



An Examination of Offline And Online Reading Strategies in EFL Contexts

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Received: 08-04-2014

Accepted: 16-05-2014

Published: 01-09-2014

doi:10.7575/aiac.ijalel.v.3n.5p.189

URL: <http://dx.doi.org/10.7575/aiac.ijalel.v.3n.5p.189>

Abstract

With the increasing use of the internet for reading texts, the habit of reading has been greatly influenced. More and more readers are choosing to read online rather than reading paper texts. In a pedagogical context, some research suggest that an increased number of second language (L2) classrooms are engaging learners through online reading tasks. This paper aims to examine the differences between offline (paper) reading and online (computer-assisted language learning) reading strategies as used by English as foreign language (EFL) readers in higher education in Taiwan. A total of 43 third-year English major university students participated in this study. Tentative findings revealed that students' reading scores were influenced by their reading strategies and that students' gender differences also played a minor role in the strategies approaches that were taken. The result shows that there's a need not only for explicit reading instruction in offline reading practices but also during the online reading that takes place in the EFL reading class.

Keywords: Reading, Strategy, Online reading context, Hypertext, Survey of Reading Strategies

1. Introduction

This paper is initially inspired by a paper written by Anderson (2003), in which he suggests to have made a study that gathered reading strategy data from the same readers in both online reading contexts and in paper reading contexts. Hence, this provisional study aims to examine the differences between offline (paper) reading and online (screen) reading strategies used by English as foreign language (EFL) readers in higher education in Taiwan.

In the simplest of terms, reading is a complex method of drawing information from some form of text and then interpreting it. Readers can choose a variety of skills and strategies depending on the purpose for reading and create their own overall reading comprehension depending on language proficiency (Grabe & Stoller, 2002). Reading for general comprehension involves skills that represent linguistic abilities (e.g. word recognition, syntactic processing, etc.) (Anderson, 1995) and defines strategies implemented by readers. Although the definitional boundaries of skills and strategies are imprecise because of the nature of reading tasks, strategies may be seen as "skills under consideration" (Paris, Wasik, & Turner, 1991, p. 611). This study will utilize the definition of reading strategies provided by Grabe and Stoller (2002), "Strategies for definitional purposes, are best defined as abilities that are potentially open to conscious reflection and use" (p. 17). This research conceptualizes the reading process along the lines of Alderson's (2000) view that reading is divided into two components of decoding (word recognition) and comprehension in the discursive domain.

Today, the interaction of reader and reading material is a constant mix of print technology on paper and electronic technology on screens. From the onset, it should be understood that using one kind of technology does not preclude readers from understanding another (Jabr, 2013). As such, the process of reading is more or less the same dependent on format or substrate, while the strategization may remain on how and why to read remains variable.

The ability to read is an essential cognitive skill in all academic disciplines (Amer, Barwanti, & Ibrahim, 2010; Lei, Rhinehart, Howard, & Cho, 2010; White, 2004). Harmer (2007) claims that "Reading is useful for language acquisition" (p. 99). To assist students to deal with encountered academic texts, reading skills and strategies are first taught on the basis of simple texts and then practiced on authentic reading material. However, the proliferation and availability of internet resources exposes students not only to conventional text of printed matter, but it also to electronic, on-line texts. Second Language readers must be able to navigate through various textual forms and actively

engage an individualized learning environment to create meaning both inside and outside the classroom setting. Student-readers require improved skills in academic reading to accommodate both conventional and electronic texts which are so much a part of fundamental academic reading skills and strategies as well as critical literacy skills. Recent developments in the theorizing more complex, non-linear models of reading have exposed that the parallel distribution processing (PDP) processes using both online and conventional texts require further examination (Erler, & Finkbeiner, 2007).

It has been hypothesized at the outset of the present study that in the EFL academic reading class, second-language male and female readers make selectively different choices in their offline and online strategies. Selective choices are predicated on the perceived notion of online security, anonymity, and constant access to supportive search capabilities not always located in the reading classroom (Taki, S., & Soleimani, G. H., 2012). Simulated reading conditions outside the physical boundaries of the classroom may serve to ease students' transition from learned reading strategies to authentic reading skills (Levine, A., Ferenz, O., & Reves, T., 2000). It has also been hypothesized that highly successful, moderately successful and unsuccessful readers possess different approaches to their offline and online reading strategies use.

The following research questions were posed at the outset of the study:

1. What are the offline (paper) reading strategies chosen for use by second language male and female readers?
2. What are the online reading strategies chosen for use by second language male and female readers?
3. How do highly successful, moderately successful and unsuccessful readers differ in their use of both offline and online reading strategies?

1.1 Theoretical perspectives

Due to the relative importance of reading placed in every academic discipline, a great number of studies have been carried out to investigate the effects of reading strategies on readers' comprehension (Block, 1986; He, 2008; Hosenfeld, 1977; Hogan, Bridges, Justice, & Cain, 2011; Kletzine, 2009; Park, 2012; Prado, & Plourde, 2011; Taboada, & Rutherford, 2011; Yang, 2006). Research evidence has indicated that strategy instruction is extremely important for helping learners to comprehend the reading text. Anderson (2008) suggested that "[instructors] should help learners not only to understand *how* to use the strategy but to understand *why it is used* and *how to evaluate* success in the use of the strategy" (p. 64). Hence, in order to help learners become better readers, certain reading strategies should be taught explicitly. Apart from a positive report of adopting reading strategies, some studies have also pointed out that although students are aware of reading strategies, they may not know how to apply those strategies, and their use does not always result in successful reading comprehension (Anderson, 2008; Prado, & Plourde, 2011; Yang, 2006).

Among various reading strategies, metacognitive strategies have attracted much attention from educators and researchers (e.g. Anderson, 2003; Kramarski, B., & Feldman, Y., 2000; Phakiti 2003; Sheory, R., & Mokhtari, K., 2001). The most basic notion of metacognition can be defined as thinking about thinking. Phakiti (2003) stated that "[m]eta-cognition involves active monitoring and consequent regulation and orchestration of cognitive process to achieve cognitive goals" (p. 29). Anderson (2003) proposed five primary components of metacognition: "(1) preparing and planning for effect reading, (2) deciding when to use particular reading strategies, (3) knowing how to monitor reading strategy use, (4) learning how to orchestrate various reading strategies, and (5) evaluating reading strategy use" (p. 10). A significant research on the identification of metacognitive reading strategies of L2 learners was conducted by Sheorey and Mokhtari in 2001. In the study, they designed the *Survey of Reading Strategies* (SORS) to measure the metacognitive reading strategies of L2 readers engaged in reading academic materials. After the study, they reported that "skilled readers . . . are more able to reflect on and monitor their cognitive processes while reading. They are aware not only of which strategies to use, but they also tend to be better at regulating the use of such strategies while reading" (p. 445).

With the advance of communicative technologies, reading on the internet has becoming a popular trend useful in literacy learning. Leu, McVerry, O'Byrne, Kiili, Zawilinski, Ecerett-Cacopardo, Kennedy, & Forzani (2011) pointed out that "the meaning of literacy rapidly and continuously changes as new technologies for information and communication continuously appear online and new social practices of literacy quickly emerge" (p.6). Due to the increasing opportunities for reading content online, recent literature has stressed the importance of how educators should think about reading comprehension as it is influenced by technologies (e.g. Coiro, 2003, 2009, 2011, 2012). It has been suggested that instructors should not "assume a simple transfer of L2 reading skills and strategies from the hardcopy environment to the online environment" (Anderson, 2003, p. 5) will readily take place.

Throughout the proliferation of internet access in the language classroom, some studies have tried to investigate the overall effects of online reading comprehension on learners. Results showed that, with proper online reading instruction, most learners are able to make significant improvement with online reading comprehension and to hold a more positive attitude towards reading hypertext (Ariew, & Ercetin, 2004; Coiro, 2009; Gegner, J., Macky, D., & Mayer, R., 2009; Kramarski, & Feldman, 2000; Hamilton, 2009; McCrudden, M. T., Madliano, J. P., & Schraw, G., 2011; Park, 2012; Yang, & Hung, 2009). However, the research evidence also indicated that within the Internet reading environment, EFL readers are just as easily frustrated when they cannot locate the immediate answers they seek as when they are reading from printed materials (Coiro, 2003; Dyson, & Haselgrove, 2000; Schmar-Dobler, 2003).

Anderson (2003) conducted some of the first research to examine the role of second language strategies within the context of online reading tasks. Two research questions were addressed in the study: (1) What are the online reading strategies used by second language readers?; and, (2) Do the online reading strategies of English as second language readers (ESL) differ from English as foreign language readers (EFL)? The results of the study specified the importance of adopting metacognitive online reading strategies for second language learners since they played a crucial role to assist learners to comprehend the text and to increase learners' reading ability.

2. Methods

This study was conducted during spring semester, 2011 in a class where the participants were from a private university in southern Taiwan. There were 43 junior students in this study that were drawn from a convenient sample (15 male and 28 female). They were from the Department of Applied English and were taking a course listed as *Reading and Writing* and, classroom instruction lasted three hours per week for a period of 18 weeks. The aim of the course was to introduce various offline reading (Online reading was neither introduced/ emphasized nor was it practiced in class.) and writing skills and strategies. Any distinction between online and offline reading strategies remained unspecified.

In order to investigate differences in Taiwanese university students' English reading between offline (paper) reading and online reading strategies, two survey instruments (the Survey of Reading Strategies administered by Sheorey and Mokhtariin 2001, and the On-line Survey of Reading Strategies administered by Anderson in 2003) and one standardized English reading test were used. The Survey of Reading Strategies (SORS) adopted for the present study consists of 30 item-questions based on a five point summated Likert-type response, ranging from *never* to *always*. The modified On-line Survey of Reading Strategies (OSORS) was a 38 item-questionnaire based on a five point summated Likert-type response, ranging from *never* to *always*. The SORS showed an internal consistency coefficient of .82 (Cronbach's alpha, $n=30$); the Cronbach's alpha for the overall OSORS was .84 ($n=38$).

The reading test conducted for the present study was employed to identify the level of participants' English reading proficiency. The sample reading test was taken from the *Cambridge English: Preliminary test*, also known as *Preliminary English Test (PET)*. The students' scores were converted and calculated to fit the purpose of this study. The mean score of the test is 66.7 (lowest score is 35 and highest is 94). To be specific, students who scored between 77 to 94 are considered to be highly successful readers ($N=13$, $M=83.54$), those scoring between 57 to 74 are considered as moderately successful readers ($N=19$, $M=65.53$), and those scoring between 35 to 55 are considered as unsuccessful readers ($N=11$, $M=48.82$).

3. Data Analysis and Discussion

Three research questions are explored in the study. 1. What are the offline (paper) reading strategies chosen for use by second language male and female readers? 2. What are the online reading strategies chosen for use by second language male and female readers? 3. How do highly successful, moderately successful and unsuccessful readers differ in their use of both offline and online reading strategies?

3.1 Answer to the first research question

The first research question in this study is posed to investigate the offline (paper) reading strategies used by second language male and female readers. To this end, the SORS survey was adopted. The survey consisted of 34 items that measure offline reading strategies. The SORS items are subdivided into three specified categories: global reading strategies (GLOB, 13 items), problem solving strategies (PROB, 8 items), and support reading strategies (SUP, 9 items). Table 1 shows the results of the mean scores and standard deviation.

Table 1. The offline reading strategies used by second language readers

Strategies	Gender	<i>N</i>	<i>Mean</i>	<i>SD</i>	<i>t</i>	<i>p</i>
GLOB	Male	15	3.80	.42	1.912	.063
	Female	28	3.57	.37		
	Both	43	3.65	.39		
PROB	Male	15	4.09	.64	.586	.561
	Female	28	4.00	.43		
	Both	43	4.03	.51		
SUP	Male	15	3.56	.56	-.038	.969
	Female	28	3.59	.46		
	Both	43	3.59	.49		

Table 1 indicates that no statistical significant difference is shown between the means of male and female students regarding offline reading strategies use. Yet, as with both genders, the means on global reading strategies is 3.65 (male is 3.80 and female is 3.57); the means on problem solving strategies is 4.03 (male is 4.09 and female is 4.00); and, the means on support reading strategies is 3.59 (male is 3.56 and female is 3.59). This indicates that the students use more

problem-solving reading strategies than of the other two strategies when performing offline reading. It is assumed that the reason for students' general use of problem solving strategies might be an effect from reading tests they normally take in class. It is interesting to note that male readers use a set of slightly more globalized and problem-solving reading strategies than female readers. It may also be noted that female readers employed slightly more supportive reading strategies than their male peers.

To be more specific, the top and bottom 10 offline reading strategies utilized by both genders are compared in the following tables 2 and 3 respectively.

Table 2. Top 10 offline reading strategies between male and female students

Male		Female	
1.	Strategy 7: I read slowly and carefully to make sure I understand what I am reading. (PROB)	(M) 4.53	1. Strategy 10: I underline or circle information in the text to help me remember it. (SUP) 4.46
2.	Strategy 10: I underline or circle information in the text to help me remember it. (SUP)	4.47	2. Strategy 25: When text becomes difficult, I re-read it to increase my understanding. (PROB) 4.43
3.	Strategy 14: When text becomes difficult, I pay closer attention to what I am reading. (PROB)	4.33	3. Strategy 9: I try to get back on track when I lose concentration. (PROB) 4.36
4.	Strategy 9: I try to get back on track when I lose concentration. (PROB)	4.27	4. Strategy 14: When text becomes difficult, I pay closer attention to what I am reading. (PROB) 4.25
5.	Strategy 24: I try to guess what the content of the text is about when I read. (GLOB)	4.20	5. Strategy 24: I try to guess what the content of the text is about when I read. (GLOB) 4.21
6.	Strategy 29: When reading, I translate from English into my native language. (SUP)	4.13	6. Strategy 28: When I read, I guess the meaning of unknown words or phrases. (PROB) 4.07
7.	Strategy 17: I use context clues to help me better understand what I am reading. (GLOB)	4.07	7. Strategy 23: I check my understanding when I come across new information. (GLOB) 4.04
8.	Strategy 25: When text becomes difficult, I re-read it to increase my understanding. (PROB)	4.07	8. Strategy 7: I read slowly and carefully to make sure I understand what I am reading. (PROB) 4.00
9.	Strategy 28: When I read, I guess the meaning of unknown words or phrases. (PROB)	4.07	9. Strategy 22: I go back and forth in the text to find relationships among ideas in it. (SUP) 4.00
10.	Strategy 30: When reading, I think about information in both English and my mother tongue. (SUP)	4.07	10. Strategy 10: I underline or circle information in the text to help me remember it. (SUP) 3.89
Average Mean		4.22	4.17

Note: GLOB = global reading strategies, PROB = problem solving strategies, SUP= support reading strategies

As presented in Table 2, there are seven overlapping strategies used by both genders, but in differ in orderings. It is also surprising to note that both male and female students chose five problem solving reading strategies, three support reading strategies, and two global reading strategies correspondingly. Although the average mean scores for both genders have only slight difference, male and female students do employ diverse reading strategies. For instance, male students in this study indicate that the primary and secondary strategies they chose are those that involve reading slowly and carefully to make sure they understand what they are reading, and they underline or circle information in the text to help them remember it respectively. By contrast, female students show that the primary and secondary strategies they prefer are to understand what they are reading and then to underline or circle information in the text to help them remember it. When the given text becomes difficult, they will re-read it to increase their overall understanding.

Table 3. Bottom 10 offline reading strategies between male and female students

Male		Female	
1.	Strategy 26: I ask myself questions I like to have answered in the text. (SUP)	(M) 2.67	1. Strategy 6: I think about whether the content of the text fits my reading purpose. (GLOB) (M) 3.00
2.	Strategy 2: I take notes while reading to help me understand what I read. (SUP)	3.00	2. Strategy 5: When text becomes difficult, I read aloud to help me understand what I read. (SUP) 3.07
3.	Strategy 5: When text becomes difficult, I read aloud to help me understand what I read. (SUP)	3.13	3. Strategy 18: I paraphrase (restate ideas in my own words) to better understand what I read. (SUP) 3.18
4.	Strategy18: I paraphrase (restate ideas in my own words) to better understand what I read. (SUP)	3.20	4. Strategy 20: I use typographical features like bold face and italics to identify key information. (GLOB) 3.25
5.	Strategy21: I critically analyze and evaluate the information presented in the text. (GLOB)	3.20	5. Strategy 21: I critically analyze and evaluate the information presented in the text. (GLOB) 3.25
6.	Strategy 8: I review the text first by noting its characteristics like length and organization. (GLOB)	3.40	6. Strategy 26: I ask myself questions I like to have answered in the text. (SUP) 3.25
7.	Strategy 12: When reading, I decide what to read closely and what to ignore. (GLOB)	3.40	7. Strategy 2: I take notes while reading to help me understand what I read. (SUP) 3.29
8.	Strategy 27: I check to see if my guesses about the text are right or wrong. (GLOB)	3.60	8. Strategy 12: When reading, I decide what to read closely and what to ignore. (GLOB) 3.32
9.	Strategy 19: I try to picture or visualize information to help remember what I read. (PROB)	3.67	9. Strategy 8: I review the text first by noting its characteristics like length and organization. (GLOB) 3.36
10.	Strategy 22: I go back and forth in the text to find relationships among ideas in it. (SUP)	3.67	10. Strategy 1: I have a purpose in mind when I read. (GLOB) 3.43
Average Mean		3.29	3.24

Note: GLOB = global reading strategies, PROB = problem solving strategies, SUP= support reading strategies

The bottom 10 offline reading strategies between male and female students presented in Table 3 reveals that the least chosen reading strategies males students use are support reading strategies (five out of ten), global reading strategies (four out of ten), and problem solving reading strategies (one out of ten). Comparatively, female students choose global reading strategies (six out of ten), support reading strategies (four out of ten), and none for problem solving reading strategies. Although there are seven overlapping strategies least applied by either gender, male and female students do have dissimilar preferences. For example, male students least use Strategy 26 which is termed “I ask myself questions I like to have answered in the text” (support reading strategy); and, female students least utilize Strategy 6 which is termed “I think about whether the content of the text fits my reading purpose” (global reading strategy).

3.2 Answer to the second research question

The second research question in this study is to investigate the online reading strategies used by second language male and female readers. To answer the second research question the OSORS survey was adopted. The survey consisted 38 items that measure online reading strategies. The OSORS items are subdivided into three categories: global reading strategies (GLOB, 18 items), problem solving strategies (PORB, 11 items), and support reading strategies (SUP, 9 items). Table 4 illustrates the results of the mean score and standard deviation.

Table 4. The online reading strategies used by second language readers

Strategies	Gender	N	Mean	SD	t	p
GLOB	Male	15	3.63	.44	1.912	.063
	Female	28	3.52	.34		
	Both	43	3.64	.41		
PROB	Male	15	3.79	.44	.586	.561
	Female	28	3.78	.30		
	Both	43	3.82	.22		
SUP	Male	15	3.47	.53	-.038	.969
	Female	28	3.54	.58		
	Both	43	3.53	.35		

Although online reading strategies were purposely not introduced in class, participants in this study still apply various metacognitive strategies when engaged in reading online ($M= 3.62$). Statistical results presented in Table 4 reveals that no statistical significant difference between the means of male students and female students on offline reading strategies. Yet, both genders, the means for online reading strategies for global reading strategies for is 3.64 (male is 3.63 and female is 3.52); the means on problem solving strategies is 3.82 (male is 3.79 and female is 3.78); the means on support reading strategies is 3.52 (male is 3.47 and female is 3.54). This also demonstrates that the students use more problem solving reading strategies more than the other two strategies. Similar to offline reading, male readers use a slightly more global and problem reading strategies than female readers. Yet, female readers utilize a bit more support reading strategies than male students.

To be more precise, the top and bottom online reading strategies employed by both genders are listed in the following tables 5 and 6, respectively.

Table 5. Top 10 online reading strategies between male and female students

Male	Female
1. Strategy 16: When on-line text becomes difficult, I pay closer attention to what I am reading. (PROB) <i>(M)</i>	1. Strategy 11: I try to get back on track when I lose concentration. (PROB) <i>(M)</i>
4.19	4.19
2. Strategy 28: When on-line text becomes difficult, I re-read it to increase my understanding. (PROB)	2. Strategy 26: I check my understanding when I come across new information. (GLOB)
4.19	4.19
3. Strategy 9: I read slowly and carefully to make sure I understand what I am reading on-line. (PROB)	3. Strategy 27: I try to guess what the content of the on-line text is about when I read. (GLOB)
4.13	4.15
4. Strategy 11: I try to get back on track when I lose concentration. (PROB)	4. Strategy 9: I read slowly and carefully to make sure I understand what I am reading on-line. (PROB)
4.13	4.11
5. Strategy 20: I use context clues to help me better understand what I am reading on-line. (GLOB)	5. Strategy 15: I use reference materials (e.g. an on-line dictionary) to help me understand what I read on-line. (SUP)
4.13	4.11
6. Strategy 31: When I read on-line, I guess the meaning of unknown words or phrases. (PROB)	6. Strategy 28: When on-line text becomes difficult, I re-read it to increase my understanding. (PROB)
4.06	4.07
7. Strategy 27: I try to guess what the content of the on-line text is about when I read. (GLOB)	7. Strategy 13: I adjust my reading speed according to what I am reading on-line. (PROB)
4.00	4.00
8. Strategy 30: I check to see if my guesses about the on-line text are right or wrong. (GLOB)	8. Strategy 31: When I read on-line, I guess the meaning of unknown words or phrases. (PROB)
3.94	3.96
9. Strategy 5: I think about what I know to help me understand what I read on-line. (GLOB)	9. Strategy 25: I go back and forth in the on-line text to find relationships among ideas in it. (SUP)
3.88	3.93
10. Strategy 26: I check my understanding when I come across new information. (GLOB)	10. Strategy 38: When reading on-line, I think about information in both English and my mother tongue. (SUP)
3.88	3.93
Average Mean	4.05
	4.06

Note: GLOB = global reading strategies, PROB = problem solving strategies, SUP= support reading strategies

Data shown in Table 5 indicate that male students tend to favor using problem solving (five out of ten) and global reading strategies (five out of ten), yet none for supporting reading strategies. Contrastively, female students seem to prefer using problem solving (five out of ten), global reading strategies (two out of ten), and support reading strategies (three out of ten). Though the mean scores for the top 10 online reading strategies between male and female students are rather similar, they do have different preferences when it comes to reading in English.

Table 6. Bottom 10 online reading strategies between male and female students

Male		Female		
1.	Strategy 3: I participate in live chat with native speakers of English. (GLOB)	2.56	1. Strategy 3: I participate in live chat with native speakers of English. (GLOB)	2.59
2.	Strategy 29: I ask myself questions I like to have answered in the on-line text. (SUP)	3.00	2. Strategy 2: I participate in live chat with other learners of English. (GLOB)	2.78
3.	Strategy 34: I critically evaluate the on-line text before choosing to use information I read on-line. (PROB)	3.00	3. Strategy 4: I take notes while reading on-line to help me understand what I read. (SUP)	2.85
4.	Strategy 7: When on-line text becomes difficult, I read aloud to help me understand what I read. (SUP)	3.06	4. Strategy 34: I critically evaluate the on-line text before choosing to use information I read on-line. (PROB)	3.04
5.	Strategy 21: I paraphrase (restate ideas in my own words) to better understand what I read on-line. (SUP)	3.13	5. Strategy 29: I ask myself questions I like to have answered in the on-line text. (SUP)	3.07
6.	Strategy 2: I participate in live chat with other learners of English. (GLOB)	3.19	6. Strategy 36: When reading on-line, I look for sites that cover both sides of an issue. (PROB)	3.11
7.	Strategy 4: I take notes while reading on-line to help me understand what I read. (SUP)	3.19	7. Strategy 17: I read pages on the Internet for academic purposes. (GLOB)	3.15
8.	Strategy 10: I review the on-line text first by noting its characteristics like length and organization. (GLOB)	3.31	8. Strategy 7: When on-line text becomes difficult, I read aloud to help me understand what I read. (SUP)	3.19
9.	Strategy 22: I try to picture or visualize information to help remember what I read on-line. (PROB)	3.31	9. Strategy 8: I think about whether the content of the on-line text fits my reading purpose. (GLOB)	3.22
10.	Strategy 23: I use typographical features like bold face and italics to identify key information. (GLOB)	3.31	10. Strategy 24: I critically analyze and evaluate the information presented in the on-line text. (GLOB)	3.22
<i>Average Mean</i>		3.11	3.02	

Note: GLOB = global reading strategies, PROB = problem solving strategies, SUP= support reading strategies

The bottom 10 online reading strategies reported between male and female students illustrated in Table 6 shows both male and female students consider participating in live chat with native speakers of English less. This may due to the fact that they have not built up their confidence to chat with foreigners in English.

3.3 Answer to the third research question

The third research question needs to be addressed in this study is posed to explore how highly successful, moderately successful and unsuccessful readers differ in their use of their offline and online reading strategies. To distinguish students' reading ability, the *Cambridge English: Preliminary* test (PET) was used. The result of the test indicated the highest score as 94 and the lowest as 35. Students who scored between 77 and 94 are considered as highly successful readers ($N= 13$); students who scored between 57 and 74 are defined as moderately successful readers ($N= 19$); students who scored between 35 and 55 are regarded as unsuccessful readers ($N= 11$).

Table 7. The reading strategies used among highly successful, moderately successful and unsuccessful readers

Strategies	Readers	<i>Mean</i>		<i>SD</i>	
		Offline	Online	Offline	Online
GLOB	highly	3.63	3.53	.46	.34
	moderately	3.60	3.53	.38	.40
	unsuccessful	3.76	3.64	.35	.41
PROB	highly	4.15	3.92	.57	.31
	moderately	3.94	3.67	.54	.42
	unsuccessful	4.02	3.82	.39	.22
SUP	highly	3.68	3.32	.34	.62
	moderately	3.53	3.64	.60	.60
	unsuccessful	3.60	3.53	.45	.35

Note: "Off" means offline reading, "On" means online reading

As shown in Table 7, apart from the mean scores of online support reading strategies ($M= 3.64$) which is a little higher than offline support reading strategies ($M= 3.53$) between the moderately successful readers, all other means on global reading strategies and problem solving strategies indicate that offline reading is somewhat higher than online reading. This can be interpreted to be that those student participants in this study use more different offline reading strategies online ones no matter what reading level they belong to. It is assumed that students in the study are more used to offline reading than online reading activities, especially since online reading skills are not emphasized during the course.

The results of analyzing reading strategies used among highly successful, moderately successful and unsuccessful readers indicate that the top one offline and online reading strategies among those highly successful readers are Strategy 14: "When text becomes difficult, I pay closer attention to what I am reading" and Strategy 31: "When I read on-line, I guess the meaning of unknown words or phrases". Moderately successful readers opt for Strategy 10: "I underline or circle information in the text to help me remember it" and Strategy 25: "I go back and forth in the on-line text to find relationships among ideas in it". Unsuccessful readers use Strategy 10: "I underline or circle information in the text to help me remember it" and Strategy 28: "When on-line text becomes difficult, I re-read it to increase my understanding". In this research we enhance our perceptive of significant difference among diverse readers' metacognitive reading strategies.

4. Conclusions

The majority of readers today use online sources for text. The smooth transition from paper to screen is often taken for granted. The reading strategies that people, particularly students, choose do not always reflect the difference that would apply in the new medium. How and why students invent and innovate those new reading strategies is an area of research needing further exploration. Unlike the other papers which make comparisons either between paper and paper reading strategies or online and online reading strategies), this study aims to examine the differences between offline (paper) reading and online reading strategies used by English as foreign language (EFL) readers in higher education in Taiwan. The study uses gender and students' reading scores as two main factors and the results revealed that both factors had significant influenced on students' choice of meta-cognitive reading strategies.

The following conclusions can be drawn with reference to the research questions:

1. Participants in this study employed numerous reading strategies among these three categories for the average mean of 3.5 and above. This average mean score is highly significant compared with the previous studies reviewed in literature.
2. Both the offline (paper) reading strategies and the online (Internet-based) reading strategies chosen for use by second language male and female readers included a variety of metacognitive reading strategies, especially the problem solving strategies. Although it is assumed that the educational and testing system might be part of the cause, this in turn may suggest that a further study to probe more deeply into the issue concerning why and how Taiwan EFL learners greatly use problem solving strategies rather than global and supportive reading strategies is needed. More importantly, this research has increased our understanding of another potential distinction between male and female readers.
3. Highly successful, moderately successful and unsuccessful readers differ in their use of both offline and online reading strategies in numerous ways. Successful strategy selection by lower English proficiency students can identify their reading problems; manipulate texts to highlight problematic sections and apply both close and global reading skills. Middle-level proficiency students are prepared to identify and acquire higher-level critical reading skills. Students at a higher level of reading proficiency may proceed at a self-selected pace, focus on major content aspects, draw and test desired inferences, monitor personal progress and critically evaluate their own reading progress.
4. Online reading activity enables and encourages students to take initiative and to assume responsibility for their own strategy use, to make sense of the texts they read and to create meaning from what they have read. The findings revealed in the study should justify further large-scale research addressing the issue of adequately differentiating computer-assisted academic reading instruction methods from the more conventional reading found on the printed page.

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