

Taiwanese EFL learners' perceived use of online reading strategies

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Abstract

Reading strategies are beneficial to learners' reading comprehension. The strategies can be divided into different categories, such as global reading strategies, problem solving strategies and support strategies. Most previous studies investigated the importance of reading strategies in the paper-based reading. However, relatively few studies examined online reading strategies and their effects on reading comprehension. Online reading materials are important sources for EFL students since an increasing number of learners read texts and learn through the Internet. EFL learners in Taiwan, unfortunately, are reported to be overwhelmed with English online materials on the Internet. Therefore, this study intends to examine EFL learners' perceived use of online reading strategies and whether their perceived strategy uses are different in terms of proficiency levels and gender. There are 94 Taiwanese EFL learners (43% of them are males, n=40 and 57 % of them are females, n=54), who received the Online Survey of Reading Strategies (OSORS) adapted from Anderson (2003) in the study. The result showed that EFL online readers tend to use more global strategies, such as using contextual clues and observing tables, figures, and pictures in the on-line text to increase understanding. High level learners used more global and problem solving strategies than low level learners, which corresponds to previous studies. Additionally, there is no difference of strategy use between males and females. Several pedagogical implications, such as the need to raise students' awareness of strategy use, are addressed in the present study.

Keywords: online reading; L2 reading strategies; reading comprehension; gender differences; proficiency-level differences

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1. Introduction

Reading strategies are beneficial to learners' reading comprehension (Huang et al., 2009). The strategies can be divided into different categories, such as global reading strategies, problem solving strategies and support strategies. According to Sheorey and Mokhtari (2001), global reading strategies refer to intentional techniques by which learners monitor their reading, such as previewing the text for its organization. Problem solving strategies are localized techniques that readers use when problems form in understanding textual information, such as guessing the meaning of unknown words. Additionally, support strategies are seemed as using some supportive mechanisms, such as consulting an online dictionary. These reading strategies are commonly discussed in previous research. Readers utilize these strategies to help them improve their reading comprehension. Most previous studies investigated the importance of reading strategies in the paper-based reading (Bereiter and Bird, 1985; Singhal, 1999; Sporer et al., 2009; Mokhtari and Reichard, 2004; Sheorey and Mokhtari, 2001; Ikeda and Takeuchi, 2006; Spörer, Brunstein and Kieschke, 2009; Huang, 1999). However, relatively few studies examined online reading strategies and their effects on reading comprehension (Anderson, 2003; Foltz, 1993; Huang et al., 2009; Singhal, 1999). Online reading materials are important sources for EFL students since an increasing number of learners read texts and learn through the Internet. EFL learners in Taiwan, unfortunately, are reported to be overwhelmed with English online materials on the Internet (Chen, 2003). Online materials are usually composed of hypertext which is non-linear information, differing from traditional reading and resulting in difficulties for learners. The different feature of online materials compared to paper-based reading may also lead to different online reading strategy uses, which suggest that there is a need to conduct more research to further explore this issue. Moreover, most of previous studies discussed EFL learners' strategy use between learners in different levels but relatively little research investigates gender differences in online reading strategy use. This study intends to examine EFL learners' perceived use of online reading strategies and whether their perceived strategy uses are different in terms of proficiency levels and gender.

2. Literature Review

In this section, previous studies of reading strategy use will be discussed in terms of electronic literacies, paper-based second language reading strategies and online second language reading strategies.

2.1 Electronic literacies

As technologies have evolved, the nature of literacy is changing rapidly. The definition of literacy has expanded from traditional reading and writing to the ability of learning, comprehending and interaction with technology meaningfully in online reading (Pianfetti, 2001). Electronic literacies referring to screen-based literacies include understanding hypertext and multimedia information as well as evaluating online resources by using computers (Park and Kim, 2011). Online reading materials are usually composed of text information, hypertext or hypermedia. Hypertext and hypermedia can provide annotations for readers to know more related information about the online text. Hypertext refers to text with links which can provide additional information and also make readers read between different sections or pages.

(Warschauer, 1999). These links, or annotations, can allow readers to leave the primary material temporarily and then return after finishing the annotation (Nielsen, 1995). Additionally, the term hypermedia is hypertext with multiple forms of media, which can provide extra information in the form of pictures or videos. The most prominent feature of hypertext is its nonlinear organization of presenting the text (Akyel and Ercetin, 2009). Readers can choose their own pace when reading this online text either sequentially or non-sequentially, that is, learners' reading orders are unpredictable and unstable. (Patterson, 2000) Therefore, readers should know how to integrate the text information and non-text information in online reading (Coiro, 2005; Schmar-Dobler, 2003), which is more complex and also differs from the traditional reading process. The different reading process may result in different reading strategies in online reading environments, which will be discussed in the review of studies about online reading strategies.

2.2 Paper-based second language reading strategies

Most of the previous studies exploring reading strategies have focused on readers' use of pen- paper reading strategies rather than online reading strategies in reading comprehension. These studies discussed the effects of teaching reading strategies and the different use of reading strategies between EFL learners and native speakers when they read texts. Some research has suggested that when teachers conduct the training of reading strategies for learners in EFL classrooms, it can be effective to enhance learners' reading comprehension. For instance, according to Bereiter and Bird (1985), they found that the group who received the explicit instruction of reading strategies showed a significant gain in reading comprehension than the group without explicit instruction. In addition, Singhal (1999) observed that metacognitive strategy training is effective in enhancing second language reading and the effectiveness of strategy training depends upon the way reading is measured. Similarly, the students who received the intervention of training reading strategies gained higher scores on an experimenter-developed task of reading comprehension and strategy use than the control group (Sporer, Brunstein and Kieschke, 2009).

Other studies have investigated the similarities and differences of reading strategy use between native speakers and EFL learners or discussed EFL learners' individual differences towards reading strategy use. A few researchers indicated that EFL learners may use certain reading strategies more than native speakers. Mokhtari and Reichard (2004) stated that Moroccan students reported using certain types of strategies more often than their American counterparts did while Sheorey and Mokhtari (2001) found that both native and nonnative groups applied a similar number of reading strategies. In terms of learners' individual differences in reading strategies, many studies revealed the different use of strategies among learners from various proficiency levels. Ikeda and Takeuchi (2006) noticed that the differences between students in the high and low proficiency level are attributed to: (1) understanding the purpose of strategies; (2) effectively using strategies; and (3) knowing how to combine strategies. Additionally, high proficient readers tend to use global strategies while low proficient readers appeal to local strategies (Huang, 1999).

2.3 Online second language reading strategies

Although many studies discussed paper-based reading strategies, relatively few studies discussed online reading strategies. Readers have different mental processes when reading printed texts and online texts since readers need to integrate text, visual and non-textual information, including pictures, footnotes and links in online reading. In this way, they have more active engagement of reading in online texts, which leads to deeper processing of information (Patterson, 2000). When readers are involved in online reading, they not only interpret the writers' stances and viewpoints, but also integrate abundant materials by utilizing online strategies (Coiro, 2005; Schmar-Dobler, 2003), which indicates the important role of online reading strategies to help readers understand online texts.

Previous research explored online reading strategies in terms of different perspectives, such as comparing paper and online reading strategies, examining the relationship of online reading strategies and web-based learning and discussing the individual differences in strategy use. In terms of comparing online and paper-based reading strategies, readers may transfer their print-based reading strategies to hypertext reading but they will also need to use additional strategies in hypertext reading (Shapiro and Niederhauser, 2004; Schmar-Dobler, 2003). Similar results are also found in other studies. Foltz (1993), for example, compared the strategy use by learners when they read the text in the form of linear text and hypertext. He proved that readers use the similar numbers of strategies when reading these two types of texts but when they read the hypertext, they not only got involved in a reading process but also developed problem solving strategies when dealing with unfamiliar texts. Additionally, Park and Kim (2011) investigated ESL learners' use of online reading strategies from a sociocultural perspective and they observed that learners adopted their paper-based reading strategies in online reading, such as setting up reading purposes and previewing. At the same time, they also adjust their strategies and use new strategies for online reading materials, such as using hypermedia. Akyel and Ercetin (2009), similarly, indicated that hypertext readers applied similar reading strategies as paper-based reading but they used some other strategies, such as using navigation strategies or referring to annotations in their hypertext reading.

As for the relationship of online reading strategies and web-based learning, Singhal (1999) showed that online reading strategies have a positive effect on Web-based learning and reading comprehension. He investigated hypertext reading strategies among university students in a Web-based reading class and discovered that after Web-based reading instruction, students' reading comprehension made progress and their use of reading strategies increased as well. In Coiro's (2007) study, the finding also revealed that successful Internet reading experiences appeared to require complex applications of inferential reasoning strategies. Both studies suggested that online reading strategies play an important role in the success of web-based learning.

Some research discussed EFL learners' use of online reading strategies and whether individual differences will influence learners' strategy use. Amer, Barwani and Ibrahim (2010) examined whether there is a difference of online reading strategy use between Omani EFL university students in a high proficiency level and those in a low proficiency level. The result found that high proficient readers used more global strategies than low-proficient readers did, corresponding to Huang's study (1999). In addition, a few studies discussed the role of prior knowledge in learners' online

strategy use. Coiro and Dobler (2007) suggested that skilled readers usually referred to their prior knowledge of the topic and printed informational text structures to guide their online reading. Moreover, previous research asserted that low knowledge participants benefited more by following a high coherent reading order, whereas high-knowledge participants tended to read the hypertext in a low coherent order and read based on their interests (Salmerón, Cañas, Kintsch and Fajardo, 2005; Akyel and Ercetin, 2009). These studies revealed the important role of students' prior knowledge in exploring online reading strategies.

Some research discussed EFL learners' use of online reading strategies and whether individual differences will influence learners' strategy use. Amer, Barwani and Ibrahim (2010) examined whether there is a difference of online reading strategy use between Omani EFL university students in a high proficiency level and those in a low proficiency level. The result found that high proficient readers used more global strategies than low-proficient readers did, corresponding to Huang's study (1999). In addition, a few studies discussed the role of prior knowledge in learners' online strategy use. Coiro and Dobler (2007) suggested that skilled readers usually referred to their prior knowledge of the topic and printed informational text structures to guide their online reading. Moreover, previous research asserted that low knowledge participants benefited more by following a high coherent reading order, whereas high-knowledge participants tended to read the hypertext in a low coherent order and read based on their interests (Salmerón, Cañas, Kintsch and Fajardo, 2005; Akyel and Ercetin, 2009). These studies revealed the important role of students' prior knowledge in exploring online reading strategies.

Although previous studies discussed online reading strategies broadly from different perspectives, relatively few studies investigated Taiwanese EFL learners' perceived online reading strategies. Since EFL learners are reported to be overwhelmed with English online materials on the Internet (Chen, 2003) so their online reading strategy use would be our interest to further analyze. Additionally, a lot of previous research explored the different uses of online reading strategies between different proficiency levels but the factor of gender was seldom mentioned as well. Due to these issues, there is a need for us to further discuss EFL learners' perceived online reading strategies and the differences of strategy use between learners in different levels and genders. The following are the three research questions addressed in the present study:

1. What is the pattern of online reading strategy use by EFL learners?
2. Are there any differences of online reading strategy use between learners in the high proficiency level and low proficiency level?
3. Are there any differences of online reading strategy use between males and females?

3. Methodology

3.1 Participants

The subjects consisted of 94 EFL learners (43% of them are males, n=40 and 57 % of them are females, n=54) in the study. The average age was 22 years old, ranging from 19 to 26. Over half of them were undergraduate or graduate students (n=58) and the rest of them just graduated from universities (n=36). 72 learners have participated

TOEIC test before and their data were analyzed to see whether there was a difference of strategy use between learners in different proficiency levels.

3.2 Instrument

The Online Survey of Reading Strategies (OSORS) adapted from Anderson's (2003) study was used in the study. The OSORS measured three dimensions of reading strategies, including global strategies, problem solving strategies and support strategies. One support strategy, which refers to whether learners click on annotations when they read online English materials, was added in the present study because learners tend to use additional strategies when reading online materials and clicking on hyperlinks or annotations would be one of these additional strategies. Anderson (2003) demonstrated the reliability of items in OSORS, proposing that the Cronbach's alpha for the overall OSORS was .92. There were 37 items in the survey, containing 16 items as global strategies, 11 items as problem solving strategies and 10 items as support strategies. Each statement in OSORS could be responded by the 5-point Likert Scale, ranging from 1 (never or almost never use this strategy) to 5 (always or almost always use this strategy).

3.3 Procedure

The researcher collected data by online Google questionnaires. The link of questionnaire was posted on the college social networks and also sent through instant messages and emails. The data of participants above 26 years old would be eliminated since the focus of the participants in the present study were mainly college or graduate students. Then the mean scores of the items would be calculated and the paired t-test would be conducted to observe whether there is a significant difference of strategy use regarding proficiency differences and gender differences.

4. Results

4.1 The top ten and the bottom ten frequently used online reading strategies

Among the top ten most frequently used online reading strategies, half of them were global strategies, three of them were problem solving strategies and two of them were support strategies, as shown in Table 1. Although it seemed that learners seldom used support strategies compared to other two kinds of strategies, the most frequently used strategy was using an online dictionary to help readers understand online texts, which is a support strategy. It was not surprising that EFL learners most frequently looked up an online dictionary when they read online reading materials since previous L2 research showed that vocabulary is perceived to be the most difficult task among EFL learners (Cheng, 1998; Chi & Chern, 1988) so it was no wonder that EFL learners tended to look up new words when they encountered difficulties.

Table 1: *Mean scores of top ten frequently used online reading strategies*

| The top ten frequently used online reading strategies | | Mean scores |
|---|---|-------------|
| 14. | I use reference materials (e.g. an on-line dictionary) to help me understand what I read on-line. (<i>Support strategy</i>) | 4.03 |
| 19. | I use context clues to help me better understand what I am reading on-line. (<i>Global strategy</i>) | 3.99 |
| 10. | I try to get back on track when I lose concentration. (<i>Problem solving strategy</i>) | 3.90 |
| 29. | When I read on-line, I guess the meaning of unknown words or phrases. (<i>Problem solving strategy</i>) | 3.88 |
| 17. | I use tables, figures, and pictures in the on-line text to increase my understanding. (<i>Global strategy</i>) | 3.80 |
| 25. | I try to guess what the content of the on-line text is about when I read. (<i>Global strategy</i>) | 3.78 |
| 20. | I paraphrase (restate ideas in my own words) to better understand what I read on-line. (<i>Support strategy</i>) | 3.78 |
| 26. | When on-line text becomes difficult, I re-read it to increase my understanding. (<i>Problem solving strategy</i>) | 3.68 |
| 4. | I think about what I know to help me understand what I read on-line. (<i>Global strategy</i>) | 3.66 |
| 31. | I scan the on-line text to get a basic idea of whether it will serve my purposes before choosing to read it. (<i>Global strategy</i>) | 3.64 |

As for the bottom ten online reading strategies used by learners, three of them were global strategies, three of them were problem solving strategies and six of them were support strategies, as shown in Table 2. Most of the infrequently used online reading strategies were support strategies so EFL learners seldom used support strategies except for consulting an online dictionary as mentioned before. This corresponds to Anderson's (2003) study which indicated that the least frequently used online reading strategies were support strategies. The least frequently used online reading strategy was participating in live chat with other learners of English, which is a global strategy. The reason why learners seldom live chatted with other learners may be because they tended to focus on the understanding of the online English materials instead of social interaction with other readers.

Table 2: Mean scores of bottom ten online reading strategies used by learners

| The bottom ten online reading strategies | | Mean scores |
|--|--|-------------|
| 1. | I have a purpose in mind when I read on line. (<i>Global strategy</i>) | 3.16 |
| 21. | I try to picture or visualize information to help remember what I read on-line. (<i>Problem solving strategy</i>) | 3.15 |
| 33. | I critically evaluate the on-line text before choosing to use information I read on-line. (<i>Problem solving strategy</i>) | 3.05 |
| 22. | I critically analyze and evaluate the information presented in the on-line text. (<i>Global strategy</i>) | 2.94 |
| 35. | When reading on-line, I look for sites that cover both sides of an issue. (<i>Problem solving strategy</i>) | 2.67 |
| 27. | I ask myself questions I like to have answered in the on-line text. (<i>Support strategy</i>) | 2.65 |
| 36. | When reading on-line, I translate from English into my native language. (<i>Support strategy</i>) | 2.63 |
| 3. | I take notes while reading on-line to help me understand what I read. (<i>Support strategy</i>) | 2.44 |
| 11. | I print out a hard copy of the on-line text then underline or circle information to help me remember it. (<i>Support strategy</i>) | 2.37 |
| 2. | I participate in live chat with other learners of English. (<i>Global strategy</i>) | 1.96 |

4.2 Online reading strategy use in terms of different proficiency levels

The responses of 72 EFL learners who have participated TOEIC test were analyzed in this section. They were divided into the high and low proficiency level based on their scores of TOEIC. Learners who got over 700 scores were considered as higher level learners and those who got scores below 700 were seemed as lower proficiency learners. In this way, 55 of them were learners of the high level and 17 of them were in the low level. The result is shown in Table 3.

Table 3: *Differences between high level students and low level students*

| | Group | N | Mean | SD | T | P |
|--------------------------|------------|----|------|------|-------|------|
| Global strategy | High level | 55 | 3.66 | .495 | 7.520 | .000 |
| | Low level | 17 | 3.11 | .491 | | |
| Problem solving strategy | High level | 55 | 3.67 | .418 | 5.479 | .000 |
| | Low level | 17 | 3.11 | .345 | | |
| Support strategy | High level | 55 | 3.28 | .666 | 2.010 | .075 |
| | Low level | 17 | 3.07 | .659 | | |
| Total | High level | 55 | 3.56 | .54 | 8.132 | .000 |
| | Low level | 17 | 3.10 | .49 | | |

As presented in Table 3, there was a significant difference of total strategy use between high level students and low level students ($p=.000$). High level students tended to use more online reading strategies than low level students, which can be expected. Also, the high proficiency group employed more global strategies than the low proficiency group and there was a significant difference between their mean scores of global strategies ($p=.000$). This finding was also found in the previous L2 research indicating that high proficiency learners conducted more global strategies than low proficiency learners (Huang, 1999; Mokhtari & Reichard, 2002; Shen, 2003). As for problem solving strategies, the similar result as global strategies was found. The high proficiency group used more problem solving strategies than the low proficiency group and there was also a significant difference between their means of problem solving strategies ($p=.000$). However, there was no significant difference of support strategies between the means of support strategies in high level learners and low level learners ($p=.075$). Both groups used relatively fewer support strategies than global and problem solving strategies.

4.3 Online reading strategy use in terms of gender difference

There were 40 males and 54 females in the present study. The result indicated that there was no significant difference of total strategy use between the male and female group. In addition, there was no significant difference of each category of strategy use (global, problem solving and support strategies) between the male group and female group as well. This suggested that males and females used the similar online reading strategies when they read online materials. The finding corresponds to previous studies, such as Amer, Barwani & Ibrahim's (2010) study which investigated student teachers online reading strategy use and found that there was no significant difference in terms of gender.

Table 4: *Differences between males and females*

| | Group | N | Mean | SD | T | P |
|--------------------------|--------|----|------|------|--------|------|
| Global strategy | male | 40 | 3.36 | .456 | 1.823 | .088 |
| | female | 54 | 3.44 | .487 | | |
| Problem solving strategy | male | 40 | 3.43 | .360 | -.245 | .811 |
| | female | 54 | 3.45 | .404 | | |
| Support strategy | male | 40 | 3.16 | .538 | -.187 | .856 |
| | female | 54 | 3.17 | .645 | | |
| Total | male | 40 | 3.33 | .454 | -1.262 | .215 |
| | female | 54 | 3.37 | .513 | | |

However, if we look at the individual strategy use in detail, it is suggested that females are more active strategy user than males because more strategies used by females reached high frequency. As shown in Table 5, the strategies with high frequency in females were more than those in males. For example, the mean scores of top three frequently used strategies for females reached 4 points, which means “I usually use this strategy” in the Likert scale. This indicated that females usually used references, contextual cues and the strategy of guessing unknown words when they read English online reading materials. Nevertheless, in terms of males’ strategy use, none of the strategies’ mean scores reached 4 points.

Table 5: *Top ten frequently used strategies by males and females*

| Male | Mean | Female | Mean |
|---|------|---|------|
| 10. I try to get back on track when I lose concentration. (<i>Problem solving strategy</i>) | 3.93 | 14. I use reference materials (e.g. an on-line dictionary) to help me understand what I read on-line. (<i>Support strategy</i>) | 4.11 |
| 14. I use reference materials (e.g. an on-line dictionary) to help me understand what I read on-line. (<i>Support strategy</i>) | 3.93 | 19. I use context clues to help me better understand what I am reading on-line. (<i>Global strategy</i>) | 4.09 |
| 19. I use context clues to help me better understand what I am reading on-line. (<i>Global strategy</i>) | 3.85 | 29. When I read on-line, I guess the meaning of unknown words or phrases. (<i>Problem solving strategy</i>) | 4.04 |
| 25. I try to guess what the content of the on-line text is about when I read. (<i>Global strategy</i>) | 3.78 | 10. I try to get back on track when I lose concentration. (<i>Problem solving strategy</i>) | 3.89 |
| 8. I read slowly and carefully to make sure I understand what I am reading on-line. (<i>Problem solving strategy</i>) | 3.73 | 17. I use tables, figures, and pictures in the on-line text to increase my understanding. (<i>Global strategy</i>) | 3.87 |

| | | | |
|---|------|---|------|
| 24. I check my understanding when I come across new information. (<i>Global strategy</i>) | 3.73 | 20. I paraphrase (restate ideas in my own words) to better understand what I read on-line. (<i>Support strategy</i>) | 3.85 |
| 17. I use tables, figures, and pictures in the on-line text to increase my understanding. (<i>Global strategy</i>) | 3.70 | 25. I try to guess what the content of the on-line text is about when I read. (<i>Global strategy</i>) | 3.78 |
| 20. I paraphrase (restate ideas in my own words) to better understand what I read on-line. (<i>Support strategy</i>) | 3.68 | 26. When on-line text becomes difficult, I re-read it to increase my understanding. (<i>Problem solving strategy</i>) | 3.78 |
| 29. When I read on-line, I guess the meaning of unknown words or phrases. (<i>Problem solving strategy</i>) | 3.68 | 4. I think about what I know to help me understand what I read on-line. (<i>Global strategy</i>) | 3.72 |
| 31. I scan the on-line text to get a basic idea of whether it will serve my purposes before choosing to read it. (<i>Global strategy</i>) | 3.63 | 13. When reading on-line, I decide what to read closely and what to ignore. (<i>Global strategy</i>) | 3.65 |

5. Discussion

The present study shows that EFL online readers tend to use more global strategies when they read online texts, which is different from previous studies showing that EFL learners use more problem solving strategies (Amer, Barwani & Ibrahim's, 2010; Anderson, 2003). The possible explanation is that there are more high proficiency learners in this study and high level students tended to use more global strategies than low level students (Huang, 1999), which may lead to more global strategy use in the present study. Additionally, the result shows that there is a significant difference between high and low level learners, which is also found in previous research (Huang, 1999; Mokhtari & Reichard, 2002; Shen, 2003). High level learners used more global and problem solving strategies than low level learners but both groups employ the similar numbers of support strategies. The possible interpretation of why the two group using similar support strategies is that many support strategies are related to EFL learners' first language, including looking up an online English-Chinese dictionary and using L1 paraphrases. Most EFL learners are accustomed to resort to their L1 as a meaning making process when they are reading or writing (Freedman et al., 1983; Kobayashi and Rinnert, 1992), which might explain the uses of support strategies between high and low level groups do not differ. The other finding is that there is no significant difference between males and females but females seem to use certain strategies with high frequency, which is also presented in Amer, Barwani & Ibrahim's (2010) research. This study demonstrates several findings which confirm the results in previous research and also increase our understanding of Taiwanese EFL learners' online reading strategy use.

6. Pedagogical Implications and Future Studies

The present study raises some implications for reading instruction. First, since the result of the present study indicates that high proficiency learners tend to use more

global strategies to increase their reading comprehension, it seems that global strategies are more efficient than the other two strategies. (Akyel, A., & Erçetin, G., 2009). Teachers should therefore explicitly teach students global strategies in their reading processes in EFL classrooms, such as using context clues, predicting the content of the text, reading purposefully. For instance, teachers can design some activities to ask students to predict what will happen in the content of the text, ask them to skim the text to grasp the main idea of the text or ask them some questions before they begin to read so that they can scan the answers for the questions when they are reading. Additionally, teachers should pay attention to how to help students spontaneously utilize those reading strategies when they read online English materials by raising their awareness of reading strategy use through training before they are immersed in online reading materials.

However, there are some limitations of the present study. First, the numbers of high proficiency learners and low proficiency learners are not equal so future studies should have equal participants of learners in different levels so that the result will be more valid. In addition, this study only investigates learners' perceived strategies, which may differ from their actual use of online reading strategies so future researchers can compare whether there is a difference between learners' perceived strategy use and actual strategy use in order to provide more insight of EFL learners' strategy use.

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