Examining gender differences in reading strategies, reading skills, and English proficiency of EFL University students

Agus Rianto

Abstract: Many previous studies have examined metacognitive strategy use among ESL students in offline reading settings, but very few have linked them to a gender context, especially among EFL students when reading online English texts. This research, therefore, explored gender differences in metacognitive strategy usage among Indonesian EFL students in relation to online reading abilities and English proficiency. It enlisted the participation of 426 female and 176 male students from the University of Borneo Tarakan. The data was collected using the OSORS (Online Survey of Reading Strategies), a self-rated online reading ability question, and an English proficiency test. An independent sample t-test, Pearson correlation, and simple and multiple linear regression were used to analyze the data. Significant gender differences were discovered in overall, problem-solving, and support strategy usage, despite the small effect size values, with the female students scoring better on average than the males. For self-assessed online reading ability and online English proficiency, no gender difference was identified. Among the less skilled readers, significant gender differences were identified in overall and support strategies, whereas among the skilled readers, no significant gender differences

ABOUT THE AUTHOR
Agus Rianto is an Assistant Professor in the English Department and currently serves as Head of the Language Center at the University of Borneo Tarakan, Indonesia. He holds a PhD in Teaching English as a Second Language from Universiti Putra Malaysia. He has taught English in Malaysia and Indonesia. His research interests are related to TESL and TEFL, especially in language learning strategies. He has written some articles published in national and international indexed journals.

PUBLIC INTEREST STATEMENT
Although studies on metacognitive strategies and reading comprehension have been widely undertaken in a global context, very few studies have involved Indonesian EFL students in these fields. This study concentrates on investigating gender differences in the use of metacognitive strategies among Indonesian EFL students in relation to online reading skills and English language proficiency. Specifically, this study aims to investigate whether there are significant differences between Indonesian male and female students in the use of metacognitive online reading strategies, self-assessed online reading skills, and online English proficiency. Other questions it investigates are whether there is a gender gap in the strategy use and the online English proficiency among the students with higher and lower online reading skills, whether there is a significant correlation between the strategy use and the online reading skills and the online English proficiency on gender basis, and whether the strategy use can predict the reading ability and the English proficiency on gender basis.
were observed in both overall and category strategies. There were no gender differences in online English proficiency among the less skilled and skilled readers. Overall strategy use among the females predicted online reading abilities and online English proficiency, while among the males only predicted online reading abilities. These findings add to the growing body of research demonstrating female dominance in EFL online reading programs and have pedagogical implications.

Subjects: Gender Studies; Educational Research; Higher Education; Teachers & Teacher Education; Theory of Education; Language Teaching & Learning

Keywords: EFL students; English proficiency; gender; metacognitive strategies; reading skills

1. Introduction

In foreign language learning, gender is believed to be one of the key factors that plays a role in determining the readiness and progress of learning. How a language is learned can also be determined by gender. General assumptions and empirical evidence indicate that women can learn languages more quickly than men (Wightman, 2020). Interested in uncovering more about this issue, the current research was carried out to explore gender differences in the use of metacognitive strategies in relation to online reading abilities and English proficiency of Indonesian university students learning English as a Foreign Language (EFL).

In the foreign language learning process, reading becomes needed skills, especially in higher education, because students are required to read more independently and critically. The ability to read in a foreign language learning is a complex process that involves many variables, including the use of reading strategies and individual differences of readers. Studies show that the ability to read a foreign language is strongly correlated with the strategies used by readers when interpreting texts and requires different levels of processing coordination (Grabe, 2010; Oxford, 2011). In addition, individual differences such as gender and language proficiency levels, also play a role in the choice of reading strategy use and the ability to read foreign languages, where more skilled readers tend to use a wider variety of strategies than those with reading problems (Peart, 2017). Although many studies have been carried out in this area, research that takes gender variables into account in the use of online reading strategies is relatively rare (Alexander Poole, 2005; Phakiti, 2008; Rianto, 2021). In fact, there is much less research on this issue involving Indonesian EFL students. This research is very important because it can provide additional empirical evidence on the gender gap in learning English as a foreign language, particularly in Indonesia's higher education context.

2. Review of literature

2.1. Reading strategies and foreign language learning

It is believed that the use of reading strategies is closely linked to reading comprehension of foreign languages. Many scholars in this field agree that the use of reading strategies can be maximized and have a great influence on addressing difficulties of reading comprehension (B. Y. B-Y. Cho et al., 2017; B. Y. Byeong-Young Cho et al., 2018; Hudson, 2009; Lee & List, 2019; Philip & Martin Noel, 2017; Zhang & Seepho, 2013). Abbott (2006) described reading strategies as cognitive processes that readers select and implement to comprehend what they read. There are different types of strategies that can be applied to the reading process such as those that are directly used (cognitive strategies) and indirectly used (metacognitive strategies). Cognitive strategies are thought to help students recreate the context of the text being read, and they are controlled or monitored by metacognitive strategies (Grabe, 2010). Metacognitive strategies were described by Sheorey and Mokhtari (2001) as conscious and deliberate reading processes involving self-examination and self-regulation, such as making decisions about cognitive needs. In addition,
Anderson (2003) suggested that in language learning, the use of metacognitive strategies plays a more efficient role because students understand how to structure their learning.

Since the last two decades, metacognitive reading strategy use has become a topic of many research. An instrument called Survey of Reading Strategies (SORS) was created by Mokhtari and Sheorey (2002) to assess the metacognitive awareness of students learning a second language. These scholars divided the strategies into three categories: global, problem solving, and support. Global strategies are strategies used by learners to monitor their success and use of other strategies, prepare to read individual texts, and set targets for reading. Problem-solving strategies involve the steps students take to understand a given text, like keeping back on track when they lose focus, reading carefully, and visualizing information in the text they process. Support strategies are used by students when they encounter challenges in reading the text, even after they have used global and problem solving strategies. A bilingual or multilingual dictionary, questioning yourself, as well as translating from target language into the learner’s mother tongue are some examples of support strategies.

Many research that also adopted SORS have investigated the strategies among EFL students in both offline and online reading practices. In the offline reading context, several studies explored the discrepancies in the strategy use on the basis of learner individual differences (Aziz et al., 2019; Deliany & Cahyono, 2020; Ismail, 2016; Maasum & Maarof, 2012; Mokhtari & Sheorey, 2002; Sheorey & Mokhtari, 2001). The correlation between the strategy use and reading achievement was explored in several other research (Dardjito, 2019; Fitrisia et al., 2015; Kutluturk & Yumru, 2017; Miller, 2017; Mohseni et al., 2020; Takallou, 2011; Usman et al., 2017; Wahyuni et al., 2018). More interestingly, other studies have based their analyses on the strategy use among students with disabilities (Chevalier et al., 2017; Cox-Magno, 2018; Girli & Halil, 2017). In general, these studies assume that to help readers attain reading comprehension more efficiently, they need to have metacognitive consciousness.

In the context of online reading, Anderson (2003) investigated the difference in the strategy use between ESL and EFL students by using the Online Survey of Reading Strategies (OSORS). The study found that in their use of global and support strategies, the EFL and the ESL students did not differ significantly, and the problem solving strategy was used more often by the EFL readers. Research among Iranian EFL students showed that the problem-solving strategies were most often used and the support strategies were least used (Ahmadian & Pasand, 2017; Marboot et al., 2020; Taki & Soleimani, 2012). Other research involving EFL students in the Middle East also found that the problem-solving strategies were the most frequently used (Darwish, 2017; Mukhlif & Amir, 2017; Omar, 2014). Furthermore, Azmuddin et al. (2017) found that in Malaysia, the students more frequently used the problem-solving strategies, followed by the global strategies and the support strategies. However, Ramli et al. (2011) who also studied Malaysian students reported slightly different results that the global reading strategies were used more frequently, followed by the problem-solving strategies and the support strategies.

Meanwhile, several recent studies have concentrated on exploring the instructional impact of reading strategies on reading comprehension. In an experimental study examining the effects of a computerized metacognitive reading strategy awareness on reading comprehension of Iranian EFL students, Reshadi-Gajan et al. (2020) found that the strategy use had a positive effect on the students’ reading comprehension. Marboot et al. (2020), who examined the potential correlation between metacognitive online reading strategies in academic texts and critical thinking, found a favorable and important, though weak, relationship between the strategy use and the critical thinking skills. Their analysis also showed that, the students strongly tended to use more the problem-solving strategies followed by the global strategies and the support strategies. In a study examining a causal relationship between strategy categories and self-regulation in influencing reading ability, Amini et al. (2020) found a positive relationship between the three strategy categories and the reading ability by mediating the role of self-regulation. Meanwhile, a study by
Alsofyani (2019) found the metacognitive strategy-based discussion had a positive effect on the students’ reading comprehension. Some earlier studies that also investigated the same area found that the online readers outperformed the offline readers in overall reading comprehension (Huang, 2014), and the strategy training affected the students’ online reading positively, but did not affect the strategy use (Zenotz, 2012). Previously, (Huang et al., 2009) found that the support strategies contributed to a large part of the students’ improvement in reading comprehension, although they failed to predict an increase in the students’ understanding of the more difficult texts.

Most of the studies reviewed suggest that the use of reading strategies can be maximized to overcome problems with reading comprehension. However, there are still very limited studies that explore the use of metacognitive strategies in relation to online reading abilities and English proficiency, especially involving Indonesian EFL students of different genders. Studies in this field are very significant because they include new knowledge that will further enhance students’ reading skills. Students can develop valuable reflections through metacognitive knowledge and evaluate their thinking that can lead to particular changes in the way they learn. Students should be metacognitively aware of what they are doing in order to obtain the maximum understanding of reading. For example, students should have metacognitive awareness when engaging in an online reading assignment by linking their strategies to their online objectives. Phakiti (2008) stated that metacognition is considered a predictor of reading comprehension because readers know the means used to achieve their reading objectives.

2.2. Gender differences in reading strategy use and reading comprehension achievement
Researchers believe that when it comes to language learning, most male and female students have different styles and ways of thinking. Studies have been undertaken involving international students on gender and metacognitive strategy use. Although the majority reported that the females appear to be better users of the strategies than the males, the findings of these studies are far from conclusive. For instance, in a recent study exploring the use of metacognitive strategies among students from four central European countries (Poland, Hungary, Slovakia, and the Czech Republic), Gavora et al. (2020) found no gender gap in the use of the analytical strategies and the women’s preferences for the pragmatic strategies. The analytical strategies were focused on text content inference and interpretation, and the pragmatic strategies concentrated on recognizing and memorizing bits of knowledge. The instrument used in this research was the metacognitive reading strategies questionnaire (Taraban, 2011). Meanwhile, Sheorey and Mokhtari (2001) who investigated the differences in the strategy use between the native English speakers (USA students) and the non-native speakers while reading academic content, found that the female students in the native-speaking group reported a much higher frequency of strategy use, while the group of ESL students did not reflect this gender influence.

The dominance of most female students over males in the use of metacognitive strategies has also been demonstrated by many other studies involving EFL/ESL students from different nations. Using the 2009 PISA (Program for International Student Assessment) database, Wu (2014), who explored how knowledge of metacognitive strategies and navigation influenced the relationship between the online reading practices and the printed reading assessment (PRA) and the electronic reading assessment (ERA), found that gender in the online reading practices was not statistically relevant in most countries. However, in understanding of the metacognitive strategies, the navigation abilities and PRA, the women performed better, but not substantially better in ERA. Meanwhile, Alex Poole’s (2009) research involving 352 Colombian ESL students showed that the overall usage of metacognitive strategies was slightly higher for the female students than for the male students. Another study by Alexander Poole (2005) involving 328 Chinese ESL students showed that the female students used far more strategies than the male students.

Inconsistent findings were also disclosed in other studies involving EFL/ESL Arab students. Hamad (2019) who examined the use of online metacognitive strategies in Arabic and English among Saudi ESL and EFL students revealed that when language use was not analyzed, the male
and the female students did not differ in the use of global, support, and problem solving strategies. Likewise, when gender differences were not analyzed, the EFL/ESL speakers and the Arabic speakers did not differ in the use of metacognitive strategies. However, when reading in English, the male participants reported using more global, support, and problem solving strategies than the females, and the participants did not differ with respect to metacognitive strategies in Arabic by gender. Another study by Alami (2016) that examined the strategy use among Omani students showed that the strategy comprehension of the students was at a moderate level and the strategies were used more frequently by the female than the male students.

Some studies in this area were also conducted with other Asian EFL students. Rostami Abusaeedi and Khabir (2017) who explored the relationship between the strategy preferences and the perfection among Iranian students revealed that the strategy use had a significant negative relationship with the perfection and there was no significant difference in the strategy use between the male and the female students. In addition, Ahmadian and Posand (2017) who explored the use of the strategies in relation to self-efficacy revealed that the female students used more online reading strategies globally, while the male students considered themselves more effective in reading texts online. Previously, Taki and Soleimani (2012) who studied online reading strategies discovered that while there were no major variations in overall strategy usage between the male and the female students, individual strategies varied significantly. In several studies involving Indonesian EFL students, related results have also been reported. Gusti et al. (2020) who researched online reading strategies, found that when performing reading exercises, the students most frequently used the problem-solving strategies and found no gender gap in the strategy use. Another research by Delianny and Cahyono (2020) showed that metacognitive reading strategies were used highly by all students and gender did not play a role in deciding these strategies' awareness and usage. Meanwhile, Ardianingsih and Salim (2019) revealed that the female students had a better average score than the male students in their metacognitive awareness, both in the overall strategies and the individual strategies. In addition, Hapsari (2019) who identified the strategy usage among first semester graduate students revealed that the female students used the strategy more frequently than their male counterparts. More precisely, to help them understand what they were reading, both the male and the female students preferred to reread texts and circle or underline details.

While studies on metacognitive strategies and reading comprehension have been widely carried out in the global context, there is very little research involving Indonesian EFL students in this field. Moreover, much of the existing studies concentrate on the use of strategy in offline reading processes. More research focusing on online reading processes in relation to gender gaps, especially in Indonesia's higher education environment, is needed to address the challenges faced in today's learning situations. It is also really relevant to study gender gaps in students' online reading abilities and online English proficiency. In addition, relationship between the strategy use and reading skill and English proficiency on a gender basis is also important to examine. Findings of studies in this area are useful not only for students, but also for teachers and administrators of foreign language study programs to help assess if they properly fulfill their students' literacy needs and directly counter potential gender bias. Therefore, to explore these important issues, this study aimed to answer the following research questions:

1. Are there significant differences between male and female EFL Indonesian students in the use of metacognitive online reading strategies, self-rated online reading ability, and online English proficiency?
2. Are there gender gaps in the strategy use and the online English proficiency among students with higher reading skills (skilled readers) and lower online reading skills (less skilled readers)?
3. Are there significant correlations between the strategy use and the reading abilities and the English proficiency on gender basis?
(4) Can the strategy use predict the reading abilities and the English proficiency on gender basis?

3. Method

3.1. Design
This study adopted a quantitative paradigm, in which it used quantitative data and statistical approaches to investigate phenomena in a systematic manner. It employed survey and correlational research methods (Fraenkel et al., 2012). Using an online survey, the researcher asked the respondents questions on their usage of online metacognitive reading strategies. The correlational method was employed to investigate the relationship between the usage of the online metacognitive reading strategies and the English proficiency on gender basis. The results of the investigation were given in a numerical format.

3.2. Participants
Participants in this quantitative study were selected using purposive sampling technique. Because the purpose of this study was to explore gender gaps in metacognitive strategy use among Indonesian EFL students in relation to online reading abilities and English proficiency, the researcher set specific criteria as population requirements, namely Indonesian university students taking a compulsory English subject that was taught through blended learning. The use of this sampling technique allows researchers to target a specific group of individuals to become the research participants so that the data collection process can continue until the required sample size is met (Cohen et al., 2007). Selection of the target participants was made by inviting the students who were taking the compulsory English subject from seven faculties in the University of Borneo Tarakan to participate in the study via the Google form link. The researcher also sent requests to lecturers and staff of the department to distribute the online survey in their social media groups as part of targeted sampling. The students were informed that their participation was voluntary and had no impact on their academic achievement.

After a duration of two weeks, the researcher closed the survey and recorded 602 student responses. Demographic and academic variables of the samples are illustrated in Table 1. The participants consisted of 426 female students and 176 male students, aged between 18 and 21 years. In addition, a total of 99 female and 45 male students reported higher online reading abilities (grouped as skilled readers), while 327 female and 131 male students reported lower online reading abilities (grouped as less skilled readers). The distinction between skilled and less skilled readers was based on a self-assessment of the ability to understand the English texts they read online. Those who reported their online reading ability as excellent, very good, or good were classified as skilled readers and those who reported as fair or poor were classified as less skilled readers. Overall, the participants in this study had a basic level of English competence, as indicated by results of the online English proficiency test, based on the following proficiency levels: basic user/A2 (with a score of 337–459), independent user/B1 (with a score of 460–542), independent user/B2 (with a score of 543–626), and proficient user/C1 (with a score of 627–677).

3.3. Instrument
For the collection of data, three types of instruments were used. First, the Online Survey of Reading Strategies (OSORS), adopted from Anderson (2003), was used to assess the use of metacognitive reading strategies. To conform to the sample characteristics, however, a small modification was made in that item 37 was changed to “I translate from English to Indonesian when reading online” and item 38 to “I think of information in English and Indonesian when reading online.” This instrument used a 5-point Likert scale ranging from 1 (Never or almost never do this) to 5 (Always or almost always do this). To allow participants to comprehend the information in each item, this instrument was translated into Indonesian and then translated back into English (Mulyono et al., 2021). Meanwhile, to ensure accuracy and readability, the instrument was read and reread (Zulaiha et al., 2020). The results of the reliability test indicated that this instrument
can be relied on to measure the strategy use. The reliability coefficient values for the overall strategy and strategy categories are as follows: overall strategies ($\alpha = .935$), global strategies ($\alpha = .892$), problem solving strategies ($\alpha = .849$), and support strategies ($\alpha = .808$). These results support Anderson’s (2003) reliability test results, which showed that Cronbach’s alpha for the whole OSORS was .92, global strategies were .77, problem-solving strategies were .64, and support strategies were .69, indicating that the OSORS is a reliable instrument for assessing metacognitive online reading strategies of L2 readers. Second, this study used a single item instrument to assess the participants’ online reading skill levels. This item asked the participants to self-assess their ability to comprehend academic material in English. Again, to ensure accuracy and readability, the instrument was read and reread. According to Bergkvist (2015) when a single item is unambiguous, a 1-item questionnaire can be as effective as a multi-item questionnaire. This item was equipped with 5 answer choices, namely, excellent, very good, good, fair, and poor. Third, an English test that adopted the TOEFL ITP model was used to assess the English proficiency of participants. In this test, the English skills and components tested included listening comprehension, structure and written expression, and reading comprehension (Educational Testing Service, 2017). Cronbach’s alpha for this instrument was evaluated to test its reliability and the results showed high internal

| Table 1. Demographic and academic variables of the samples | Frequency | Percent |
|----------------------------------------------------------|-----------|---------|
| Gender                                                   |           |         |
| Male                                                     | 176       | 29      |
| Female                                                   | 426       | 71      |
| Total (n)                                                | 602       | 100     |
| Major                                                    |           |         |
| Languages                                                | 160       | 27      |
| Social sciences                                          | 135       | 22      |
| Sciences                                                 | 307       | 51      |
| Total (n)                                                | 602       | 100     |
| Self-Rated Online Reading Ability                        |           |         |
| Less Skilled                                             | 458       | 76      |
| Skilled                                                  | 144       | 24      |
| Total (n)                                                | 602       | 100     |
| Online English Proficiency                               |           |         |
| Basic user/A2 (337–459)                                  | 602       | 100     |
| Independent user/B1 (460–542)                            | 0         | 0       |
| Independent user/B2 (543–626)                            | 0         | 0       |
| Proficient user/C1 (627–677)                             | 0         | 0       |
| Total (n)                                                | 602       | 100     |

| Table 2. Results of reliability for OSORS and online English proficiency test | Cronbach’s Alpha | Number of Items |
|------------------------------------------------------------------------------|------------------|-----------------|
| OSORS                                                                        |                  |                 |
| Overall                                                                     | .935             | 39              |
| Global strategies                                                           | .892             | 17              |
| Problem-solving strategies                                                  | .849             | 12              |
| Support strategies                                                          | .808             | 10              |
| Online English Proficiency                                                  |                  |                 |
| Overall                                                                     | .742             | 140             |
consistence with Cronbach’s α of .742. Table 2 shows the results of reliability for the OSORS and the online English proficiency test.

3.4. Procedure
Collection of data for the strategy use was carried out through the Google Form application with the assistance from the English lecturers who shared the form link with their students. The questionnaire was completed outside of class hours. The process of collecting data through this questionnaire was carried out for two weeks before the students took the English test that was organized by the university’s Language Center. In the first part of the questionnaire, the students were asked to fill out background questions. In the next section, the students were required to answer each strategy item by clicking on one of the numbers from 1–5. Meanwhile, data for online reading ability were taken from participants’ responses to the single item instrument asking them to self-assess their ability to comprehend academic texts in English when they read them online. Participants were asked to choose one of the 5 answer choices given in that question. To simplify the data collection process, the question was included in the OSORS instrument, as a separate item. As for English language proficiency, the data were taken from the results of the English test which was held online by the Language Center of the University of Borneo Tarakan. The test that was compulsory for every student consisted of 140 questions with multiple choice answers. In detail, 50 questions were for the listening comprehension, 40 questions were for the structure and written expression, and 50 questions were for reading comprehension. The participants were given 120 minutes to do the test. This test was conducted during the time of the study, precisely after a 2-week period of data collection for OSORS.

3.5. Data analysis
An independent sample t-test was used to analyze data relevant to the first and second research questions. For the first question, this parametric test was performed to determine if there were significant mean differences in the use of metacognitive online reading strategies, self-rated online reading ability and online English proficiency between the male and the female students. On the second question, a t-test was performed to analyze gender gaps in the strategy use and the English proficiency among the students with higher and lower online reading abilities. In addition, an analysis of effect sizes allows this study to measure the magnitude of the mean differences. Because there were different sample sizes, this study used Hedges’ g as a measure of effect sizes. A small effect size is defined as g = .2, a medium effect size is defined as g = .5, and a large effect size is defined as g = .8. This indicates that even if the difference between the two groups’ means is statistically significant, the difference is insignificant if it is smaller than .2 standard deviation (Lakens, 2013).

Data for the third research question was analyzed using the Pearson correlation to determine whether there were significant correlations between the strategy use and the online reading abilities and the English proficiency on a gender basis. Lastly, using simple and multiple linear regression, the data for the fourth research question was analyzed. The simple linear regression was performed to analyze whether the overall strategy use could predict the online reading abilities and the online English proficiency on a gender basis. The multiple linear regression was conducted to analyze if the strategy use by categories could predict the online reading abilities and the online English proficiency on a gender basis. To ensure that the sample data was taken from a normally distributed population, a normality test was carried out before performing the regression analysis.

4. Findings
The first research question was intended to examine whether there were significant differences in the use of metacognitive online reading strategies, the self-rated online reading abilities, and the online English proficiency between the male and the female students. Table 3 shows the results of the independent sample t-test and the effect sizes for this research question. First, there was a significant gender difference in the overall strategy use, with the male students having a lower
Table 3. Gender differences in strategy use, self-rated online reading ability, and online English proficiency

|                        | Male (n = 176) | Female (n = 426) | t      | p    | Effect size |
|------------------------|---------------|------------------|--------|------|-------------|
|                        | M            | SD   | M      | SD   |       | Hedges’ g  |
| Overall strategies     | 3.63         | .59  | 3.76   | .55  | -2.595| .010*      | .23         |
| Global strategies      | 3.51         | .67  | 3.60   | .63  | -1.658| .098      | .14         |
| Problem-solving strategies | 3.73        | .62  | 3.86   | .63  | -2.351| .019*     | .21         |
| Support strategies     | 3.57         | .73  | 3.73   | .69  | -2.524| .012*     | .23         |
| Self-rated online reading ability | 2.91    | .90  | 2.92   | .82  | -.084 | .933      | .01         |
| Online English proficiency | 363.72    | 52.195 | 367.68 | 56.174 | -.804 | .422      | .07         |

* p < .05

mean score than the female students (male: M = 3.63, SD = .59; female: M = 3.76, SD = .55; p = .010). However, the effect size value indicates that the mean difference between the male and the female students in the overall strategy use was small (g = .23). Regarding the category strategy use, significant gender differences were found in the problem-solving strategies (male: M = 3.73, SD = .62; female: M = 3.86, SD = .63; p = .019) and the support strategies (male: M = 3.57, SD = .73; female: M = 3.73, SD = .69; p = .012), also with the male students having lower mean scores than the female students for both strategies. The effect size values suggest that the mean differences between the male and the female students in the use of the two strategies were also small (problem-solving strategies: g = .21; support strategies: g = .23). Meanwhile, in the global strategy use, there was no significant gender difference, despite the fact that the male students had a lower mean score than the female students, with the effect size value being very small (male: M = 3.51, SD = .67; female: M = 3.60, SD = .63; p = .998; g = .14). Second, related to the self-rated online reading ability, no significant gender differences were found, with the male and female students having almost the same mean scores and the effect size value approaching zero (male: M = 2.91, SD = .90; female: M = 2.92, SD = .82; p = .933; g = .01). Third, for the online English proficiency, there was no significant gender difference, with the male students having slightly lower mean score than the female students and the effect size value that was close to zero (male: M = 363.72, SD = 52.195; female: M = 367.68, SD = 56.174; p = .422; g = .07).

The second research question was aimed at determining whether there were gender gaps in the strategy use and the online English proficiency among the less skilled readers and the skilled readers. Table 4 illustrates the results of the independent sample t-test and the effect sizes for this research question. The students were divided into two groups based on their responses to a question about their self-reported online reading ability: the less skilled readers (those who rated themselves fair or poor in online English reading) and the skilled readers (those who rated themselves excellent, very good, or good in online English reading). Less skilled readers consisted of 327 female students and 131 male students, while skilled readers consisted of 99 female students and 45 male students.
### Table 4. Gender differences in strategy use and online English proficiency for less skilled and skilled readers

|                      | Male (n = 131) | Female (n = 327) | t    | p     | Effect size |
|----------------------|---------------|------------------|------|-------|-------------|
|                      | M            | SD              | M    | SD    | Hedges' g   |
| **Overall strategy** | 3.36         | .57             | 3.49 | .55   | -2.279      | .023* | .23 |
| **Global strategies**| 3.20         | .63             | 3.30 | .62   | -1.531      | .126  | .16 |
| **Problem-solving strategies** | 3.61 | .62 | 3.70 | .60 | -1.530 | .127 | .15 |
| **Support strategies**   | 3.34           | .72             | 3.57 | .70   | -3.124      | .002* | .32 |
| **Online English proficiency** | 361.47 | 44.52           | 363.96 | 52.01 | -4.83      | .630  | .05 |

|                      | Male (n = 45) | Female (n = 99) | t    | p     | Effect size |
|----------------------|---------------|------------------|------|-------|-------------|
|                      | M            | SD              | M    | SD    | Hedges' g   |
| **Overall strategies** | 3.67         | .54             | 3.79 | .47   | -1.385      | .168  | .24 |
| **Global strategies** | 3.60         | .66             | 3.67 | .52   | -.710       | .479  | .12 |
| **Problem-solving strategies** | 3.81 | .55 | 3.95 | .55 | -1.422 | .157 | .26 |
| **Support strategies**   | 3.62           | .63             | 3.81 | .58   | -1.737      | .085  | .32 |
| **Online English proficiency** | 370.27 | 70.14           | 379.97 | 66.99 | -0.794     | .429  | .14 |

*p < .05
In the case of less skilled readers, there was a significant gender difference in the overall strategy use, with the male students having a lower mean score than the female students (male: M = 3.36, SD = .57; female: M = 3.49, SD = .55; p = .023). The effect size value, on the other hand, shows that the mean difference in the overall strategy use between the two genders among the less skilled readers was small (g = .23). In the category strategy usage, significant gender differences were only identified in the support strategies, with the male students having a smaller mean score than the female students (male: M = 3.34, SD = .72; female: M = 3.57, SD = .70; p= .002). Similarly, the effect size value indicates that there was a small mean difference in the use of support strategies between the two genders (g = .32). Meanwhile, there were no significant gender differences in the use of problem-solving strategies (male: M = 3.61, SD = .62; female: M = 3.70, SD = .60; p = .127; g = .15) and global strategies (male: M = 3.20, SD = .63; female: M = 3.30, SD = .60; p = .16; g = .16), despite the fact that for both strategies the female students having higher mean scores than the male students, with the effect size values that were very small. In addition, regarding the online English proficiency, no significant gender difference was found, with the male and female students having slightly different mean scores and the effect size value approaching zero (male: M = 361.47, SD = 44.52; female: M = 363.96, SD = 52.01; p = .630; g = .05).

Meanwhile, in the case of the skilled readers, there were no significant gender differences in the use of both overall and category strategies, regardless of the fact that the female students had higher mean scores than the male students, both for the overall use (male: M = 3.67, SD = .54; female: M = 3.79, SD = .47; p = .168; g = .24) and the category use, namely global strategies (male: M = 3.60, SD = .66; female: M = 3.67, SD = .52; p = .479; g = .12), problem-solving strategies (male: M = 3.81, SD = .55; female: M = 3.95, SD = .55; p = .157; g = .26), and support strategies (male: M = 3.62, SD = .63; female: M = 3.81, SD = .58; p = .085; g = .32). Regarding the online English proficiency, gender differences among the skilled readers were also not identified, despite the fact that the female students had a higher mean score than male students, with the effect size values that were very small (male: M = 370.27, SD = 70.14; female: M = 379.97, SD = 66.99; p = .429; g = .14).

Data for the third research question was analyzed using the Pearson correlation to find out if there was a significant relationship between the strategy use and the ability to read online and between the strategy use and the online English proficiency. The findings of the analysis are shown in Table 5. For the male students, significant correlations were found between the overall strategy use (r = .248), the global strategy use (r = .295), the problem solving strategy use (r = .156), the

| Table 5. Results of Pearson correlation for strategy use, self-rated online reading ability, and online English proficiency |
|---|---|---|---|---|
| Gender | Variable | Overall Strategies | Global Strategy | Problem-Solving Strategy | Support Strategy |
| Male | Self-rated online reading ability | .248* | .295* | .156* | .160* |
| Online English proficiency | -.001 | .007 | -.058 | .044 |
| Female | Self-rated online reading ability | .318* | .362* | .240* | .183* |
| Online English proficiency | .130* | .175* | .094* | .039 |

*p < .05
support strategy use (r = .160) and the self-rated online reading abilities. However, no significant correlation was identified between the overall strategy use (r = −.001), the global strategy use (r = .007), the problem solving strategy use (r = −.058), the support strategy use (r = .044) and the online English proficiency among the male students. For the female students, significant correlations were found between the overall strategy use (r = .318), the global strategy use (r = .362), the problem-solving strategy use (r = .240), the support strategy use (r = .183) and the self-rated online reading abilities, and between the overall strategy use (r = .130), the global strategy use (r = .175), the problem-solving strategy use (r = .094) and the online English proficiency. However, no significant correlation was found between the support strategy use and the online English proficiency (r = .039) among these female students.

The data for the fourth research question was examined using simple and multiple linear regression. Before performing regression analysis, a normality test was carried out to determine whether the sample data was taken from a normally distributed population. The results of a Kolmogorov-Smirnov test indicated that the sample data for all regression models investigated in this study followed a normal distribution, namely: Male's overall strategy use predicting self-rated online reading ability, D(176) = 1.042, p = .228; Female's overall strategy use predicting self-rated online reading ability, D(426) = .704, p = .704; Male's overall strategy use predicting online English proficiency, D(176) = 1.042, p = .228; Female's overall strategy use predicting online English proficiency, D(426) = .704, p = .704; Male's category strategy use predicting self-rated online reading ability, D(176) = .456, p = .985; Female's category strategy use predicting self-rated online reading ability, D(426) = .523, p = .947; Male's category strategy use predicting online English proficiency, D(176) = .897, p = .397; Female's category strategy use predicting online English proficiency, D(426) = .641, p = .805.

The simple regression analysis was performed to examine whether the overall strategy use predicted the self-rated online reading abilities and the online English proficiency. Results of the simple regression analysis are illustrated in Table 6. For the male students, their overall strategy use significantly predicted their self-rated online reading abilities (p = .001), with B = .386 indicating that for every 1-unit increase in the overall strategy use, the self-rated online reading ability increased by .386 units. However, the male's overall strategy use did not significantly predict the online English proficiency (p = .985). Meanwhile, for the female students, their overall strategy use significantly predicted their self-rated online reading abilities (p = .000) and their online English proficiency (p = .007). For every 1-unit increase in the female's overall strategy use, the self-rated

| Gender | Predictor | Dependent variable |
|--------|-----------|---------------------|
|        |           | Self-rated online reading ability |        |
| Male   | Overall strategy use | B | .386 | SE B | .115 | β | .248 | t | 3.371 | p | .001* |
| Female | Overall strategy use | B | .477 | SE B | .069 | β | .318 | t | 6.906 | p | .000* |
|        |           | Online English proficiency |        |
| Male   | Overall strategy use | B | −.130 | SE B | 6.842 | β | −.001 | t | −.019 | p | .985 |
| Female | Overall strategy use | B | 13.355 | SE B | 4.935 | β | .130 | t | 2.706 | p | .007* |

*p < .05
| Gender  | Predictor                      | B    | SE B | β    | t    | p    |
|---------|--------------------------------|------|------|------|------|------|
| Male    | Global strategies              | .461 | .135 | .338 | 3.400| .001* |
|         | Problem-solving strategies     | -.128| .175 | -.086| -.731| .466 |
|         | Support strategies             | .031 | .139 | .024 | .223 | .824 |
| Female  | Global strategies              | .484 | .081 | .366 | 5.982| .000* |
|         | Problem-solving strategies     | .037 | .097 | .027 | .387 | .699 |
|         | Support strategies             | -.047| .077 | -.039| -.610| .542 |

**Dependent Variable:** Self-rated online reading ability

**Online English proficiency**

| Gender  | Predictor                      | B    | SE B | β    | t    | p    |
|---------|--------------------------------|------|------|------|------|------|
| Male    | Global strategies              | 3.991| 8.125| .051 | .491 | .624 |
|         | Problem-solving strategies     | -19.017| 10.518| -.221| -1.808| .072 |
|         | Support strategies             | 12.979| 8.338| .176 | 1.557| .121 |
| Female  | Global strategies              | 19.448| 5.836| .215 | 3.332| .001*|
|         | Problem-solving strategies     | 1.377 | 6.964| .015 | .198 | .843 |
|         | Support strategies             | -7.400| 5.549| -.090| -1.334| .183 |

*p < .05
online reading ability increased by .477 units (B = .477) and the online English proficiency increased by 13.355 units (B = 13.355).

Furthermore, the multiple regression analysis was performed to determine whether the strategy use by categories (global, support, and problem-solving strategies) predicted the self-rated online reading abilities and the online English proficiency. Results of the multiple regression analysis are reported in Table 7. For the male students, of the three strategy categories, only the global strategy use significantly predicted the self-rated online reading abilities (p = .001), with B = .461 indicating that for every 1-unit increase in the global strategy use, the self-rated online reading ability increased by .461 units. However, the usage of the problem-solving strategies and the support strategies by the male students did not significantly predict their self-rated online reading ability. In addition, none of the three strategy categories significantly predicted their online English proficiency (the global strategies, p = .624; the problem-solving strategies, p = .072; the support strategies, p = .121). Meanwhile, for the female students, only the global strategy use significantly predicted the self-rated online reading abilities (p = .000) and the online English proficiency (p = .001). For every 1-unit increase in the female’s global strategy use, the self-rated online reading ability increased by .484 units (B = .484) and the online English proficiency increased by 19.448 units (B = 19.448). However, the employment of the problem-solving strategies and the support strategies by the female students did not significantly predict their self-rated online reading abilities and their online English proficiency.

5. Discussion

This research concentrated on investigating gender disparities in the use of metacognitive strategies of Indonesian EFL students in relation to online reading skills and English proficiency. As addressed in the first research question, this study identified significant gender differences in the usage of overall strategies, problem-solving strategies, and support strategies, all with small effect size values. Despite the fact that the female students scored higher on average than the male students in both the overall and category strategies, the effect size values indicate that the gender differences were minor. These findings support previous research on offline reading (Gavora et al., 2020; Peart, 2017; Alexander Poole, 2005; Sheorey & Mokhtari, 2001) and online reading (Ahmadian & Pasand, 2017; Ardiantingsih & Salim, 2019; Hapsari, 2019; Wu, 2014), which found that female students dominated the use of all metacognitive strategies. These study results add to the body of research evidence that the female students surpass males in using metacognitive strategies in EFL reading classes.

In terms of the existence of significant gender gaps in the use of overall strategies, problem-solving strategies, and support strategies, this study adds to the findings of several earlier research (Deliany & Cahyono, 2020; Gusti et al., 2020; Rostami Abusaiedi & Khabir, 2017; Taki & Soleimani, 2012). The closest support is given to the studies of Deliany and Cahyono (2020) and Gusti et al. (2020) all of which involving Indonesian EFL students. However, the current results contrast other previous research that found no gender gaps in the use of the strategies, either overall or by categories (Alami, 2016; Ardiantingsih & Salim, 2019; Gavora et al., 2020; Hamad, 2019; Hapsari, 2019; Sheorey & Mokhtari, 2001; Wu, 2014).

The study also revealed that both the male and the female students were frequent users of the strategies. These findings correspond with Rianto’s (2021) study, which found that both groups of students were highly aware of metacognitive strategies when reading academic texts in English. Of the three strategy categories, both the males and the females employed the problem-solving strategies most often followed by the global strategies and the support strategies. These results indicate that the male and the female students had similar perception regarding the use of metacognitive strategies where they considered the problem-solving strategies as the most effective strategies in their English learning. These results are in line with the findings of a previous study (Anderson, 2003) which showed the highest use for problem solving strategies. These results also corroborate the findings of previous research in the global context, such as studies involving
Iranian EFL students (Ahmadian & Pasand, 2017; Marboot et al., 2020; Taki & Soleimani, 2012), those involving EFL students in the Middle East (Darwish, 2017; Mukhlif & Amir, 2017; Omar, 2014), and those involving Southeast Asian students (Azmuddin et al., 2017; Gusti et al., 2020; Pookcharoen, 2009). All of these studies confirm that the problem solving strategies are the most frequently used strategies in EFL reading learning.

With respect to the online reading skills and the English proficiency, this study revealed that the female students gained better score than the male students, despite the fact that gender difference was not identified. These findings validate a commonly held belief, as well as the conclusions of several previous studies, that the female students were better to male students when it came to learning a second language (Slik et al., 2015; Wightman, 2020). This predominance of the female students in reading skills and English proficiency is most probably related to their tendency to use metacognitive strategies more often than the males. As revealed in this study, although both the male and the female students were the high users of the strategies, the female students used the strategies at a higher rate than the male students. This is consistent with the findings of the majority of studies in this field, which claim that employing metacognitive reading strategies can help to solve reading comprehension problems (Dardjito, 2019; Fitrisia et al., 2015; Kutluturk & Yumru, 2017; Miller, 2017; Mohseni et al., 2020; Takallou, 2011; Usman et al., 2017; Wahyuni et al., 2018).

Furthermore, when reading skill levels were taken into account, as in the second research question, this study discovered that the female students, both in the less skilled and skilled groups, surpassed the male students in terms of overall strategy use and online English proficiency. These results affirm other findings in this study concerning the female students’ dominance in the use of strategy categories while also confirming results of a previous study (Sheorey & Mokhtari, 2001) which found that the skilled students used more metacognitive strategies than the less skilled students.

The third and fourth research questions in this study provide further explanations for the female students’ supremacy in the online reading ability and the online English proficiency. On the third research question, it was discovered that the female students had a higher number of strategy usage than the male students, which was found to be strongly linked with their reading abilities and English proficiency. Significant correlations were identified between the use of overall strategies, global strategies, problem-solving strategies, and support strategies among female students, as well as their online reading abilities and English proficiency. Among the female students, significant correlations were identified between the use of overall strategies, global strategies, problem-solving strategies, support strategies and the self-rated online reading abilities and the online English proficiency. As for the male students, significant correlations were found only between the strategy uses and the online reading abilities.

In more detail, the findings of the fourth research question indicate that the usage of overall strategy among the male students may predict their online reading abilities, but it only explained 6.1 percent of the variance. Meanwhile, among the female students, the overall strategy use explained 10.1 percent of the variance. Additionally, the overall strategy used by the female students was able to predict their online English proficiency, but it only explained 1.7 percent of the variance, which was not the case for the male students. Furthermore, for the strategy use by categories, only the global strategies had the predictive power of the online reading abilities for both gender, explaining only 9.0 percent of the variance for the male students and 13.2 percent for the female students. Additionally, the global strategies were only able to predict the online English proficiency of the female students, with low predictive value. These results indicate that the female students employed the metacognitive strategies more frequently overall and by category, and that they were better at the online reading and the English proficiency, confirming the female students’ supremacy in the EFL learning process.
The findings of this study have some pedagogical implications. First, these findings are useful not only for students, but also for EFL teachers and program administrators in assessing whether they are meeting students’ learning requirements appropriately, particularly in terms of addressing potential gender bias. It was revealed in the study that the female students used the reading strategies more frequently and more creatively than the male students, and they adopted support strategies more often than the male students. These strategies appeared to help the students understand what they were reading and re-establish interaction between the texts and the readers. To minimize gender bias in foreign language learning, students should be given access to various strategies so that they may choose the best one for them. Furthermore, the male students must be taught about support strategies so that they are aware of them and may utilize them when reading.

In relation to strategies for interpreting specific texts, EFL teachers and the program administrators should utilize OSORS to foster discussions and reflection about some of the strategies accessible to readers when trying to understand texts. Data obtained from the use of this instrument can help students become more aware of the reading strategies as they process texts, improve their general grasp of the reading process, and boost their confidence in their reading abilities. Teachers will then be able to choose what extra strategies to teach students and what exercises to do in order for them to become proficient readers. If students are not utilizing global and support strategies as frequently as they should be, it is time to bring these strategies back into the classroom. These two types of strategies are critical for displaying control over students’ reading comprehension processes (Mokhtari & Sheorey, 2002). By employing global reading strategies, students may track their progress and regulate the usage of different strategies, plan reading particular texts, and create reading objectives based on the sort of reading accessible.

Meanwhile, students can employ support strategies such as using bilingual dictionaries, asking themselves questions, and translating from English into their mother tongue to help them grasp materials they do not comprehend. Support strategies are useful tools for helping students deal with difficult-to-understand texts even after global and problem-solving strategies have been employed (Peart, 2017). If, on the other hand, students have primarily relied on problem-solving strategies, they may require extra practice in the steps necessary to boost their confidence and ability to comprehend texts when they are engaged with them, such as regaining focus when they lose concentration, reading carefully, and visualizing the information in the text. Teachers can also create instructional resources to assist strategies that appear to be weak, particularly those chosen by the male and the female students, so that they use them more frequently and may assess and adopt their progress. This strategy training will produce proficient readers and avoiding any gender bias in foreign language learning. Subsequently, using OSORS or other instruments like it will help teachers, researchers, and students become more aware of how gender influences foreign language reading development and achievement, as well as to accommodate students’ individual needs, given that males and females should have equal opportunities to study and develop their reading proficiency.

The presence of significant correlations between the strategy usage and the levels of reading comprehension underlines the importance of using these strategies in the EFL learning process. Therefore, all stakeholders interested in the management of EFL learning are urged to have more knowledge on these strategies as they can contribute to enhanced reading comprehension and overall mastery of the English language. In addition, it was revealed that the problem-solving strategies were more frequently used by both the male and the female students and also by the students with low and high reading skills. These results suggest that while the skilled EFL readers were more likely to benefit from adopting problem-solving strategies, the less skilled EFL readers would also be helped in their reading comprehension if they were conscious of using the strategies. The students’ online reading comprehension can be enhanced by training on the use of problem-solving strategies as this strategy category serves as a mechanism to improve self-monitoring particularly when reading difficult online texts. Finally, known to be more frequently used by the students and effective in helping them interpret more challenging texts, instruction in the problem solving strategies should be included in the official EFL learning curriculum and textbooks.
There are several more interesting issues about metacognitive reading strategies that need to be further examined in relation to gender differences. Research in this field may be extended by connecting the use of strategy categories (global, problem solving, and support) and online text types. Another interesting research to carry out is to investigate the relationship between self-rated reading proficiency and general English proficiency and to find out whether the use of these strategies can mediate the relationship between the two types of English proficiency on a gender basis. Further study still needs to be done to answer the question whether the use of this strategy based on gender has significant power in predicting other language skills such as listening comprehension and grammar knowledge. Finally, it should be noted that the use of self-report based survey has drawbacks. Instruments like this do not report what respondents did, but what they agreed to do. In order to achieve a more complete picture and more accurate data on the use of these strategies, future research is encouraged to use interview and observation concurrently.

6. Conclusion
This research investigated gender disparities among EFL Indonesian students in the use of metacognitive strategies in relation to online reading ability and online English proficiency. It was inferred that, first, despite the small effect size value, significant gender differences in the use of overall strategies, problem-solving strategies, and support strategies were discovered, with the female students scoring better on average than the male students. In terms of the self-assessed online reading ability and the online English proficiency, no gender difference was identified, although the female students having a better mean score than the male students.

Second, in the case of less skilled readers, despite having small effect size values, there were significant gender differences in the use of overall strategy and support strategies, with the male students having lower mean scores than the female students. In addition, there were no significant gender differences in the use of problem-solving strategies and global strategies, despite the fact that in both strategies the female students having higher mean scores than the male students, with the effect size values that were very small. Regarding the online English proficiency, no significant gender difference was found, with the male and female students having slightly different mean scores and the effect size value approaching zero. Meanwhile, in the case of the skilled readers, there were no significant gender differences in the use of both overall and category strategies, regardless of the fact that the female students had higher mean scores than the male students. Regarding the online English proficiency, gender differences among the skilled readers were also not identified, despite the fact that the female students had a higher mean score than male students, with the effect size values that were very small.

Third, significant correlations were discovered between the overall strategy usage and the self-rated online reading ability among the male students, but no correlation was found between their overall strategy use and their English proficiency. Among the female students, significant correlations were identified not only between the overall strategy use and the self-assessed online reading ability, but also between the global strategies, the problem-solving strategies, and the online English proficiency.

Finally, the overall strategies used by the female students predicted not only their ability to read online, but also their online English proficiency. Among the male students, their overall strategy use was only able to predict their online reading abilities, not their online English proficiency. In the case of category use, only the global strategies had the potential to predict the self-rated online reading abilities and the online English proficiency. Among the male students, the global strategies could only predict their self-rated online reading abilities, but among the female students, they could predict both their self-rated online reading abilities and their online English proficiency.

From a pedagogical perspective, the existence of gender differences in the use of metacognitive reading strategies should be of particular concern to EFL teachers and program administrators. They should be able to figure out how their male and female students’ online reading strategies differ. Is it
necessary, for example, to provide more structured interventions for students in the application of metacognitive strategies in order to close the gender gap in EFL learning achievement?

7. Limitations of the study

The purpose of this study was to explore the employment of metacognitive online reading strategies among Indonesian EFL students in connection to online reading skills and English proficiency based on gender differences. Despite the fact that all research questions were answered, this study had several limitations. The first was related to the sample size, with more females than males taking part in this study. This might be due to the fact that in Indonesian higher education institutions the number of female students exceeds the number of male students. As the use of unequal sample sizes can affect the Type I error of the t-test, future studies in the same area should employ equal number of male and female samples to get better statistical power, especially when looking at gender differences.

Another limitation in this study was related to the instruments for data collection. The data collected through OSORS were self-reported by the respondents. One drawback of this self-report measure is that participants may not report what they actually do while they read, and the stated strategies are assumed to be continuous and independent (Pookcharoen, 2009). Participants may not have utilized every strategy they stated in every actual reading situation. Rather, what they utilize is mostly determined by what they are reading and the context in which they are reading. As a result, OSORS data should be evaluated with caution. It should be emphasized in future research in this area that in situations when observational techniques are employed with large sample sizes of students, observed and self-reported reading strategies are typically appropriate, albeit the quality of their application varies. Other drawback of using OSORS in this study was linked to factorial validity. Future study should not disregard this sort of analysis in order to determine if OSORS is a psychometrically sound tool for assessing metacognitive online reading strategies, because any findings drawn regarding this element of OSORS would be dubious without proof of factorial validity. Finally, the use of a self-assessment measure as a basis for distinguishing between the less skilled and the skilled readers in this research is another limitation that should be aware of. While a self-assessment measure can provide some information on students’ reading abilities and is, in some ways, valid, it should not be used as the sole basis for proving validity. As validity is such a nebulous term, future research will need to collect data from as many sources as possible.

Acknowledgements

Financial support for this study was provided in part by a grant from the Ministry of Education and Culture of the Republic of Indonesia. The author would like to thank all the English lecturers and staff in the English Education Department of the University of Borneo Tarakan for their assistance in the data collection process.

Funding

This work was supported by the Universitas Borneo Tarakan.

Author details

Agus Rianto.  
E-mail: agus_rianto@borneo.ac.id  
ORCID ID: http://orcid.org/0000-0001-9513-0032  
1 English Education Department, Universitas Borneo Tarakan, Tarakan, Indonesia.

Disclosure statement

The author declares no competing interests.

Citation information

Cite this article as: Examining gender differences in reading strategies, reading skills, and English proficiency of EFL University students, Agus Rianto, Cogent Education (2021), 8: 1993531.

References

Abbott, M. L. (2006). ESL reading strategies: Differences in Arabic and Mandarin speaker test performance. Language Learning, 56(4), 633–670. https://doi.org/10.1111/j.1467-9922.2006.00391.x

Ahmadion, M., & Posand, P. G. (2017). EFL learners’ use of online metacognitive reading strategies and its relation to their self-efficacy in reading. Reading Matrix: An International Online Journal, 17(2), 117–132.

Alami, M. (2016). Cross-gender comparison of metacognitive strategies utilized by Omani students in reading comprehension classes. International Journal of Applied Linguistics and English Literature, 5(4), 20–28. https://doi.org/10.7575/aiac.jirole.5n.17280

Alsofyan, A. H. (2019). “Examining EFL learners ’ reading comprehension : The impact of metacognitive strategies discussion and collaborative learning within multimedia E-Book dialogic environments.” [Unpublished Doctoral Dissertation]. University of South Florida.” University of South Florida. https://scholarcommons.usf.edu/etd/7729

Amini, D., Anhari, M. H., Ghasemzadeh, A., & Tarnopolsky, O. (2020). Modeling the relationship between metacognitive strategy awareness, self-regulation and reading proficiency of Iranian EFL learners. Cogent Education, 7(1), 1–17. https://doi.org/10.1080/2331186X.2020.1787018
Anderson, N. (2003). Scrolling, clicking, and reading English: Online reading strategies in a second language. The Reading Matrix, 3(3), 1–33.

Aradianisnil, 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

Aziz, Z. A., Nasir, C., & Ramazani, R. (2019). Applying metacognitive strategies in comprehending English reading texts. Celta. A Journal of English Language Teaching & Literature, 19(1), 138. https://doi.org/10.24167/ceelt.v19i1.1863

Azmuddin, R. A., Nor, N. F., & Hamat, A. (2017). Metacognitive online reading and navigational strategies by science and technology University students. GEMA Online Journal of Language Studies, 17(3), 1–36. https://doi.org/10.17576/gema-2017-1703-02

Berkvist, L. (2015). The role of metacognitive reading strategies, metacognitive study skills, 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

Cho, B.-Y., Afflerbach, P., & Han, H. (2018). Strategic processing in accessing, comprehending, and using multiple source online. In L. G. Jason, I. B. Braosch, & M. T. McCruden (Eds.), Handbook of multiple source use (pp. 133–150). Taylor and Francis. https://doi.org/10.4324/9781315627496

Cho, B.-Y., Woodward, L., Li, D., & Barlow, W. (2017). Examining adolescents’ strategic processing during online reading with a question-generating task. American Educational Research Journal, 54(4), 691–724. https://doi.org/10.3102/0002831217701694

Cohen, L., Manion, L., & Morrison, K. (2007). Research methods in education (6th ed). Routledge. https://doi.org/10.4324/978020329053-23

Cox-Magnó, N. (2018). "Metacognitive reading strategy and emerging reading comprehension in students with intellectual disabilities [Unpublished doctoral dissertation]. Walden University." Walden University. https://doi.org/10.15590/icerap.2018.08.11.4

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.2019.12459a

Darwich, I. (2017). "Meta cognitive strategy use: Off or on in online reading." In International conference on Literature, History, Humanities and Social Sciences (LHSS-17), 24–27. https://doi.org/10.15262/ieehm.ed10117029.

Deliony, Z., & Ceyhono, 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

Fitrisha, D., Tan, K.-E., Yusuf, Y. Q., & Nyak Arief, J. T. (2015). Investigating metacognitive awareness of reading strategies to strengthen students' performance in reading comprehension. Asia Pacific Journal of Educators and Education, 30(2004), 15–30

Fraenkel, J. R., Wallen, N. E., & Hyun, H. H. (2012). How to design and evaluate research in education. McGraw-Hill.

Gavora, P., Vaculikova, J., Kalenda, J., Kalmann, O., Gombos, P., Szigost, M., & Bontová, A. (2020). Comparing metacognitive reading strategies among University students from Poland, Hungary, Slovakia and the Czech Republic. Journal of Further and Higher Education, 44(7), 896–910. https://doi.org/10.1080/0309877X.2019.1614545

Giri, A., & Hasil, O. (2017). Metacognitive reading strategies in learning disability: Relations between usage level, academic self-efficacy and self-concept. International Electronic Journal of Elementary Education, 10(1), 93–102. https://doi.org/10.26822/ijeje.2017131890

Grabe, W. (2010). Fluency in reading — Thirty-Five years later. Reading in a Foreign Language, 22(1), 71–83.

Gusti, Y., Sari, J., & Ningsih, S. K. (2020). “An online reading strategies among EFL University students.” In The 2nd International conference and Innovation Exhibiti on Global Education (ICEGE), 192–198. Jakarta.

Hamad, A. A. (2019). “Saudi ESL/EFL learners’ metacognitive online reading strategies in Arabic and English [Unpublished doctoral dissertation].” The University of Memphis.

Hapari, (2019). An analysis on reading strategies based on metacognitive awareness and gender. LINGUA PEDAGOGIA (Journal of English Teaching Studies), 1(1), 58–68. https://doi.org/10.21831/linпед.v11.18399

Huang, H.-C. (2014). Online versus paper-based instruction: comparing two strategy training modules for improving reading comprehension. RELC Journal, 45(2), 165–180. https://doi.org/10.1177/0033688214534797

Huang, H.-C., Chern, C.-L., & Lin, C.-C. (2009). EFL learners’ use of online reading strategies and comprehension of texts: An exploratory study. Computers & Education, 52(1), 13–26. https://doi.org/10.1016/j.compedu.2008.06.003

Hudson, T. (2009). Teaching second language reading. TESL-EJ, 12(4), 1–3.

Ismail, N. (2016). “The use of metacognitive strategies among engineering students in reading academic texts [Unpublished doctoral dissertation], Universiti Teknologi Malaysia.” Universiti Teknologi Malaysia.

Kutluturk, S., & Yılmaz, H. (2017). Cognitive and metacognitive strategy training to enhance freshmen’s reading skills. International Journal of Language and Literature, 8(3), 3–15. https://doi.org/10.15640/iijll2015080302

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

Lee, H. Y., & List, A. (2019). Processing of texts and videos: A strategy-focused analysis. Journal of Computer Assisted Learning, 35(2), 268–282. https://doi.org/10.1111/jcol.12328

Maasum, T. N. R. T. M., & Maoroof, N. (2012). Empowering ESL readers with metacognitive reading strategies. Procedia - Social and Behavioral Sciences, 69 (Icepsy), 1250–1258. https://doi.org/10.1016/j.sbspro.2012.12.058

Marboot, K., Roohani, A., & Mirzae, A. (2020). Investigating Iranian EFL students’ metacognitive online reading strategies, critical thinking, and their relationship : A mixed-methods study. Issues in Language Teaching (ILT), 9(1), 151–182.

Miller, G. (2017). “Metacognitive awareness and reading strategy use : Investigating the intermediate level ESL students’ awareness of metacognitive reading strategies [Unpublished master thesis]. St. Cloud State University.” St. Cloud State University.
Mohseni, F., Seifi, Z., Ahangari, S., & Khajavi, Y. (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

Mohktari, K., & Sherey, R. (2002). Measuring ESL students’ awareness of reading strategies. Journal of Developmental Education, 25(3), 2–10.

Mukhlif, Z., & Amir, Z. (2017). Investigating the metacognitive online reading strategies employed by Iraqi EFL undergraduate students. Arab World English Journal, 8(1), 372–385. https://doi.org/10.24093/awej/vol8no1.26

Mulyono, H., Saska, R., & Pourhossein Gilakjani, A. (2021). Affective variables contributing to Indonesian EFL students’ willingness to communicate within face-to-face and digital environments. Cogent Education, 8(1), 1911282. https://doi.org/10.1080/2331186X.2021.1911282

Omar, N. A. (2014). Online metacognitive reading strategies use by postgraduate Libyan EFL students. Engineering and Technology International Journal of Social, Behavioral, Educational, Economic, Business and Industrial Engineering, 8(7), 2281–2284. https://doi.org/10.5281/zenodo.1093955

Oxford, R. L. (2011). Strategies for learning a second or foreign language research timeline. Language Teaching, 44(2), 167–180. https://doi.org/10.1017/S0261444810000492

Peart, S. M. (2017). L2 reading: Strategies and gender preferences in the foreign language classroom. Language y Textos, 45(45), 17–27. https://doi.org/10.4995/yt.2017.7437

Phakti, 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/10.1080/1543300701533596

Philip, B., & Martin Noel, N. (2017). Strategic processing of academic text : Identifying a strategic reader. Journal of Creative Practices in Language Learning and Teaching (CPLT), 5(2), 37–51.

Poocharoen, S. (2009). “Metacognitive online reading strategies among Thai EFL University students. graduate theses and dissertations.” Indiana University. https://search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2010-99151-068&site=ehost-live

Poole, A. (2005). Gender differences in reading strategy use among ESL college students. Journal of College Reading and Learning, 36(1), 7–21. https://doi.org/10.1080/10790195.2005.10850177

Poole, A. (2009). The reading strategies used by male and female Colombian University students. PROFILE, 11, 29–40.

Romk, N. F. M., Darus, S., & Bakor, 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/hplts.1.3.195-204

Roshadi-Ganj, E., Assadi, N., & Asl, H. D. (2020). Reading-metacognitive strategy awareness and use in reciprocal teaching settings: implementing a computerized RMSA system. Journal of Educational Computing Research, 58(7), 1342–1371. https://doi.org/10.1177/0735633120937437

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/10.24815/siele.v8i1.18110

Rostami Abuaseedi, A. A., & Khahid, M. (2017). EFL learners’ metacognitive reading strategies preferences in relation with their perfectionism regarding gender. Open Journal of Modern Linguistics, 7(2), 108–118. https://doi.org/10.4236/ojml.2017.72009

Service, E. T. (2017). Test taker handbook. The TOEFL R test taker handbook. ETS, NJ USA. https://www.ets.org/toefl_tpt/about

Sherey, R., & Mohktari, 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

Silk, F. W. P. V. D., Hout, R. W. N. M. V., & Schepens, J. J. (2015). The gender gap in second language acquisition : Gender differences in the acquisition of Dutch among immigrants from 88 Countries with 49 mother tongues. PLoS ONE, 10(11), 1–22. https://doi.org/10.1371/journal.pone.0142056

Takalou, F. (2011). The effect of metacognitive strategy instruction on EFL learners' reading comprehension performance and metacognitive awareness. Asian EFL Journal, 13(1), 272–300.

Toki, S., & Soleimani, G. H. (2012). Online reading strategy use and gender differences: The case of Iranian EFL learners. Mediterranean Journal of Social Sciences, 3(2), 173–184. https://doi.org/10.5901/mjss.2012.v3n2.173

Taraban, R. (2011). Engineering Curriculum : Analysis of students’ text-processing skills and beliefs. Journal OfEngineering Education, 100(2), 397–416.

Usman, B., Aziz, Z. A., & Abisdi, N. R. (2017). Improving Reading Comprehension Using MetacognitiveStrategies. English Education Journal (EEJ), 81(4), 425–438.

Wahyuni, Z., Ratmanndo, & Marliana, L. (2018). The relationship of students’ metacognitive reading strategies awareness and reading comprehension: The case of the sixth semester student of English department Universitas Negeri Padang (UNP). Journal of English Language Teaching Volume, 7(3), 401–413.

Wightman, M. 2020. “Gender differences in second language learning: Why they exist and what we can do about it.” University of Tennessee, Knoxville TRACE: https://trace.tennessee.edu/utk_chanhonoproj/2371

Wu, J. Y. (2014). Gender differences in online reading engagement, metacognitive strategies, navigation skills and reading literacy. Journal of Computer Assisted Learning, 30(3), 252–271. https://doi.org/10.1111/jclal.12054

Zenovitz, V. (2012). Awareness development for online reading. Language Awareness, 21(1–2), 85–100. https://doi.org/10.1080/09658416.2011.639893

Zhang, L., & Seepho, S. (2013). Metacognitive strategy use and academic reading achievement : Insights from a Chinese context. Electronic Journal of Foreign Language Teaching, 10(1), 54–69.

Zulalaha, S., Mulyono, H., & Ambarsari, L. (2020). An investigation into EFL teachers’ assessment literacy: Indonesian teachers’ perceptions and classroom practice. European Journal of Contemporary Education, 9(1), 189–201. https://doi.org/10.13187/ejced.2020.1.189
