

Assessing Metacognitive Online Reading Strategy Usage among EFL Teachers in Indonesia

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ABSTRACT

A significant amount of research on Metacognitive Online Reading Strategies (MORS) is currently focused on EFL/ESL students, and only a few studies have examined the participation of EFL teachers. This quantitative study, therefore, aimed at assessing the use of these strategies among EFL teachers in Indonesia. Analyses of the strategy usage was based on factors of gender, teaching status, and internet literacy levels. Via a Google form application, a MORS survey was employed as the data collection instrument. The gathered data were analyzed descriptively and inferentially using t-tests, Pearson correlation, and linear regression. The results showed that in reading online academic materials, the teachers used support strategies more frequently than problem-solving strategies and global strategies. Overall, the teachers employed these strategies at a moderate to high level. Based on gender and internet literacy, significant differences in the overall and strategy category uses were discovered. There were significant correlations between the teachers' internet literacy levels and their use of the overall strategies, the support strategies, and the global strategies, but no correlation between the internet literacy levels and the problem-solving strategies. The internet literacy levels were found to be strong predictors of the overall and category strategy uses. The findings of this research offer a wide variety of educational implications for EFL reading.

Keywords: metacognitive online reading strategies; EFL teachers; gender; internet literacy; teaching status

INTRODUCTION

Recent advancements in information and communication technology such as mobile applications and the internet have provided new opportunities and challenges in the language learning process. As technology advances, the demand for materials utilized in the language learning is shifting away from conventional information sources toward online ones. Indeed, online texts are now commonly utilized as primary reference resources in a variety of language learning activities. To utilize this technology in various learning activities, teachers and students need adequate internet literacy. In an academic environment like this, online reading becomes a more important skill because most of the information needed is obtained through digital sources. However, when reading online, readers may not be able to engage with texts in a way that allows them to enhance their reading speed and comprehension. In order to be effective and efficient in online reading, readers must have sufficient online reading strategies and practices in addition to online literacy (Taki, 2016).

Furthermore, to accomplish comprehension in the online reading process, readers must have certain abilities in accessing the contents. This is due to the nature of online contents, which are typically sophisticated hypertext and problem-solving oriented (Azmuddin et al., 2017). Therefore, reading that involves metacognitive awareness is encouraged to allow readers to assess and evaluate their reading process (Akyel & Erçetin, 2009). Metacognitive awareness is connected to strategies for planning, organizing, and managing online reading to help readers achieve their

reading goals (Anderson, 2003; Ramli et al., 2011; Sheorey & Mokhtari, 2001). Readers who are taught metacognitive abilities including goal-setting, organizing, evaluating information, monitoring, and self-evaluation do significantly better than those who are not (Bannert et al., 2009).

The usage of Metacognitive Online Reading Strategies (MORS) in English learning has been the focus of many studies, but there are still many issues linked to these strategies that need to be explored further. Among important issues that have not been widely researched include types of online reading strategies that can significantly increase readers' comprehension, and whether readers' internet literacy plays a role in deciding strategy choices when they read online. More specifically, studies on MORS are still mostly focused on EFL students. Meanwhile, there has been very limited research on the role of EFL teachers in using these online strategies. Moreover, research that focuses on pre-service EFL teachers is still very rare, especially in Indonesian context (Indriyani & Pertiwi, 2021; Fitrianti & Susanti, 2021). Research in this area is very important to do because in addition to further support the body of knowledge in online reading, the findings of the research can be used as a reference in improving quality of English learning processes through application of appropriate online reading strategies. The results of research in this field are also expected to increase teacher awareness, especially pre-service EFL teachers, on the importance of applying metacognitive strategies in the learning process. EFL pre-service teachers who have metacognitive awareness can instruct students on how to use reading strategies. On the other hand, the teachers may not be able to successfully promote the development of such skills among their potential students if they lack metacognitive awareness (Arrastia et al., 2016).

LITERATURE REVIEW

This research is mostly based on the theoretical framework of metacognitive awareness in online reading. In reading literature, metacognitive awareness is described as one's cognitive capacities and self-control mechanisms used to track and evaluate text comprehension when engaged in reading activities (Sheorey & Mokhtari, 2001). Metacognitive awareness includes activities like identifying the most important parts of texts, changing reading pace due to text complexity, employing contextual clues, scrolling, reviewing, inquiring, interpreting, and annotating. Choosing which strategies to employ for different reading materials and assessing the efficacy of those strategies and how they contribute to reading comprehension are examples of self-control mechanisms in reading activities. Readers who are aware of metacognition can modify how they employ strategies when they do not contribute to comprehension since metacognitive abilities are not engaged one by one in a linear fashion (Anderson, 2003). In other words, there is more than one metacognitive processes possible to occur at a time during a learning task.

Researchers categorize metacognitive strategies into several groups. These strategies were grouped by Mokhtari and Sheorey (2002) into 3 types: global, problem-solving, and support strategies. Global strategies include aspects such as reading planning, reading objectives, and text reviews. Speed reading, revisiting complex texts, and anticipating what new terms imply are among instances of problem-solving strategies. Dictionary usage, note taking, and word highlighting are among activities included in support strategies. Meanwhile, Anderson (2003) divided these strategies into five components: effective reading preparation and planning, determining when to employ specific strategies, realizing how to oversee the strategy use, learning how to plan reading strategies, and assessing the strategy usage. In line with Mokhtari and Sheorey

(2002) and Anderson (2003), this study posits that when readers use metacognitive knowledge, they may provide detailed feedback, examine their point of view, and make specific changes to their reading habits. To get the best grasp of reading materials, readers must be metacognitively aware of what they are doing. When engaged in an online reading activity, for example, they should be conscious of their metacognitive awareness by relating their actions to their reading objectives. Phakiti (2008) claims that metacognitive awareness can be a predictor of reading skills, when readers are familiar with the strategies they employ to attain their target understanding.

Studies have been conducted on the use of metacognitive strategies both in offline and online contexts. In offline context, some researchers studied the use of these strategies among EFL readers and assessed differences in their usage based on a variety of variables (Aziz et al., 2019; Deliany & Cahyono, 2020; Mokhtari & Sheorey, 2002; Sheorey & Mokhtari, 2001). In addition, other researchers linked the use of these strategies with the reading comprehension achievement among EFL students (Dardjito, 2019; Mohseni et al., 2020). More intriguingly, some researchers have focused on the usage of these strategies by readers with special needs (Chevalier et al., 2017). In essence, these scholars believe that in order to increase comprehension skills, readers must be conscious of their own metacognitive processes.

Meanwhile, in the online context, the use of these strategies has also attracted the interest of many EFL/ESL researchers. Anderson (2003) identified no significant disparities between the two groups of readers in the global and support strategy usage; but the EFL group employed problem-solving strategies more frequently than ESL group. Other studies that looked into similar strategies among Middle East EFL readers also discovered that the problem-solving strategies were more popular than the other two strategy types (Darwish, 2017). In an investigation of adult Malaysian readers, however, Ramli et al. (2011) found that the global strategies were employed more often than the other two strategies. Öztürk (2018) found that student teachers in Turkey employed support and problem-solving strategies more often.

In several other studies, researchers investigated the effect of metacognitive strategy teaching on reading comprehension skills. Huang (2013) revealed that online readers surpassed offline readers in comprehension skills when comparing offline versus online reading strategy training. Zenotz (2012) discovered that the strategy instruction enhances readers' reading comprehension but has little effect on strategy use. Additionally, Huang et al. (2009) claimed that while the support strategies helped the majority of readers improve their reading comprehension, they were unable to predict students' comprehension of increasingly challenging texts.

In Indonesian context, while many studies have examined how EFL students use metacognitive reading strategies (Indriyani & Pertiwi, 2021; Fitrianti & Susanti, 2021), there is currently a dearth of research focused on EFL teachers, particularly pre-service teachers. Existing studies involving EFL teachers in the use of these reading strategies revealed mixed findings. Mudra (2018) discovered that when Indonesian EFL teachers read online, they used global strategies the most. In addition, Intan Sari (2016) revealed that Indonesian EFL teachers with high reading abilities used metacognitive strategies (monitoring and evaluation) less frequently than teachers with moderate reading ability, but higher than teachers with low reading abilities.

It is apparent that there are still many crucial issues that have not been explored in those previous studies such as association of MORS usage with EFL teachers' gender, teaching status, and internet literacy levels. Not much previous research has also focused on examining disparities in the strategy usage based on these factors. Furthermore, there has been relatively little research on these issues involving Indonesian EFL pre-service teachers, despite the fact that such research is essential to obtain a better knowledge of how the teachers use metacognitive strategies,

particularly in online reading circumstances. The results of such research will also be beneficial in enhancing the quality of EFL learning processes in general. Moreover, EFL teachers, curriculum developers, and learners can use the findings of these research as guidance to enhance their understanding of metacognitive strategies that can help them achieve their EFL learning objectives. As such, the objective of this research was to assess the usage of MORS among Indonesia EFL teachers which was associated with factors of gender, teaching status, and internet literacy levels. More specifically, to further address this objective, the following Research Questions (RQ) were formulated:

1. Which strategies (MORS) are used by the EFL teachers more commonly and less commonly, and what are their usage levels?
2. Do the teachers differ significantly in using the strategies based on their gender and teaching status?
3. Are there significant correlations between the teachers' strategy uses and their internet literacy levels?
4. Are the teachers' levels of internet literacy predictors of their strategy usage?

METHODOLOGY

RESEARCH DESIGN

This study employed a quantitative method, in which numerical data and statistical tools were used to investigate phenomena in a structured manner. It made use of a survey as well as a correlational approach. An online questionnaire was used to collect information regarding respondents' usage of MORS and a correlational approach was applied to investigate the relationship between MORS usage and internet literacy levels.

PARTICIPANTS

The participants for this study were chosen through purposeful sampling. As the objective of the research was to examine the use of MORS among the in-service and pre-service teachers, the researcher made selection characteristics as population specifications, namely those who were teaching in the English Education Department of the University of Borneo Tarakan and those who were studying in the same department. A total of 121 participants took part in the research. Table 1 displays the frequency distribution of the samples' teaching status, gender, and internet literacy levels.

TABLE 1. Frequency Distribution of Teaching Status, Gender, and Internet Literacy Levels

		Frequency	Percent
Teaching status	In-service	13	10.7
	Pre-service	108	89.3
Gender	Male	29	24
	Female	92	76
Internet literacy level	Very good	31	25.6
	Good	56	46.3
	Average	29	24
	Poor	5	4.1
	Very poor	0	0

Of the total participants, 10.7% were in-service EFL teachers and 89.3% were pre-service EFL teachers. Male teachers made up 24% of the total, while female teachers made up 76%. In addition, 25.6 percent of participants had a very good level of internet literacy, 46.3 percent had a good level, 24 percent had an average level, and 4.1 percent had a poor level.

INSTRUMENT

The data for this study was gathered via MORS survey that was adapted from Anderson (2003) and Pookcharoen (2009). As in the original version, MORS was divided into three strategy categories: Global strategies (Glob) contained 17 items, Problem-solving strategies (Prob) had 12 items, and Support strategies (Supp) included 10 items. Some minor changes were made to comply to the sample characteristics, namely items 8, 9, and 10 of the support strategies. The instrument was reviewed and reread to guarantee correctness and readability. In addition, to express the coherence between one item and the other items and to determine the correlation of the item with the total score on the other items in the instrument, the corrected item-total correlation was performed, considering the minimum value of 0.3 (Zijlmans et al., 2019). Following these procedures, four items were removed, namely Glob3, Prob9, Supp2, and Supp8. Finally, the instrument contained 35 items with item-total correlations larger than 0.3, a Cronbach's alpha of .941 for the overall strategies, .899 for the Glob, .867 for the Prob, and .807 for the Supp. These results indicate that MORS is a valid instrument for evaluating the EFL teachers' reading strategies. Additionally, the background questions in this survey included information on the participants' teaching status, gender, and internet literacy levels.

PROCEDURE

The desired respondents were invited to complete the questionnaire via a Google form. They were told that their involvement was entirely voluntary and had no bearing on their academics or professional development. They filled out the questionnaire outside of class time. The data collection process took 2 weeks to complete. In the first stage of the survey, respondents were requested to answer background questions. They were then required to rate each strategy item on a scale of 1 to 5 (1 = never or almost never, 2 = only occasionally, 3 = sometimes (50% of the time), 4 = usually, and 5 = Always or almost always). In total, the survey took about 20 minutes to complete.

DATA ANALYSIS

The data for the first RQ were analyzed using descriptive statistics. The levels of strategy usage were determined using Oxford's (1990) scales: high usage (mean scores of 3.5-5.0), moderate usage (mean scores of 2.5-3.4), and low usage (mean scores of 1.0-2.4). A t-test was used to assess the data for the second RQ. An effect size analysis was performed to determine the magnitude of the mean differences. Because of the disparities in sample sizes, the Hedges' g was employed, with $g = .2$ indicating a small effect size, $g = .5$ a medium effect size, and $g = .8$ a large effect size (Lakens, 2013). The third RQ was analyzed using Pearson correlation, while the fourth RQ was investigated using linear regression. The Kolmogorov-Smirnov test was used to check for normality, and it was revealed that the sample data followed a normal distribution with p-values greater than .05.

RESULTS AND DISCUSSION

RESEARCH QUESTION 1

RQ 1 was investigated to find out which strategies (MORS) the EFL teachers used more commonly and less commonly and their usage levels. Results of the descriptive statistics of RQ 1 are shown in Table 2.

TABLE 2. Descriptive Statistics of MORS Use and Use Levels

Rank	Strategy	Mean	SD	Use level
1	Supp4 (Using reference materials)	4.1	1.02	High
2	Glob8 (Deciding what to read closely and what to ignore)	3.92	0.954	High
3	Glob5 (Scrolling through the online text)	3.91	0.876	High
4	Prob7 (Re-reading texts)	3.9	0.961	High
5	Prob1 (Reading slowly and carefully)	3.89	0.947	High
6	Prob4 (Paying closer attention to texts)	3.89	0.835	High
7	Prob2 (Getting back on track when losing concentration)	3.84	0.94	High
8	Glob4 (Thinking about what is already known)	3.83	0.782	High
9	Supp5 (Paraphrasing)	3.83	0.928	High
10	Glob14 (Checking understanding)	3.82	0.847	High
11	Supp9 (Thinking about information in English and Indonesian)	3.79	0.884	High
12	Glob2 (Participating in live chat with other learners of English)	3.77	1.047	High
13	Prob11 (Able to differentiate between opinion and fact)	3.77	0.883	High
14	Supp10 (Seeking similar information in Indonesian)	3.76	0.992	High
15	Glob1 (Having a purpose in mind)	3.74	0.918	High
16	Supp1 (Taking notes)	3.71	1.099	High
17	Prob3 (Adjusting reading speed)	3.65	0.873	High
18	Glob6 (Checking if reading contents fit purpose)	3.64	0.894	High
19	Glob11 (Using context clues)	3.64	0.973	High
20	Glob15 (Guessing the text content)	3.64	1.017	High
21	Prob12 (Searching sites that cover both sides of an issue)	3.64	1.017	High
22	Prob6 (Visualizing information)	3.6	1.021	High
23	Supp6 (Going back and forth in the text)	3.6	0.988	High
24	Prob8 (Guessing unfamiliar words or phrases)	3.59	1.03	High
25	Glob9 (Clicking on links to other sites)	3.58	1.167	High
26	Glob16 (Checking if the guesses are right or wrong)	3.55	1.056	High
27	Glob17 (Scanning the text)	3.55	0.922	High
28	Supp7 (Self-asking)	3.51	0.914	High
29	Glob7 (Noting text length and organization)	3.43	0.99	Moderate
30	Supp3 (Printing out a hard copy, then circling information)	3.43	1.175	Moderate
31	Prob5 (Stop reading and think about the text)	3.42	0.964	Moderate
32	Glob12 (Using typographical features)	3.39	1.098	Moderate
33	Glob13 (Critically analyzing information)	3.33	0.943	Moderate
34	Prob10 (Evaluating the text before using information)	3.32	1.018	Moderate
35	Glob10 (Using tables, figures, and pictures)	2.98	1.19	Moderate

The top ten strategies used by the teachers included two support strategies (Supp4 and Supp5), four global strategies (Glob8, Glob5, Glob 4, and Glob14), and four problem solving strategies (Prob7, Prob1, Prob4, and Prob2). By contrast, the bottom ten strategies consisted of six global strategies (Glob16, Glob17, Glob7, Glob12, Glob13, and Glob10), two support strategies (Supp7 and Supp3), and two problem-solving strategies (Prob5 and Prob10). Overall, Supp4 was the most frequently used, while Glob10 was the least frequently used. By category, Glob8 was the most frequently used in the global strategies, and Glob10 was the least. Prob7 was the most commonly utilized in the problem-solving strategies, while Prob10 was the least. In the support strategies, Supp4 was the most frequently employed, while Supp3 was the least.

It is interesting to note that the EFL teachers used 28 of the 35 strategies with a high level and the other 7 strategies were employed with a moderate level. The strategies employed at a high level consisted of 12 global strategies, 9 problem-solving strategies, and 7 support strategies. Meanwhile, those used at a moderate level consisted of 4 global strategies, 2 problem-solving strategies, and 1 support strategy. These results indicate that when reading academic contents online, the EFL teachers employed a range of metacognitive strategies. In an effort to improve their online academic reading comprehension, the teachers most often employed strategies such as using reference materials, deciding what to read closely and what to ignore, scrolling, re-reading texts, reading slowly and carefully, paying closer attention to texts, getting back on track when losing concentration, thinking about what is already known, paraphrasing, and checking understanding on new information. On the other hand, the teachers rarely used the following strategies when reading online: checking if guesses are right or wrong, scanning the text before reading, asking themselves questions, reviewing, underlining or circling information, stopping and thinking, using typographical features, critically analyzing information, critically evaluating texts before using information, and using tables, figures, and pictures. These findings are in agreement with earlier research, which revealed that EFL readers utilized a variety of metacognitive strategies to improve their knowledge of academic reading (Anderson, 2003; Rianto, 2021). Additionally, these results support those of Coiro and Dobler (2007), who found that online reading necessitates previous knowledge, such as understanding how to locate certain words in a text or accessing reference materials.

These findings are anticipated to contribute to the body of empirical research on English language learning in Indonesia, particularly in terms of understanding the metacognitive skills of EFL teachers. Both the pre-service and in-service EFL teachers who participated in the study claimed to have high levels of metacognitive awareness. These results support the notion that, when reading in a second language, more reading strategies are required, particularly when learning a new language for the first time (Arrastia et al., 2016). The most effective application of these strategies, according to Mokhtari and Reichard (2002), depends on the reader's English reading proficiency, the reading material being used, and the objective of the reading. Low scores on one of the subscales or components of the inventory suggest that there may be a number of reading strategies in the section that need to be explored and taken into account. The high level of metacognitive strategy use among EFL teachers in this study may be explained by motivation and intention to teach English, as this explanation was offered by earlier studies (Arrastia et al., 2016).

RESEARCH QUESTION 2

RQ 2 was examined to find out if the teachers differed significantly in using the strategies based on their gender and teaching status. Results of RQ 2 are reported in Table 3. In the case of gender, a significant difference was identified in the overall strategy usage, with the female teachers had higher mean scores. The mean difference between the two genders was moderate in the overall strategy use. Significant gender differences were also found in all the category uses, with the female teachers had higher mean scores and the mean differences were moderate in all cases. Results for gender disparities are comparable to those from earlier research (Sheorey & Mokhtari, 2001). In general, compared to their male colleagues, female EFL teachers in the study said they used reading strategies more often when reading English.

These results clearly indicated that the female teachers employed more MORS than the male teachers, overall and categorically. Previous studies both on offline and online reading

contexts has been backed up by these results (Peart 2017; Sheorey & Mokhtari, 2001; Ardianingsih & Salim, 2019). These studies revealed that the female readers used metacognitive strategies more often than their male counterparts. The recent study contributes to a growing body of research demonstrating that the female EFL readers outperform the males in online reading activities when it comes to employing metacognitive strategies. Despite the fact that the female teachers were more dominant in the strategy use, this study identified that when reading online, both genders employed the Supp more frequently than the Prob or the Glob. This finding is consistent with Öztürk (2018), who found that the EFL teachers utilized support strategies more frequently than the other two strategy categories. Some of the most frequent support strategies used by both genders in the current study were using reference materials, paraphrasing, and thinking about information in both English and Indonesian. However, these results differed from some previous research (Mudra, 2018) which revealed that the EFL teachers employed the global reading strategies more frequently than the other two strategies. The teachers in Mudra's study, for example, employed more frequently the strategies such as guessing content, scrolling, and associating current information.

TABLE 3. Results of t-tests for strategy usage by gender and teaching status

Strategy	Male (n=29)		Female (n= 92)		t	p	Hedges' g
	Mean	SD	Mean	SD			
Glob	3.36	.73	3.68	.57	-2.483	.014*	.52
Prob	3.42	.72	3.77	.57	-2.694	.008*	.58
Supp	3.44	.73	3.80	.61	-2.717	.008*	.56
Overall	3.40	.65	3.74	.51	-2.918	.004*	.62
	In-service (n=13)		Pre-service (n=108)				
	Mean	SD	Mean	SD			
Glob	4.25	.53	3.53	.59	4.176	.000*	1.23
Prob	4.11	.44	3.63	.63	2.684	.008*	.78
Supp	4.08	.38	3.67	.67	3.253	.004*	.63
Overall	4.17	.43	3.59	.55	3.596	.000*	1.08

* $p < .05$

In the case of teaching status, a significant disparity was found in the overall strategy usage, with the in-service teachers had greater mean scores than the pre-service teachers. The mean difference in overall strategy usage between these two types of teachers was large. Significant disparities in category usage were also detected between in-service and pre-service teachers in all categories, with the former had higher mean scores than the latter in all cases. The mean differences between the in-service and the pre-service teachers were found to be very high for the Glob and moderate for the Prob and the Supp.

These results clearly demonstrated that in both overall and category strategy usage, the in-service teachers employed more MORS than the pre-service teachers. The in-service teachers used the Glob the most, whereas the pre-service teachers employed the Supp the most. Some of the most popular strategies used by the in-service teachers were Glob6, Glob1, and Supp4, whereas the pre-service teachers used more frequently Supp4, Prob7, and Prob1. On the other hand, some of the least popular strategies used by the in-service teachers were Supp10, Prob5, and Supp5, whereas the pre-service teachers employed less frequently Glob10, Prob10, and Glob13. These findings are partly in accordance with those of Öztürk (2018), who discovered that the teacher students utilized support strategies more often. In contrast, Mudra (2018) discovered that pre-service EFL teachers utilized global strategies more frequently. These findings complement the deficits in the literature as not much research focuses on differences based on teaching status. In

fact, some existing study concentrate primarily on descriptive analysis and strategy comparisons based on other parameters (Naghdipour & Kadhim, 2021).

RESEARCH QUESTION 3

The data for the third RQ was examined to find out if there was any significant correlation between the teachers' strategy usage and their internet literacy levels. Results of RQ3 are shown in Table 4. A significant relationship was identified between the teachers' internet literacy levels and the use of overall strategies ($r = .252$). Significant correlations were also identified between their internet literacy levels and their uses of the Glob ($r = .254$) and the Supp ($r = .229$). Meanwhile, there was no significant correlation between their internet literacy levels and their usage of the Prob ($r = .172$).

TABLE 4. Correlation between Strategy Usage and Internet Literacy Level

		Internet literacy level
Glob	Pearson Correlation	.254*
	Sig. (2-tailed)	.005
	N	121
Prob	Pearson Correlation	.172
	Sig. (2-tailed)	.059
	N	121
Supp	Pearson Correlation	.229*
	Sig. (2-tailed)	.012
	N	121
Overall	Pearson Correlation	.252*
	Sig. (2-tailed)	.005
	N	121

* $p < .05$

RESEARCH QUESTION 4

The fourth RQ was investigated to determine if the teachers' level of internet literacy was a predictor of their strategy usage. Results of RQ4 are displayed in Table 5. The internet literacy levels significantly predicted the overall strategy use ($p = .003$, $B = .185$), implying that for every 1-unit increase in the internet literacy level, the overall strategy use increased by .185 units. In addition, the internet literacy levels also significantly predicted the three strategy category usage (Glob: $p = .008$, $B = .183$; Prob: $p = .029$, $B = .152$; Supp: $p = .001$, $B = .233$). These statistics suggested that for every 1-unit increase in the internet literacy levels, the Glob, the Prob, and the Supp increased by .183, .152, and .233 units, respectively.

TABLE 5. Summary of simple regression analysis for internet literacy levels predicting strategy usage

Predictor	Dependent variable	B	SE B	β	t	p
Internet literacy level	Overall	.185	.062	.265	3.001	.003*
	Glob	.183	.068	.239	2.690	.008*
	Prob	.152	.069	.198	2.205	.029*
	Supp	.233	.071	.289	3.294	.001*

* $p < .05$

Results of the third RQ provided further explanations for the high awareness of the strategy usage among the teachers, which was found to be significantly linked with their internet literacy level. Furthermore, results of the fourth RQ showed that the teachers' internet literacy levels predicted their strategy usage, despite the fact that it only explained 6.4% of the variance in the overall strategies, 6.5% in the Glob, 3.0% in the Prob, and 5.2% in the Supp. In more details, the teachers with very good and good internet literacy levels were high users of the Prob, the Supp, and overall strategies, whereas those with average and poor levels were moderate users. In the Glob, those with very good and good internet literacy levels were the high users, while those with average and poor levels were the moderate users. The fact that these teachers had a high level of internet literacy was likely due to their digital lives, in which they could not get enough of the internet and their mobile phones, whether for academic or leisure purposes. Anshari et al. (2017) claimed that the reason mobile phones are always carried, including in class, is that they may be used as a learning aid since they are highly comfortable, lightweight, and useful, and they give students and teachers access to a variety of digital resources. Another explanation could be related to the learning process in their department which required them to access online academic materials and assignments. As blended learning approaches were used, they might have felt compelled to actively look for and study extra resources online. Furthermore, the implementation of a full online learning policy at all levels of education in response to the Covid-19 pandemic was likely to contribute to their internet literacy level. The current study suggested that the teachers' internet literacy levels played a role in the selection and use of MORS.

IMPLICATIONS

The findings of this study have a wide range of learning implications. They are highly valuable for EFL teachers to use as a reference in determining whether they are appropriately meeting EFL teaching needs, particularly in terms of addressing potential differences in the use of MORS among them when reading academic contents. In practice, these findings might be used as a starting point for organizing EFL reading activities since MORS can be employed to help readers comprehend what they are reading and re-establish the text-reader relationship. Furthermore, to reduce gender bias in the teaching and learning of EFL reading, both male and female readers should have access to choices of metacognitive strategies from which to pick the best one for them. More specifically, the male readers may require additional training in the Supp so that they are more conscious of them and can use the strategies more frequently in online activities. On the other hand, the Prob and the Glob were found to be utilized less frequently by the EFL teachers, despite the fact that they are vital for demonstrating influence over the reading process (Mokhtari & Sheorey, 2002). So, it is chance to bring them back into the classroom if readers are not really utilizing them as much as they should be. When using the Glob, readers can keep track progress and manage the use of various strategies to establish goals according to the types of text accessible. In addition, when using the Prob readers may be able to solve problems when reading becomes difficult. More importantly, the Supp usage can be further promoted among EFL readers because this sort of strategy can assist them cope with challenging materials even after they have utilized the Glob and the Prob (Peart, 2017).

Another practical implication of these results is that EFL teachers are encouraged to use these model strategies to stimulate discussion and reflection on some of the strategies that their learners might use when trying to understand a text. In addition, EFL teachers may use their high metacognitive awareness to help learners get more cognizant of the strategies when they absorb

materials and improve their overall understanding of the online reading. Furthermore, EFL teachers are encouraged to specify which additional strategies and activities to teach to make students become competent readers. Similarly, readers with varying levels of internet literacy, especially those who rely on the Prob, may need more exercises in the required steps to develop their skills to interpret reading contents, like gaining back attention as losing focus, reading cautiously, and imagining text information. EFL teachers also could provide teaching aids to promote the strategies that seem to be missing, especially those preferred by readers with low internet literacy, so that they might use them more frequently and analyze their development. This strategy coaching can result in readers who are capable of acquiring a foreign language.

Furthermore, the results of this study may help EFL teachers become more aware of how factors such as gender and internet literacy levels can influence the selection and use of online reading strategies. This information can be used by EFL teachers to accommodate the individual needs of their students, considering that both male and female readers and those with different internet literacy should be given the same chance to learn and improve their reading skills. The existence of a substantial relationship between MORS and internet literacy levels emphasizes the need of increasing students' and teachers' awareness of digital technologies and their use of the strategies in their learning activities. As such, those involved in EFL learning planning are encouraged to learn more about these strategies, as they may help improve literacy development and general English language proficiency. These findings also imply that, while digitally savvy EFL learners will gain more from all strategy types, lower technologically skilled EFL learners will also benefit from having high metacognitive awareness in their online reading comprehension. Training in the employment of metacognitive strategies can help enhance online reading comprehension since these strategies serve as a mechanism for improving self-monitoring, which is especially important while reading challenging online materials. Finally, since MORS were employed at a moderate to high level by the readers and might be effective in assisting them interpret more difficult texts, they must be incorporated in formal English learning curricula and materials.

CONCLUSION AND RECOMMENDATIONS

The usage of MORS by Indonesian EFL teachers was investigated in the present study in terms of their gender, teaching status, and internet literacy. The teachers used a variety of strategies at a moderate to high level when reading academic texts online. Both the overall and category uses of the strategies showed significant gender difference, with female teachers scoring higher on average. Significant differences were detected in the overall and category uses of the strategies for teaching status, with in-service teachers having higher mean scores than pre-service teachers. There were no significant correlations between the teachers' internet literacy levels and their use of problem-solving strategies, but there were significant correlations between their use of overall and global strategies and their levels of internet literacy. It was discovered that the teachers' level of internet literacy was a significant predictor of both the category and overall strategy uses.

MORS offers a number of other intriguing aspects that could be investigated further. Future research can link the use of strategy categories and online text types. Another interesting investigation is to see whether the use of one category can predict the use of another. An equally important issue to explore is whether MORS have predictive power for other language abilities like listening and speaking, as well as grammatical understanding. Lastly, it is important to note

that self-reporting surveys have disadvantages. This type of instrument does not record what respondents did, but rather what they agreed to do. Further study using interviews and observations simultaneously is encouraged to gain a broader perspective and much more trustworthy information on the utilization of the strategies.

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REFERENCES

- Akyel, A., & Erçetin, G. (2009). Hypermedia reading strategies employed by advanced learners of English. *System*, 37(1), 136–152. <https://doi.org/10.1016/j.system.2008.05.002>
- Anderson, N. (2003). Scrolling, clicking, and reading English: Online reading strategies in a second/foreign language. *The Reading Matrix*, 3(3), 1–33.
- Anshari, M., Almunawar, M. N., Shahrill, M., Wicaksono, D. K., & Huda, M. (2017). Smartphones usage in the classrooms: Learning aid or interference? *Education and Information Technologies*, 22(6), 3063–3079. <https://doi.org/10.1007/s10639-017-9572-7>
- Ardianingsih, W., & Salim, R. M. A. (2019). Perbedaan Gender pada Kesadaran Metakognitif dalam Strategi Membaca Bacaan Akademik. *Jurnal Psikologi Teori Dan Terapan*, 10(1), 74. <https://doi.org/10.26740/jptt.v10n1.p74-84>
- Arrastia, M. C., Zayed, A. M., & Elnagar, H. Z. (2016). Metacognitive Awareness of Reading Strategies among English as a Foreign Language (EFL) Preservice Teachers: An Exploration of Gender and Developmental Differences. *International Research in Higher Education*, 1(2), 46–57. <https://doi.org/10.5430/irhe.v1n2p46>
- Aziz, Z. A., Nasir, C., & Ramazani, R. (2019). Applying Metacognitive Strategies in Comprehending English Reading Texts. *Celt: A Journal of Culture, English Language Teaching & Literature*, 19(1), 138. <https://doi.org/10.24167/celt.v19i1.1863>
- Azmuddin, R. A., Nor, N. F. M., & Hamat, A. (2017). Metacognitive online reading and navigational strategies by science and technology university students. *GEMA Online Journal of Language Studies*, 17(3), 18–36. <https://doi.org/10.17576/gema-2017-1703-02>
- Bannert, M., Hildebrand, M., & Mengelkamp, C. (2009). Effects of a metacognitive support device in learning environments. *Computers in Human Behavior*, 25(4), 829–835. <https://doi.org/10.1016/j.chb.2008.07.002>
- Chevalier, T. M., Parrila, R., Ritchie, K. C., & Deacon, S. H. (2017). The Role of Metacognitive Reading Strategies, Metacognitive Study and Learning Strategies, and Behavioral Study and Learning Strategies in Predicting Academic Success in Students With and Without a History of Reading Difficulties. *Journal of Learning Disabilities*, 50(1), 34–48. <https://doi.org/10.1177/0022219415588850>
- Coiro, J., & Dobler, E. (2007). Exploring the online reading comprehension strategies used by sixth-grade skilled readers to search for and locate information on the Internet. *Reading Research Quarterly*, 42(2), 214–257. <https://doi.org/10.1598/rrq.42.2.2>
- Dardjito, H. (2019). Students' metacognitive reading awareness and academic English reading comprehension in EFL context. *International Journal of Instruction*, 12(4), 611–624. <https://doi.org/10.29333/iji.2019.12439a>
- Darwish, I. (2017). Meta Cognitive Strategy Use: Off or On in Online Reading. *International Conference on Literature, History, Humanities and Social Sciences (LHHSS-17)*, Jan 1-2, 24–27. <https://doi.org/10.15242/icehm.ed0117029>
- Deliany, Z., & Cahyono, B. Y. (2020). Metacognitive reading strategies awareness and metacognitive reading strategies use of efl university students across gender. *Studies in English Language and Education*, 7(2), 421–437. <https://doi.org/10.24815/siele.v7i2.17026>
- Fitrianti, N. A., & Susanti, A. (2021). Efl Students Metacognitive Strategies in Online-Based Learning: in Relation To Their Writing Quality. *Paramasastra*, 8(1), 1–19. <https://doi.org/10.26740/paramasastra.v8n1.p1-19>
- Huang, H. C. (2013). Online reading strategies at work: What teachers think and what students do. *ReCALL*, 25(3), 340–358. <https://doi.org/10.1017/S0958344013000153>

- Huang, H. C., Chern, C. lan, & Lin, C. cheng. (2009). EFL learners' use of online reading strategies and comprehension of texts: An exploratory study. *Computers and Education*, 52(1), 13–26. <https://doi.org/10.1016/j.compedu.2008.06.003>
- Indriyani, G., & Pertiwi, I. S. (2021). Exploring the EFL Students' Reading Strategies Used on Reading Academic Articles. *PANYONARA: Journal of English Education*, 3(2), 71–79. <https://doi.org/10.19105/panyonara.v3i2.5008>
- Intan Sari, M. (2016). Cognitive and Metacognitive Reading Strategy Use and Reading Comprehension Performance of Indonesian EFL Pre-service Teachers. *Journal of Foreign Language Teaching and Learning*, 1(2). <https://doi.org/10.18196/ftl.1213>
- Lakens, D. (2013). Calculating and reporting effect sizes to facilitate cumulative science: A practical primer for t-tests and ANOVAs. *Frontiers in Psychology*, 4(NOV), 1–12. <https://doi.org/10.3389/fpsyg.2013.00863>
- Mohseni, F., Seifoori, Z., & Ahangari, S. (2020). The impact of metacognitive strategy training and critical thinking awareness-raising on reading comprehension. *Cogent Education*, 7(1), 1–22. <https://doi.org/10.1080/2331186X.2020.1720946>
- 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>
- Mokhtari, K., & Sheorey, R. (2002). Measuring ESL Students' Awareness of Reading Strategies. *Journal of Developmental Education*, 25(3), 2–10.
- Mudra, H. (2018). Metacognitive Online Reading Strategies among Pre-Service EFL Teachers in Indonesia. *Educational Process International Journal*, 7(2), 151–164. <https://doi.org/10.22521/edupij.2018.72.5>
- Naghdi-pour, B., & Kadhim, K. A. (2021). Exploring Omani EFL Students' Written Linguistic Accuracy Development in Disciplinary Contexts. *3L The Southeast Asian Journal of English Language Studies*, 27(3), 129–144. <https://doi.org/10.17576/3l-2021-2703-08>
- Oxford, R. L. (1990). *Language learning strategies: What every teacher should know*. Heinle & Heinle Publishers.
- Öztürk, S. Y. (2018). Use of Metacognitive Online Reading Strategies by Student Teachers of English. *European Journal of Foreign Language Teaching*, 3(3), 17–32. <https://doi.org/10.5281/zenodo.1297197>
- Peart, S. M. (2017). L2 Reading: Strategies and Gender Preferences in the Foreign Language Classroom. *Lengua y Textos*, 45(45), 17–27. <https://doi.org/10.4995/lyt.2017.7437>
- Phakiti, A. (2008). Strategic Competence as a Fourth-Order Factor Model: A Structural Equation Modeling Approach. *Language Assessment Quarterly*, 5(1), 20–42. <https://doi.org/10.1080/15434300701533596>
- Pookcharoen, S. (2009). *Metacognitive online reading strategies among Thai EFL university students*. Graduate Theses and Dissertations (Vol. 71, Issues 2-A) [Indiana University]. <https://search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2010-99151-068&site=ehost-live>
- Ramli, N. F. M., Darus, S., & Bakar, N. A. (2011). Metacognitive online reading strategies of adult ESL learners using a Learning Management System. *Theory and Practice in Language Studies*, 1(3), 195–204. <https://doi.org/10.4304/tpls.1.3.195-204>
- Rianto, A. (2021). Indonesian EFL university students' metacognitive online reading strategies before and during the Covid-19 pandemic. *Studies in English Language and Education*, 8(1), 16–33. <https://doi.org/http://dx.doi.org/10.24815/siele.v8i1.18110>
- Sheorey, R., & Mokhtari, K. (2001). Differences in the metacognitive awareness of reading strategies among native and non-native readers. *System*, 29(4), 431–449. [https://doi.org/10.1016/S0346-251X\(01\)00039-2](https://doi.org/10.1016/S0346-251X(01)00039-2)
- Taki, S. (2016). Metacognitive online reading strategy use: Readers' perceptions in L1 and L2. *Journal of Research in Reading*, 39(4), 409–427. <https://doi.org/10.1111/1467-9817.12048>
- Zenotz, V. (2012). Awareness development for online reading. *Language Awareness*, 21(1–2), 85–100. <https://doi.org/10.1080/09658416.2011.639893>
- Zijlmans, E. A. O., Tijmstra, J., van der Ark, L. A., & Sijtsma, K. (2019). Item-score reliability as a selection tool in test construction. *Frontiers in Psychology*, 9(JAN), 1–12. <https://doi.org/10.3389/fpsyg.2018.02298>