SCROLLING, CLICKING, AND READING ENGLISH: ONLINE READING STRATEGIES IN A SECOND/FOREIGN LANGUAGE

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Abstract

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In spite of the importance of reading, strategy use, and technology, no research to date has reported on the online reading strategies of L2 readers. Two research questions are explored in this paper. (1) What are the online reading strategies used by second language readers? (2) Do the online reading strategies of English as a second language readers (ESL) differ from English as a foreign language readers (EFL)?

Participants in this study consisted of 247 L2 readers. One hundred thirty-one (53%) of the learners were studying English as a foreign language at the Centro Cultural Costarricense Norteamericano (CCCN) in San José, Costa Rica. The remaining 116 (47%) were studying in an ESL environment at the English Language Center (ELC) at Brigham Young University, in Provo, Utah.

The *Survey Of Reading Strategies* (SORS) (Sheorey and Mokhtari, 2001) was adapted for use in this research project. The adapted Online SORS (OSORS) consists of 38 items that measure metacognitive reading strategies. The items are subdivided into three categories: global reading strategies (18 items), problem solving strategies (11 items), and support strategies (9 items).

The results have important implications for L2 teachers to address in the classroom with L2 readers.

INTRODUCTION

Reading is an essential skill for learners of English. For most of learners it is the most important skill to master in order to ensure success in learning. With strengthened reading skills, learners of English tend to make greater progress in other areas of language learning. Reading should be an active, fluent process that involves the reader and the reading material in building meaning. Often, however, it is not. The average learner's second language reading ability is usually well below that of the first language. This can impede academic progress in the second language. English language teachers and learners face many challenges in the classroom. Teaching students how to utilize the skills and knowledge they bring from their first language, develop vocabulary skills, improve reading comprehension and rate, and monitor their own improvement are just some of the elements that teachers must consider in preparing for an English-language reading class. For the student, learning to read in a second or foreign language is a process that involves learning skills, learning new vocabulary and collocative patterns, and cultivating the ability to transfer these skills from the classroom to the real world, where English may be used.

Computers and the Internet play an increasingly important role in the lives of L2 readers around the world. Online reading serves as the source of input for thousands of L2 readers. Leu (2002) points out that "the Internet has entered our

classrooms faster than books, television, computers, the telephone, or any other technology for information and communication" (p. 311). With the increased use of computers comes the increased need to train language learners how to read online. Coiro (2003) stresses that "electronic texts introduce new supports as well as new challenges that can have a great impact on an individual's ability to comprehend what he or she reads." More and more L2 classrooms are engaging learners in online learning tasks (Bikowski & Kessler, 2002; Dudeney, 2000; Iaonnou-Georgiou, 2002; Sutherland-Smith, 2002; Warschauer, 1997, 1999, 2002).

Perceptive second/foreign language (L2) readers are those who are aware of and use appropriate strategies for learning and communicating in an L2. The purpose of strategy use is to improve performance in the use of ones' L2. Strategies are the *conscious* actions that learners take to improve their language learning. Strategies may be observable, such as observing someone take notes during an academic lecture and then comparing the lecture notes with a chapter in a textbook in order to understand and remember information better, or they may be mental, such as thinking about what one already knows on a topic before reading a passage in a textbook. Because strategies are conscious, there is active involvement of the L2 learner in their selection and use. Strategies are not an isolated action, but rather a process of orchestrating more than one action to accomplish an L2 task. Although we can identify individual strategies, rarely will one strategy be used in isolation. Strategies are related to each other and must be viewed as a process and not as a single action.

The seventh annual International Reading Association survey of key topics in reading research and practice for 2003 includes ESL reading as a hot topic (Cassidy & Cassidy, 2003). Perhaps of even more importance is that the judges rated this as a topic that should be hotter. Also included on the list of hot research topics for 2003 was technology. There is an increased interest in L2 reading research and how technology influences reading in various parts of the world.

The purpose of this paper is to examine the role of L2 strategies within the context of online reading tasks. To date, no research has targeted the identification of online reading strategies of L2 learners.

REVIEW OF LITERATURE

Use of Computers and Language Learning

Teachers in many parts of the world want to be able to expose learners to authentic language on the topics they are learning about in the language classroom. The Internet has become a very useful tool for accomplishing that purpose. Coiro (2003) outlines three types of texts that readers encounter online: nonlinear texts, multiple-media texts, and interactive texts. Each of these text types introduces new challenges for readers, especially second language readers. Leu (2002) brings to our attention the role of new literacies. He says, "the new literacies include the skills, strategies, and insights necessary to successfully exploit the rapidly changing information and communication technologies that continuously emerge in our world" (p. 313). He also points out

"any realistic analysis of what we know about the new literacies from the traditional research literature must recognize that we actually know very little" (p. 317). In order for the Internet tasks to be successful, teachers need to be aware of the online reading strategies that L2 learners use. We cannot assume a simple transfer of L2 reading skills and strategies from the hardcopy environment to the online environment. Also, Leu (2002) strongly suggests "the reading community needs to play a central role in [the] conversation [of new literacies], a role that has yet to be filled adequately. Our work must begin to focus on how these new technologies are changing reading" (p. 330).

In a recent posting on the Materials Writers Sub-list of TESL-L, Maggie Sokolik stated: "Are we teaching students, within the context of published materials, how to deal with [the] new realities [of reading online]? It doesn't seem so. Instead, there is a push to create a lot of supplementary quizzes and evaluation tools, which completely under-uses the power that is possible with interactivity" (posted online, February 21, 2003). Sokolik raises a very important point. How are we training language learners to use the Internet as a tool for increasing language learning and knowledge?

Understanding the mental processes involved in online reading tasks is an under investigated area. Rather than focusing students' attention only on issues related to reading content, effective teachers can structure a learning atmosphere where thinking about what happens during online reading will lead to stronger learning skills.

The Importance of Language Learning Strategies

Since the mid-1970s, close attention has been given to the role of strategies in L2 learning (Anderson, 1991; Cohen, 1990, 1998; Hosenfeld, 1979; Macaro, 2001; Naiman, Fröhlich, & Todesco, 1975; O'Malley & Chamot, 1990; Oxford, 1990, 1993, 2002; Rubin, 1975; Stern, 1975; Wenden, 1991, 2002; Wong-Fillmore, 1979). One consistent finding this research has been that learners actively use strategies to accomplish their language learning goals.

Recent research by Dörnyei and Skehan (in press) points out that in spite of the three and one-half decades of research, "learner differences, such as aptitude, style, and strategies, as a sub-area of second language acquisition, and applied linguistics more generally, have not been integrated into other areas of investigation, and have not excited much theoretical or practical interest in recent years" (p. 1). On area in which strategy research has not been integrated into other areas of investigation is the work related to online reading. Researchers have done very little to explore the reading strategies that learners use while engaged in online reading tasks.

Strategy Identification

Language learning strategies have been classified into seven major categories: cognitive strategies, metacognitive strategies, mnemonic or memory related strategies, compensatory strategies, affective strategies, social strategies, and self-motivating strategies. Oxford (1990, 2001b) refers to the first six of these categories, while other researchers (Chamot, O'Malley, 1990; Chamot, Barnhardt, El-Dinary, & Robbins, 1999; Cohen, 1996; Weaver & Cohen,

1997a) use a fewer number. Work by Dörnyei (2001) focuses on self-motivating strategies.

A recent research article provides empirical data into how best to classify language learning strategies. Hsiao and Oxford (2002) compared classification theories of language learning strategies. Fifteen strategy classifications were developed and tested based on classification systems proposed by Oxford (1990), Rubin (1981) and O'Malley & Chamot (1990). The research findings support the classification of L2 learning strategies into six distinct categories: cognitive strategies, metacognitive strategies, memory strategies, compensatory strategies, affective strategies, and social strategies. These six categories correspond to Oxford's six dimensions of strategy classification for the Strategy Inventory for Language Learning (SILL). The SILL is perhaps the most frequently used inventory for collecting research data on L2 strategies. But there are new instruments that are being developed that deserve our attention.

L2 Reading Strategy Research

Sheorey and Mokhtari (2001) and Mokhtari and Sheorey (2002) are conducting significant research on the identification of metacognitive reading strategies of L2 learners. They have developed a new instrument named the *Survey Of Reading Strategies* (SORS) designed to measure the metacognitive reading strategies of L2 readers engaged in reading academic materials. One of the first studies published that used the SORS reports on the strategies of 152 native English speaking students and 152 ESL students. The focus of the study

was to examine the differences in reading strategy usage between native speakers and non-native speakers of English. They asked three primary research questions: (1) Are there any differences between ESL and US students in their perceived strategy use while reading academic materials? (2) Are there any differences between male and female ESL and US students, respectively, in their perceived strategy use while reading academic materials? And (3) Is there a relationship between reported strategy use and self-rated reading ability?

Results show that the ESL students reported a higher use of strategies than the US students. The ESL students reported using a greater number of support reading strategies, which should not be surprising. We would expect learners of English to need more support strategies. As an entire group no significant differences were reported between the male and female readers in this study. However, there was one significant difference in the use of the strategy of underlining information in the text for ESL learners. The female ESL students reported using the strategy more frequently than the male ESL students. Finally, students who had a higher self-reported rating of reading ability reported using a higher frequency of reading strategies than those readers who gave themselves a lower rating. Sheorey and Mokhtari (2001) report 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). This research contributes a great deal to our understanding of the reading strategies of L2 readers.

Anderson (1991) highlights that "strategic reading is not only a matter of knowing what strategy to use, but also the reader must know how to use a strategy successfully and orchestrate its use with other strategies. It is not sufficient to know about strategies; a reader must also be able to apply them strategically" (pp. 468-469). Additional research on reading strategies can be found in the work of Block (1986, 1992), Carrell, Pharis, and Liberto (1989), Janzen (1996), Knight, Padron, and Waxman (1985), and Song (1998).

Metacognitive Strategy Research

McDonough (1999) asks a provocative question of whether there is a hierarchy of strategies for language learning. Of the various categories of strategies identified through strategy research, does any one category play a more significant role than the others? I hypothesize that the metacognitive strategies play a more significant role because once a learner understands how to regulate his/her own learning through the use of strategies, language acquisition should proceed at a faster rate.

Vandergrift (2002) emphasizes the essential role of metacognitive strategies. "Metacognitive strategies are crucial because they oversee, regulate, or direct the language learning task, and involve thinking about the learning process" (p. 559). O'Malley and Chamot (1990) strengthen the importance of the role of metacognitive strategies when they state that "students without metacognitive approaches are essentially learners without direction or opportunity to plan their learning, monitor their progress, or review their

accomplishments and future learning directions" (p. 8). Learners need to be metacognitively aware of what they are doing. They need to connect their strategies for learning while engaged in an online learning task with their purpose for being online. This awareness results in strong metacognitive strategies.

Metacognition can be defined simply as thinking about thinking (Anderson, 2002). It is the ability to make your thinking visible. It is the ability to reflect on what you know and do and what you do not know and do not do. Metacognition results in critical but healthy reflection and evaluation of your thinking that may result in making specific changes in how you learn. Metacognition is not simply thinking back on an event, describing what happened and how you felt about it.

Metacognition can be divided into five primary components: (1) *preparing* and *planning* for effective 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. Metacognition is not any one of the five elements in isolation. Each of these five metacognitive skills interacts with each other. Metacognition is not a linear process moving from preparing and planning to evaluating. More than one metacognitive process may be happening at a time during a learning task. It is the blending of all five into a kaleidoscopic view that may be the most accurate representation of metacognition.

The Role of Strategy Instruction

L2 learners need to learn how to use effective reading strategies to achieve their desired goals. Researchers have suggested that teaching readers how to use strategies be a prime consideration in the reading classroom (Anderson & Vandergrift, 1996; Chamot, Barnhardt, El-Dinary, & Robbins, 1999; Janzen, 2001; Weaver & Cohen, 1997a, 1997b). Nunan (1996, 1997) provides a good rationale for integrating explicit instruction of language learning strategies into the classroom curriculum. "[L]anguage classrooms should have a dual focus, not only teaching language content but also on developing learning processes as well" (Nunan, 1996, p. 41). The primary purpose of instruction is to raise learners' awareness of strategies and then allow each to select appropriate strategies to accomplish their learning goals.

Janzen (2001) states that in order to improve reading, teachers should embed the following five features in the course syllabus: (1) explicit discussion of what reading strategies are, along with where, when, and how to use them; (2) teacher modeling of strategic reading behavior; (3) students reading and thinking aloud while practicing targeted strategies; (4) classroom discussion; and (5) adoption of a sustained area of content for the course (p. 369). The first four of these five features are essential for success in developing strategic readers. In addition, the reader should understand how to apply a given strategy to other readings, and how to apply it in combination with other strategies. For this reason, Janzen's fifth point is important. L2 readers need opportunities to read

sustained content within the classroom. The sustained content allows for multiple opportunities to practice the strategies that are being taught. Metacognitive awareness of the reading process is one of the most important skills second language teachers can teach learners about reading.

This extensive research base on strategies, and especially metacognitive strategies, is lacking when we move into examining what L2 learners do while reading online. This paper is a first step in exploring what metacognitive strategies L2 learners' use while reading online.

ESL Versus EFL Reading Strategies

Research on reading and reading strategies remains somewhat weak as researchers examine possible differences between learners' reading strategies in ESL versus EFL instructional settings. An ESL instructional environment is defined as one in which English is used in the society in which the language is being studied. Learners studying in Australia, Canada, England, New Zealand and the United States are in an ESL environment. An EFL environment is one where English is not the primary language of the society in which the language is being studies. Learners studying English in Brazil, Costa Rica, Japan, or Korea are in an EFL environment.

Riley & Harsch (1999) are some of the few researchers examining how the learning environment may influence strategy use. They outline a research project to compare the strategy use of Japanese learners of English in ESL and EFL environments. They used two tools to gather data for their research project:

a modified version of Oxford's Strategy Inventory for Language Learning and a strategy journal. The modified SILL allowed the researchers to measure the learners' perceptions of the importance of strategy use. The journal served as a tool to explore learner awareness, development, and use of language learning strategies as well as what effect guided reflection has on the development of language learning strategies.

Their findings support that learners in an ESL environment use more strategies than learners in an EFL environment. They suggest four reasons to support this finding: (1) ESL learners are "more motivated and active in their learning," (2) they have "more opportunities to use the target language and therefore have a greater need to use" strategies, (3) because of the instructional environment, ESL learners are "more aware of strategy use," and (4) "learners stay in an English-speaking environment" (Riley & Harsch, 1999, pp. 4-5). One interesting difference between the ESL and EFL learners in this study indicated that the ESL learners rated metacognitive strategies higher than did the EFL learners.

Riley and Harsch (1999) emphasize that "[t]eachers need to recognize that for EFL and ESL learners in particular, the environment can play an important part when learning another language" (p. 14). This statement suggests that based on this single study of differences between learning environments, more research is needed.

Research Questions

Two research questions are explored in this paper. (1) What are the online reading strategies used by second language readers? (2) Do the online reading strategies of English as a foreign language (EFL) readers differ from English as a second language (ESL) readers?

METHOD

Participants

Participants in this study consisted of 247 L2 readers. One hundred thirty-one (53%) of the learners were studying English as a foreign language at the Centro Cultural Costarricense Norteamericano (CCCN) in San José, Costa Rica. The remaining 116 (47%) were studying in an ESL environment at the English Language Center (ELC) at Brigham Young University, in Provo, Utah. Fifty-one percent of the participants were female and 49% were male. The learners ranged in L2 proficiency from high beginning to high intermediate.

Materials

The *Survey Of Reading Strategies* (SORS) (Sheorey and Mokhtari, 2001) was adapted for use in this research project. The SORS focuses on metacognitive strategy use within the context of academic reading. Developed by Mokhtari (2001) for post-secondary students who are native and non-native speakers of English. The SORS was based on a separate metacognitive reading strategy survey developed for native speakers on English, the Metacognitive-Awareness-of-Reading-Strategies Inventory (MARSI). The SORS measures

three categories of reading strategies: global reading strategies (13 items),
problem solving strategies (8 items), and support strategies (9 items). Mokhtari
and Sheorey report reliability for the MARSI but not for the SORS. Reported
MARSI reliabilities are: Metacognitive, 0.92, Cognitive, 0.79, Support strategies,
0.87, and Overall, 0.93.

The adaptation was named the Online Survey Of Reading Strategies
(OSORS) to distinguish it from the SORS (see Appendix A). A total of 38 items
are included on this OSORS. The same three categories were maintained global
reading strategies (18 items; an additional 5 items were added), problem solving
strategies (11 items; an additional 3 items were added), and support strategies
(the original 9 items were maintained). Each item was modified to include the
phrase "online" each time a reading task was referred to.

Procedure

Participants at both the CCCN and the ELC completed the OSORS during
class time in the language laboratory at their respective schools. Teachers
engaged the participants in various online reading tasks during the class time
(activities that they had planned themselves and not something provided by the
researcher). During the final 10 minutes of their class time in the lab, participants
took the survey online. Part 1 of the OSORS consists of a background
questionnaire and required consent from each subject to participate in the survey
allowing the researcher to use the results while preserving subject anonymity.
The background questionnaire required approximately 5 minutes to complete.
After completing the background questionnaire, subjects were instructed to

respond to the 38 items on the OSORS regarding their online reading strategies while reading school-related, academic materials in English. The OSORS required approximately 15 minutes to complete.

RESULTS

Reliability of the OSORS

The Cronbach's alpha for the overall OSORS was .92. The reported reliabilities for each subsection are Global Reading Strategies, .77; Problem Solving Strategies, .64; and Support Strategies, .69. These data help to establish that the OSORS is a reliable instrument for assessing the metacognitive online reading strategies of L2 reading strategies.

Answer to the First Research Question

The first research question in this research project was directed towards identifying the online reading strategies used by second language readers. Table 1 illustrates the top 12 and the bottom 12 online reading strategies as identified in the OSORS.

Top Twelve Reading Strategies	Bottom Twelve Reading Strategies
1. **Strategy 11:** I try to get back on track when I lose concentration. (Problem Solving)	27. **Strategy 38:** When reading on-line, I think about information in both English and my mother tongue. (Support)
2. **Strategy 28:** When on-line text becomes difficult, I re-read it to increase my understanding. (Problem Solving)	28. **Strategy 19:** I stop from time to time and think about what I am reading on-line. (Problem Solving)
3. **Strategy 16:** When on-line text becomes difficult, I pay closer attention to what I am reading. (Problem Solving)	29. **Strategy 10:** I review the on-line text first by noting its characteristics like length and organization. (Global)
4. **Strategy 9:** I read slowly and carefully to make sure I understand what I am reading on-line. (Problem Solving)	30. **Strategy 29:** I ask myself questions I like to have answered in the on-line text. (Support)
5. **Strategy 31:** When I read on-line, I	31. **Strategy 15:** I use reference

guess the meaning of unknown words or phrases. (Problem Solving)	materials (e.g. an on-line dictionary) to help me understand what I read on-line. (Support)
6. **Strategy 27:** I try to guess what the content of the on-line text is about when I read. (Global)	32. **Strategy 23:** I use typographical features like bold face and italics to identify key information. (Global)
7. **Strategy 5:** I think about what I know to help me understand what I read on-line. (Global)	33. **Strategy 7:** When on-line text becomes difficult, I read aloud to help me understand what I read. (Support)
8. **Strategy 35:** I can distinguish between fact and opinion in on-line texts. (Problem Solving)	34. **Strategy 12:** I print out a hard copy of the on-line text then underline or circle information to help me remember it. (Support)
9. **Strategy 22:** I try to picture or visualize information to help remember what I read on-line. (Problem Solving)	35. **Strategy 37:** When reading on-line, I translate from English into my native language. (Support)
10. **Strategy 14:** When reading on-line, I decide what to read closely and what to ignore. (Global)	36. **Strategy 4:** I take notes while reading on-line to help me understand what I read. (Support)
11. **Strategy 13:** I adjust my reading speed according to what I am reading on-line. (Problem Solving)	37. **Strategy 3:** I participate in live chat with native speakers of English. (Global)
12. **Strategy 32:** I scan the on-line text to get a basic idea of whether it will serve my purposes before choosing to read it. (Global)	38. **Strategy 2:** I participate in live chat with other learners of English. (Global)

Table 1. Top 12 and Bottom 12 Metacognitive Strategies

Note that eight of the top 12 strategies (67%) are Problem Solving Strategies. Recall that there are a total of 11 Problem Solving Strategies of the 38 strategies on the OSORS. Also note that seven of the bottom 12 strategies (58%) are Support Reading Strategies. The OSORS included nine Support Reading Strategies.

Answer to the Second Research Question

The second research question focused on identifying whether the online reading strategies of English as a foreign language (EFL) readers differ from those reported by the English as a second language (ESL) readers. The results of the ANOVA show that for the overall OSORS, there are no significant

differences between the EFL and the ESL groups. Table 2 contains the results of

the overall OSORS ANOVA.

Source	DF	SS	MS	F	p
Overall	1	270	270	.54	ns
Error	245	121477	496		
Total	246	121747			

Table 2. ANOVA Between EFL and ESL Readers on Overall OSORS

Tables 3-5 contain the results of the ANOVAs for the three subsections of

the OSORS. The only significant differences between the EFL and the ESL

readers appear for the use of Problem Solving strategies. The EFL group

reported a higher use of Problem Solving strategies than did the ESL group (EFL

X = 39.527, sd 6.978; ESL X = 37.250, sd 7572). Recall that there are 11 items

on the OSORS that elicit information on the use of Problem Solving strategies.

On five of these 11 items the online readers in the EFL group reported higher use

of the strategy than did the online readers in the ESL group. Table 6 reports on

these five strategies.

Source	DF	SS	MS	F	p
Overall	1	104	104	.79	ns
Error	245	31995	131		
Total	246	32099			

Table 3. ANOVA Between EFL and ESL Readers on Global Strategies

Source	DF	SS	MS	F	p
Overall	1	318.9	318.9	6.05	.015
Error	245	12924.4	52.8		
Total	246	13243.3			

Table 4. ANOVA Between EFL and ESL Readers on Problem Solving Strategies

Source	DF	SS	MS	F	p
Overall	1	76.7	76.7	.161	ns
Error	245	9490.0	38.7		
Total	246	9566.7			

Table 5. ANOVA Between EFL and ESL Readers on Support Strategies

Item	EFL Average	ESL Average	p
9. I read slowly and carefully to make sure I understand what I am reading on-line.	3.9465	3.3965	.0001
11. I try to get back on track when I lose concentration.	4.1145	3.6810	.0017
13. I adjust my reading speed according to what I am reading on-line.	3.595	3.215	.0096
19. I stop from time to time and think about what I am reading on-line.	3.145	2.7586	.0067
28. When on-line text becomes difficult, I re-read it to increase my understanding.	4.0992	3.6982	.0018

Table 6. EFL vs. ESL Differences on Problem Solving Items

DISCUSSION

The results of this current research continue to add to our understanding of how strategies are used by L2 readers, especially within the context of reading online. This is the first study of online strategy use of L2 readers. Additionally, in this research we increase our understanding of potential differences between EFL and ESL readers. When the OSORS is used to gather data from 247 readers in Costa Rica and the United States, the only differences appear to be in Problem Solving Strategies.

The online reading strategies, as revealed through the OSORS, indicate a variety of strategies that the learners reported using while reading academic

materials online. An interesting finding in the data reported here is that the majority of the top 12 strategies used by the online readers are Problem Solving Strategies. These same strategies are the ones that differentiate the EFL and the ESL readers. The EFL readers reported using the Problem Solving Strategies more frequently than did the ESL readers. The Problem Solving Strategies include things such as adjusting reading rate, rereading difficult text, and pausing to think about what one is reading.

There have been limited research studies that have examined the differences in reading strategy use between learners in EFL and ESL environments. This study suggests that there are perhaps greater similarities between readers in these two environments than there are differences. Based on responses gathered from the OSORS, overall there are no differences between the 247 online readers who participated in this research study. Also, there are no differences in the use of Global Reading Strategies and Support Reading Strategies between these two groups. The only difference between the two groups as reported in these data is in the use of Problem Solving Strategies. Learners in the EFL environment reported a higher use of Problem Solving Strategies than did the learners in the ESL environment.

Perhaps an interpretation of this finding is that the EFL/ESL distinction is diminishing. The traditional dichotomy between EFL and ESL may not be as important today as it has been in previous years. Learners of English around the world have increased opportunities for exposure to English. Radio, television, the Internet, and availability of good pedagogical materials are reaching learners in

many parts of the world today. This exposure to English provides increased opportunities for input in English and thus decreases the traditional EFL/ESL dichotomy.

IMPLICATIONS

Perhaps the greatest outcome of this research is the importance of metacognitive online reading strategies for second language learners. This strategy type plays a more important role in L2 reading instruction than perhaps we have previously considered. When classroom teachers engage their learners in online learning tasks, a strategy awareness and training component is essential. L2 reading teachers can focus learner attention on the metacognitive reading strategies identified in the OSORS to help learners improve their online reading ability.

The pioneering research by Riley and Harsch (1999) emphasized that teachers needed to be more aware of the instructional environment in which they are teaching. The data from the study reported here suggest that the distinctions between online readers in Costa Rica and in the United States are not very different. The second implication of this study is to revisit the EFL/ESL distinction. Perhaps we need to reconsider whether this is a helpful way for us to look at potential differences in learning environments of L2 learners, especially when the learners are engaged in online learning.

Suggestions for Further Research

I suggest two important areas for further research related to online reading. First, we need to gather reading strategy data from the same readers in online reading contexts and in hard copy contexts. It would be interesting to know it there are any significant differences between these two reading contexts. My hypothesis is that the readers who use a high number of strategies while engaged in hard copy reading also use a high number of strategies while reading online. My hypothesis needs to be tested through empirical data.

Another important area for further research is the role of reading rate and online reading. It is clear from the research on L1 reading that reading rates drop 10-30% when moving from printed material to online reading (Bailey, 1999; Kurniawan & Zaphiris, 2001; Muter, & Maurutto, 1991). However, Nielsen (1998) points out that with better screen resolution (300 dpi) reading rates online can equal those from the printed page. Data from Segalowitz, Poulsen, & Komoda indicate that second language reading rates of highly bilingual readers are "30% or more slower than L1 reading rates" (1991, p. 15). When we combine the slower L2 reading rates with slower online reading rates, L2 readers' reading rates could drop 40-60%. The online reading rates of second language readers deserve our attention as L2 researchers and teachers.

CONCLUSIONS

Although we have been engaged in L2 strategy use research for more than thirty years, there is still so much that we do not know. Online L2 reading strategy research opens many unanswered issues for our consideration. Researchers and classroom teachers must work together to respond to the issues ahead.

This paper has emphasized that metacognitive online reading strategies play an important role for both EFL and ESL readers. This suggests a continually important role for teaching metacognitive reading strategies in the classroom.

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APPENDIX A
ON-LINE SURVEY OF READING STRATEGIES
Adapted from Kouider Mokhtari and Ravi Sheorey, 2002 by Neil J. Anderson

The purpose of this survey is to collect information about the various strategies you use when you read **on-line in ENGLISH** (e.g., surfing the Internet, doing on-line research, etc.). Each statement is followed by five numbers, 1, 2, 3, 4, and 5, and each number means the following:

'1' means that 'I **never or almost never** do this' when I read on-line.
'2' means that 'I do this **only occasionally**' when I read on-line.
'3' means that 'I **sometimes** do this' when I read on-line. (About **50%** of the time.)
'4' means that 'I **usually** do this' when I read on-line.
'5' means that 'I **always or almost always** do this' when I read on-line.

After reading each statement, *circle the number* (1, 2, 3, 4, or 5) which applies to you**.** Note that there are **no right or wrong responses** to any of the items on this survey.

Statement	Never				Always
1. I have a purpose in mind when I read on line.	1	2	3	4	5
2. I participate in live chat with other learners of English.	1	2	3	4	5
3. I participate in live chat with native speakers of English.	1	2	3	4	5
4. I take notes while reading on-line to help me understand what I read.	1	2	3	4	5
5. I think about what I know to help me understand what I read on-line.	1	2	3	4	5
6. I take an overall view of the on-line text to see what it is about before reading it.	1	2	3	4	5
7. When on-line text becomes difficult, I read aloud to help me understand what I read.	1	2	3	4	5
8. I think about whether the content of the on-line text fits my reading purpose.	1	2	3	4	5
9. I read slowly and carefully to make sure I understand what I am reading on-line.	1	2	3	4	5
10. I review the on-line text first by noting its characteristics like length and organization.	1	2	3	4	5
11. I try to get back on track when I lose concentration.	1	2	3	4	5
12. I print out a hard copy of the on-line text then underline or circle information to help me remember it.	1	2	3	4	5
13. I adjust my reading speed according to what I am reading on-line.	1	2	3	4	5
14. When reading on-line, I decide what to read closely and what to ignore.	1	2	3	4	5
15. I use reference materials (e.g. an on-line dictionary) to help me understand what I read on-line.	1	2	3	4	5
16. When on-line text becomes difficult, I pay closer attention to what I am reading.	1	2	3	4	5
17. I read pages on the Internet for academic purposes.	1	2	3	4	5
18. I use tables, figures, and pictures in the on-line text to increase my understanding.	1	2	3	4	5
19. I stop from time to time and think about what I am reading on-line.	1	2	3	4	5
20. I use context clues to help me better understand what I am reading on-line.	1	2	3	4	5
21. I paraphrase (restate ideas in my own words) to better understand what I read on-line.	1	2	3	4	5
22. I try to picture or visualize information to help remember what I read on-line.	1	2	3	4	5
23. I use typographical features like bold face and italics to identify key information.	1	2	3	4	5
24. I critically analyze and evaluate the information presented in the on-line text.	1	2	3	4	5
25. I go back and forth in the on-line text to find relationships among ideas in it.	1	2	3	4	5
26. I check my understanding when I come across new information.	1	2	3	4	5
27. I try to guess what the content of the on-line text is about when I read.	1	2	3	4	5
28. When on-line text becomes difficult, I re-read it to increase my understanding.	1	2	3	4	5
29. I ask myself questions I like to have answered in the on-line text.	1	2	3	4	5
30. I check to see if my guesses about the on-line text are right or wrong.	1	2	3	4	5
31. When I read on-line, I guess the meaning of unknown words or phrases.	1	2	3	4	5
32. I scan the on-line text to get a basic idea of whether it will serve my purposes before choosing to read it.	1	2	3	4	5
33. I read pages on the Internet for fun.	1	2	3	4	5
34. I critically evaluate the on-line text before choosing to use information I read	1	2	3	4	5

on-line.

35. I can distinguish between fact and opinion in on-line texts.	1	2	3	4	5
36. When reading on-line, I look for sites that cover both sides of an issue.	1	2	3	4	5
37. When reading on-line, I translate from English into my native language.	1	2	3	4	5
38. When reading on-line, I think about information in both English and my mother tongue.	1	2	3	4	5

SCORING GUIDELINES FOR THE *SURVEY OF ON-LINE READING STRATEGIES*

Student Name: _____ Date: _____

1. Write the number you circled for each statement (i.e., 1, 2, 3, 4, or 5) in the appropriate blanks below.
2. Add up the scores under each column and place the result on the line under each column.
3. Divide the subscale score by the number of statements in each column to get the average for each subscale.
4. Calculate the average for the whole inventory by adding up the subscale scores and dividing by 30.
5. Use the interpretation guidelines below to understand your averages.

Global Reading Strategies (GLOB Subscale)	Problem Solving Strategies (PROB Subscale)	Support Reading Strategies (SUP Subscale)	**Overall Reading Strategies (ORS)**
1. _____	9. _____	4. _____	**GLOB _____**
2. _____	11. _____	7. _____	
3. _____	13. _____	12. _____	**PROB _____**
5. _____	16. _____	15. _____	
6. _____	19. _____	21. _____	**SUP _____**
8. _____	22. _____	25. _____	
10. _____	28. _____	29. _____	
14. _____	31. _____	37. _____	
17. _____	34. _____	38. _____	
18. _____	35. _____		
20. _____	36. _____		
23. _____			
24. _____			
26. _____			
27. _____			
30. _____			
32. _____			
33. _____			

_____ GLOB Score **/ 18**   _____ PROB Score **/ 11**   _____ SUP Score **/ 9**   _____**Overall Score / 38**

_____ GLOB Average   _____ PROB Average   _____ SUP Average   _____ **Overall average**

KEY TO AVERAGES: 3.5 or higher = High   2.5 – 3.4 = Medium   2.4 or lower = Low

INTERPRETING YOUR SCORES: The overall average indicates how often you use reading strategies when reading academic materials. The average for each subscale shows which group of strategies (i.e., Global, Problem Solving, or support strategies) you use most often when reading. It is important to note, however, that the best possible use of these strategies depends on your reading ability in English, the type of material read, and your reading purpose. A low score on any of the subscales or parts of the inventory indicates that there may be some strategies in these parts that you might want to learn about and consider using when reading (adapted from Oxford 1990, pp. 297-300).

Adapted from Mokhtari, K., & Sheorey, R. (2002). Measuring ESL students reading strategies. *Journal of Developmental Education*, 25 (3), pp. 2-10.

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