading purpose. (Tôi nghĩ xem nội dung của văn bản có phù hợp với mục đích đọc của tôi hay không.)					
7	I read slowly and carefully to make sure I understand what I'm reading. (Tôi đọc chậm rãi và cẩn thận để chắc chắn tôi hiểu bài đọc.)					
8	I review the text first by noticing its characteristics like length or organization. (Tôi xem xét bài đọc trước bằng cách chú ý các đặc điểm như độ dài hoặc bố cục của bài đọc.)					
9	I try to get back on track when I lose concentration. (Tôi cố gắng đọc quay trở lại khi tôi mất tập trung.)					
10	I underline or circle information in the text to help me remember it. (Tôi gạch chân hoặc khoanh vùng trong bài đọc để giúp tôi nhớ bài.)					
11	I adjust my reading speed according to what I'm reading. (Tôi chỉnh sửa tốc độ đọc theo như điều tôi đang đọc.)					
12	When reading, I decide what to read closely and what to ignore. (Khi đọc, tôi quyết định cái tôi muốn đọc thật kĩ và cái tôi không muốn đọc.)					
13	I use reference materials such as dictionaries to help me understand what I read. (Tôi sử dụng từ điển để tra cứu và giúp tôi hiểu điều tôi đọc.)					
14	When text becomes difficult, I pay closer attention to what I'm reading. (Khi bài đọc trở nên khó hơn, tôi tập trung, chú ý vào điều tôi đọc.)					
15	I use tables, figures, and pictures in text to increase my understanding. (Tôi sử dụng các bảng, số liệu và hình ảnh trong văn bản để tăng cường hiểu biết của mình.)					
16	I stop from time to time and think about what I'm reading. (Thỉnh thoảng tôi dừng lại và nghĩ về cái mà tôi đang đọc.)					
17	I use context clues to help me better understand what I'm reading (Tôi sử dụng các manh mối ngữ cảnh để giúp tôi hiểu rõ hơn cái mà tôi đang đọc).					
18	I paraphrase (restate ideas in my own words) to better understand what I read. Tôi diễn giải (trình bày ý, nội dung lại bằng từ ngữ của tôi) để hiểu về bài đọc.					

19	I try to picture or visualize information to help remember what I read (Tôi cố gắng hình dung thông tin để giúp ghi nhớ cái tôi đã đọc.)					
20	I use typographical features like bold face and italics to identify key information. (Tôi sử dụng các tính năng đánh máy như in đậm và in nghiêng để xác định thông tin chính.)					
21	I critically analyze and evaluate the information presented in the text. (Tôi phân tích và đánh giá thông tin được trình bày trong bài đọc.)					
22	I go back and forth in the text to find relationships among ideas in it. (Tôi đọc đi đọc lại bài đọc để tìm mối quan hệ giữa các ý tưởng trong đó.)					
23	I check my understanding when I come across new information. (Tôi kiểm tra việc đọc hiểu của mình khi bắt gặp thông tin mới)					
24	I try to guess what the content is about when I read. (Tôi cố gắng đoán nội dung bài đọc khi tôi đọc)					
25	When text becomes difficult, I re-read to increase my understanding. (Khi bài đọc trở nên khó khăn, tôi đọc lại bài để tăng sự đọc hiểu.)					
26	I ask myself questions I like to have answered in the text. (Tôi tự hỏi bản thân những câu hỏi mà tôi muốn được trả lời trong văn bản.)					
27	I check to see if my guesses about the text are right or wrong. (Tôi kiểm tra xem phỏng đoán của tôi về bài đọc là đúng hay sai.)					
28	When I read, I guess the meaning of unknown words or phrases. (Khi đọc, tôi đoán nghĩa của những từ, cụm từ mà tôi không biết.)					
29	When reading, I translate from English into my native language (Khi đọc, tôi dịch từ tiếng Anh sang tiếng mẹ đẻ của mình)					
30	When reading, I think about information in both English and my mother tongue. (Khi đọc, tôi nghĩ về các thông tin bằng cả tiếng Anh và tiếng mẹ đẻ.)					

Appendix C: Table 7

Table 7. *Comparison of individual strategies between males and females*

Name	Strategies	Male (*n*=41)		Females(*n*=82)		t	p-value
		M	SD	*M*	SD		
Glob1	Setting purpose for reading	3.78	.881	3.35	1.109	2.185	0.31
Glob2	Adopting prior knowledge	3.76	1.067	3.61	1.097	.704	.483
Glob3	Previewing text before reading	3.73	1.184	3.32	1.275	1.740	.084
Glob4	Checking whether the content matches reading purpose	3.15	1.493	3.04	1.300	.420	.675
Glob5	Skimming through text characteristics	3.39	1.243	3.24	1.213	.626	.533
Glob6	Deciding what to read	3.13	1.137	3.15	1.238	-.092	.927
Glob7	Taking advantages of text features (tables)	3.27	1.225	3.40	1.313	-.546	.586
Glob8	Using context clues	3.54	1.206	3.45	1.288	.354	.724
Glob9	Using typographical features	2.76	1.410	2.74	1.404	.045	.964
Glob10	Analyzing and evaluating what is read	2.88	1.053	2.66	1.189	1.002	.318
Glob11	Checking understanding of new information	3.41	1.072	3.19	1.324	.961	.338
Glob12	Guessing the meaning of the text	3.44	1.119	3.91	1.045	-2.324	.022*
Glob13	Confirming predictions about the text	2.95	1.182	3.09	1.307	-.553	.581
Prob1	Reading slowly and carefully	3.8	1.054	3.8	1.149	.000	1.000
Prob2	Trying to keep focused after distractions	3.85	1.152	4.02	1.154	-.774	.441
Prob3	Adjusting reading pace	3.49	1.003	3.54	1.102	-.238	.812

Prob4	Focusing closely on the content of the text	3.95	1.139	3.98	1.007	-.116	.908
Prob5	Pausing and thinking about what is read	3.05	1.094	3.49	1.057	-2.146	.034*
Prob6	Visualizing information while reading to remember	3.29	1.146	3.48	1.102	-.856	.394
Prob7	Reading again for better understanding	3.60	1.411	3.78	1.162	-.737	.463
Prob8	Predicting the meaning of unfamiliar words	3.68	1.254	3.68	1.121	.000	1.000
Supp1	Taking notes while reading	3.10	1.336	3.49	1.147	-1.660	.100
Supp2	Reading aloud for better understanding	2.34	1.334	2.18	1.145	.684	.495
Supp3	Underlining and circling information in the text	3.27	1.361	3.96	1.138	-2.988	.003*
Supp4	Adopting reference materials	3.51	1.227	4.31	1.008	-3.826	.000*
Supp5	Paraphrasing for better understanding	3.18	1.318	3.26	1.265	-.328	.744
Supp6	Going back and forth to find associations between ideas	3.15	1.216	2.98	1.305	.699	.486
Supp7	Asking oneself questions	2.51	1.247	2.83	1.195	-1.367	.174
Supp8	Translating into Vietnamese while reading	3.34	1.442	3.84	1.252	-1.984	.050*
Supp9	Thinking of information in both languages	3.46	1.247	3.59	1.295	-.498	.619