ACADEMIC READING ONLINE: DIGITAL READING STRATEGIES OF

GRADUATE-LEVEL ENGLISH LANGUAGE LEARNERS

Lois Ann Knezek, B.A., M.A.

Dissertation Prepared for the Degree of

DOCTOR OF PHILOSOPHY

UNIVERSITY OF NORTH TEXAS

May 2015

APPROVED:

Nancy Nelson, Major Professor
Lin Lin, Committee Member
Ricardo González-Carriedo, Committee Member
Mei Hoyt, Committee Member
James D. Laney, Chair of the Department of Teacher Education and Administration
Costas Tsatsoulis, Interim Dean of the Toulouse Graduate School
Knezek, Lois Ann. *Academic Reading Online: Digital Reading Strategies of Graduate-Level English Language Learners*. Doctor of Philosophy (Language and Literacy Studies), May 2015, 179 pp., 6 tables, 6 figures, references, 198 titles.

English language learners (ELLs) face many linguistic and cultural challenges in their attempts to succeed academically. They encounter complex academic text, which is increasingly presented online. Although some research has addressed the challenges that university-level ELLs face when reading online texts, almost all of this prior work has focused on undergraduates. The purpose of the current study was to investigate the reading strategies employed by graduate-level ELLs when reading an academic English text online. Participating in the study were four foreign-born doctoral students from different first-language backgrounds—Arabic, Korean, Urdu, and Vietnamese—and the focus was on commonalities as well as differences among them. All four were enrolled in the same doctoral-level course, which included the reading of a specific online academic article as a course requirement. When reading this text individually, each student participated in a think-aloud procedure, followed by post-reading and discourse-based interviews. Analyses included unitizing data from the think-aloud protocols, coding units for strategies employed, and considering related interview commentary and classroom contributions.

In their reading, these students made major use of problem-solving strategies, especially reading segments aloud and questioning. They also employed evaluative strategies as well as metacognitive strategies, which included affirming their understanding or indicating lack of understanding. With respect to global strategies, all made use of the article’s abstract and used the cursor to scroll forward to preview the article. In contrast to previous research
with undergraduates, these students made little use of support strategies that involved translation websites. Instead, their major support strategies were navigating to web-based tools, particularly online encyclopedias in English. Despite prior theory and research suggesting the importance of sociorhetorical strategies in academic reading, only one student directed much attention to the authors of the article and to authorial intent. Although all four participants were students in the same doctoral course and were reading the same contextualized article, their strategy use differed in ways that seemed to be related to their educational and cultural backgrounds. Through its detailed analyses of these acts of academic reading, the study contributes to research into the sociocultural nature of ELL students’ reading process.
ACKNOWLEDGMENTS

I would like to express my sincere appreciation and thanks to my dissertation chair, Dr. Nancy Nelson. You have encouraged and guided me, even when I doubted myself. To Dr. Lin Lin, thank you for being a friend and guiding me along the way, especially with your challenging, thoughtful questions. To Dr. Ricardo González-Carriedo, you were the enabler of this study by giving me access to your class, curriculum and students. Thank you. To Dr. Mei Hoyt, I appreciate your guidance and conversations, especially about multicultural and digital matters.

Thank you to wonderful friends who have written with me and given me encouragement and support: Paeng Angnakoon, Kathryn Dixon, Tai-yi (Fischer) Huang, Gloria Natividad, Rebecca Putman, and Julie Williams. And special thanks to my office mate, Robyn Tschantz, who has been there with me from the very beginning, listening and counseling always.

A special thanks must also go to my family: my husband, Gerald, and my three children—Gabriel, Sarah, and Nicholas—who all know the challenges of graduate school and have been an unwavering support.

And finally, a grateful thank-you to the four participants in this study who willingly let me interview them and shared their life stories. Without them, this dissertation would not have been written.
# TABLE OF CONTENTS

ACKNOWLEDGMENTS ..................................................................................................................... iii

LIST OF TABLES ................................................................................................................................ vi

LIST OF FIGURES ............................................................................................................................. vii

DIGITAL READING STRATEGIES OF GRADUATE-LEVEL ENGLISH LANGUAGE LEARNERS ........... 1
  Introduction ........................................................................................................................................ 1
  Theoretical Framework .................................................................................................................. 3
  Related Research .......................................................................................................................... 5
    ELLs’ Reading of Printed Text .................................................................................................... 6
    ELLs’ Online Reading .................................................................................................................. 8
    Sociorhetorical Aspects of Academic Reading ......................................................................... 10

Method of the Study ....................................................................................................................... 11
  Participants ..................................................................................................................................... 11
  Procedures for Data Collection .................................................................................................. 14
  Procedures for Data Analysis .................................................................................................... 18
  Analysis of Think-Aloud Protocols .......................................................................................... 19
  Analysis of the Follow-Up Interviews and Discourse-Based Interviews ............................... 24

Results and Discussion .................................................................................................................. 25
  Patterns across Students ............................................................................................................. 25
  Strategies of the Individual Students ........................................................................................ 35

Conclusion ......................................................................................................................................... 48

References ......................................................................................................................................... 54

APPENDIX A DATA TABLE SHOWING PATTERNS ACROSS THE STUDENTS ............................ 66

APPENDIX B THE PROCESS OF UNITIZING ................................................................................ 69

APPENDIX C GUIDE TO THE PROTOCOL ANALYSIS EXAMPLES ........................................ 71

APPENDIX D GUIDE TO THE PROTOCOL ANALYSIS ................................................................ 79
<table>
<thead>
<tr>
<th></th>
<th>LIST OF TABLES</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Global Strategies Usage Count</td>
<td>26</td>
</tr>
<tr>
<td>2</td>
<td>Problem-solving Strategies Usage Count</td>
<td>29</td>
</tr>
<tr>
<td>3</td>
<td>Support Strategies Usage Count</td>
<td>30</td>
</tr>
<tr>
<td>4</td>
<td>Metacognitive Strategies Usage Count</td>
<td>32</td>
</tr>
<tr>
<td>5</td>
<td>Evaluative Strategies Usage Count</td>
<td>33</td>
</tr>
<tr>
<td>6</td>
<td>Sociorhetorical/disciplinary Strategies Usage Count</td>
<td>34</td>
</tr>
</tbody>
</table>
# LIST OF FIGURES

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Visual representation of global strategies</td>
<td>26</td>
</tr>
<tr>
<td>2.</td>
<td>Visual representation of problem-solving strategies</td>
<td>28</td>
</tr>
<tr>
<td>3.</td>
<td>Visual representation of support strategies</td>
<td>30</td>
</tr>
<tr>
<td>4.</td>
<td>Visual representation of metacognitive strategies</td>
<td>31</td>
</tr>
<tr>
<td>5.</td>
<td>Visual representation of evaluative strategies</td>
<td>33</td>
</tr>
<tr>
<td>6.</td>
<td>Visual representation of sociorhetorical/disciplinary strategies</td>
<td>34</td>
</tr>
</tbody>
</table>
DIGITAL READING STRATEGIES OF GRADUATE-LEVEL ENGLISH LANGUAGE LEARNERS

Introduction

English language learners (ELLs) are the fastest growing student population in the country, not just in the elementary and secondary school population but also in the post-secondary population. With their diverse languages, ethnicities, cultures, and educational and socioeconomic backgrounds, many face challenges in their attempts to succeed academically in United States (U.S.) schools (AFYP, 2009; Flynn & Hill, 2005; NEA, 2011). Many enroll in higher education, both undergraduate and graduate, including large numbers of ELLs who have immigrated from other countries. These students often experience difficulties in reading English texts, not only print texts but also online texts, given the increasing prevalence of online text in academic coursework.

This study focused on the online reading of four graduate-level ELLs, specifically foreign-born doctoral students from different first language backgrounds. Attention was on reading strategies, which, as Graesser (2007) has explained, are “cognitive or behavioral actions that are enacted under particular contextual condition, with the goal of improving some aspects of comprehension” (p. 6). According to Alexander, Graham, and Harris (1998), strategies can be characterized as “procedural, purposeful, effortful, willful, essential, and facilitative” (p. 130). Just as with print text, negotiating text online necessitates the use of such cognitive strategies as questioning, summarizing, and monitoring of comprehension. However, with 21st century literacies, readers must also make use of new resource-oriented strategies, such as navigating to online dictionaries and glossaries and making use of hypertext links (Chun, 2001; McKnight,
Dillon, & Richardson, 1992). Hypertext links within the text provide connections to other documents or other locations, including multi-media and hypermedia.

Features of texts in an online environment can be substantially different from textual features in a print environment. Characteristics of digital reading, especially its nonlinearity, may make reading difficult for readers to negotiate. Text available online tends to be non-linear and webbed with features of multilinearity, such as nodes, links, and networks (Fitzgibbons, 2008), in contrast to print conceptual systems based on ideas of center, margin, hierarchy, linearity, and other bounded features. Reading strategies may now include navigation strategies for negotiating more pathways with more freedom (Leu, Zinzer, Coiro, & Cammack, 2004; Rouet & Levonen, 1996; Spiro, Feltovich, Jacobson, & Coulson, 1992). Because of choices that must be made about which branch to take, readers—not only less-proficient readers but also experienced digital text users—can face orientation and navigation difficulties (Chun, 2001). Moreover, if the text is too difficult, hyper-references may not help (Aust, Kelley, & Roby, 1993; Chun, 2001). Aust et al. (1993) aptly described a hyper-reference as “an online electronic aid that provides immediate access to adjunct information with a direct-return path to the target information” (p. 63). Although the features just discussed characterize online texts, a person accustomed to print reading may use a web document as if it is print-like, viewing it as linear, hierarchical, and one-dimensional (Askehave & Nielsen, 2005).

Researchers have begun to investigate college-level ELLs’ online reading (e.g., Abanomey, 2013; Akyel & Erçetin, 2009; Iwai, 2008; Konishi, 2003; Wang, Spencer, & Xing, 2009), but, despite this interest, little attention has gone thus far to graduate-level ELL online reading and to the strategies employed by individual students. Research is needed into
contextualized reading—reading that is situated in actual graduate courses with actual academic articles. Prior investigations have tended to focus on undergraduates and have not looked into the kinds of sociorhetorical strategies, such as evaluating an author’s credentials and background and also authorial intentions, as well as other strategies that are used by graduate students in reading disciplinary texts.

One cannot generalize to specific language groups on the basis of single individuals, but it seems that new insights into ELL reading can come from having participants from different languages and/or cultures engaged in reading the same text. What commonalities and contrasts might be seen across the individuals? The study reported here is a set of case studies of four ELL doctoral students’ reading of a disciplinary text for a course in which all were participating. It is based, in large part, on thoughts that they verbalized through a think-aloud procedure used to trace the process of their reading as well as through interviews conducted after the reading. The purpose of the study was to identify what reading comprehension strategies these ELLs used when reading an academic English text online. Also of interest was how individual ELLs might vary in their strategic reading and how they would explain the strategies that they used. In the following sections, I provide an explanation of the theoretical framework for this research, a review of related research, a description of approach to the study, results including cross-case comparisons, and discussion of the findings.

Theoretical Framework

Extensive research into cognition beginning in the 1970s led to recognition of the importance of cognitive reading strategies in the comprehension of written texts. This major research attention to reading comprehension began in the 1970s (e.g., R. C. Anderson,
Reynolds, Schallert, & Goetz, 1977; Bransford, Barclay, & Franks, 1972; Bransford & Johnson, 1972; Kintsch & van Dijk, 1978; Meyer, 1975), extended in the 1980s and 1990s (Baker & Brown, 1980; Carey, Harste, & Smith, 1981; Grabe, 1991; Kintsch & Welsch, 1991), and continues in the twenty-first century (Bråten & Anmarkrud, 2013; Cromley & Azevedo, 2006; Hartman, Morsink, & Zheng, 2010; Perfetti & Adlof, 2012; Temur & Bahar, 2011). This body of work, as reviewed by Nelson Spivey (1997), has shown that readers build meaning in response to textual cues by drawing from their relevant prior knowledge. It has also shown that meaning-making is selective in that the salience of particular textual cues varies according to the reader’s topic knowledge as well as the reading context and reading task. Attention continues to go to strategies—“adjustments to reading procedures that reflect the reader’s goals, the difficulty of the text, or some combination of the two” (Perfetti & Adlof, 2012, pp. 8).

A distinction is sometimes made within the broad category of cognitive strategies, and some strategies are labeled with Flavell’s (1976, 1979) term metacognitive. Generally, metacognition, which can be considered thinking about one’s thinking, is thought to comprise self-awareness of one’s cognitive state and self-management of one’s thinking, knowledge, and abilities about a particular task or domain (Brown, Bransford, Ferrara, & Campione, 1983; Jacobs & Paris, 1987; Walqui, 2006). But these kinds of executive functions can also fit within the larger category of cognitive strategies and need not be put in a totally separate category (e.g., Alexander et al., 1998).

When cognitive research was beginning, many researchers attempted to bracket off social factors to make their studies “purely” cognitive, as Gardner (1987) explained in his history of the “cognitive revolution.” Social research was viewed as belonging to a different
paradigm. But that distinction between the cognitive and the social has blurred over time.

Today, even when the focus is cognitive, there is awareness that attention must also go to social and sociocultural factors, and citations are made of researchers associated with social theories, such as Cole (1998) and Vygotsky (1978). This connection between the cognitive and social elements is most apparent in Brown, Collins, and Duguid’s (1989), demonstration of the “situatedness” of cognition within particular disciplinary groups, and in Lave and Wenger’s (1991) and Wenger’s (1998) influential work on “communities of practice.” Together the lines of research based on both conceptions have shown how learning occurs as cognitive apprenticeship in communities with characteristic ways of doing, thinking, and talking. This work on the situatedness of cognition has shown ways in which cognitive and social elements are in separable. My study was guided by such claims.

Influenced by Gee’s (1992/2014) theory of the social mind, Atkinson (2002) has summarized the sociocognitive perspective: that language is an individual’s “set of interactively constructed social tools, practices, and experiences . . . held jointly with the social world” (p. 528) and that cognitive acts “do not start in the head, although the head is certainly involved, nor do they end in the head, because the output is social action” (p. 531). Cognitive processes are manifested in interactions, and knowledge is distributed across people, tools, and texts.

Related Research

How can a researcher gain insights into the reading strategies that people use as they read to comprehend texts? Some researchers investigating ELLs’ reading have used interviews or questionnaires after the reading (e.g., Bang & Zhao, 2007; Jimenez, Garcia, & Pearson, 1995; Sakar & Erçetin, 2005). However, a major approach used for studying readers’ strategies is
known as thinking-aloud—an approach that has been used for decades in cognitive research and is closely associated with the work of Newell and Simon (1972) and Ericsson and Simon (1980) in cognitive psychology. Participants in think-aloud research are asked to verbalize their thoughts while working through a problem, and their verbalizations are recorded and analyzed for the strategies that were employed. In the 1980s, the approach began to be used in research focused on writing and reading strategies (e.g., Afflerbach & Johnston, 1984; Bereiter & Scardamalia, 1987; Flower & Hayes, 1981; Haas & Flower, 1988; Olson, Duffy, & Mack, 1984) and continues to be used in studies of the reading process (e.g., Kendeou, Muis, & Fulton, 2011; Scott, 2008). Think-aloud research tends oftentimes to have fairly small numbers of participants because of the intensive analysis required and the need to provide a portrayal of an individual’s cognitive activity that is as full as possible (Chiu & Shu, 2010; Eveland & Dunwoody, 2000).

The review of related research is organized into three parts: first, a review of research into ELLs’ reading of print texts; second, a review of research into ELLs’ strategies in online reading; and finally, a discussion of sociorhetorical factors that seem so important in graduate students’ reading but have been given little attention in research so far.

**ELLs’ Reading of Printed Text**

In making sense of print texts, ELL readers have been shown to use strategies from three major classifications—global strategies, problem-solving strategies, and support strategies (N. J. Anderson, 2003; Mokhtari & Reichard, 2002; Mokhtari & Sheorey, 2002; Sheorey & Mokhtari, 2001). Global strategies include having a purpose in mind, getting the layout of the whole text (length, organization), inferring a sense of the whole text, and skimming. Problem-
solving strategies include such features as guessing unknown meanings, visualizing, resolving conflict, paraphrasing, and rereading to improve comprehension. Support strategies include using tools like a dictionary or a translation source, notetaking, and highlighting. For social situations, A. L. Brown (1987) added another category called social/affective, which includes cooperation and interaction with others.

Researchers using both think-aloud methods and retrospective surveys agreed that English language proficiency also plays a part in strategy use. ELLs with a higher English proficiency may use more global top-down strategies, such as skimming or predicting. On the other hand, those with lower English proficiencies tend to use more localized bottom-up strategies, such as rereading and paraphrasing (Block, 1986; Carrell, 1989; McNeil, 2010; Poole, 2010; Salataci & Akyel, 2002; Zhang, 2001).

It is clear from the research that readers from different cultural backgrounds build different interpretations of the same text. Two oft-cited studies were conducted by R.C. Anderson (1977) and R. C. Anderson et al. (1977). Both studies found that passage interpretation was related to the reader’s background; the reader constructs meaning by employing relevant schemata as well as cues from text. Readers’ interpretations can “vary according to age, subculture, experience, education, interests, and belief systems” (R. C. Anderson et al., 1977, p. 378). Other researchers had similar findings showing that reading comprehension is affected by cultural factors (Carrell & Eisterhold, 1983; Field & Aebersold, 1990; Steffensen, Joag-Dev, & Anderson, 1979).

All readers, including ELLs, draw from their prior knowledge and experience to make sense of the text (Santori, 2008; Smagorinsky, 2007). As Smagorinsky (2007) pointed out,
“Thinking is a product of cultural practice and so people from diverse backgrounds often frame social situations and how to act in them differently” (p. 66). As literacy develops from the cultural capital students bring, individual students’ interpretations and their use of sense-making strategies become even more important (Aukerman, 2013; Dyson, 2003; Jimenez et al., 1995; Smagorinsky, 2001).

**ELLs’ Online Reading**

Making use of strategic resources can be especially important for ELLs when reading online because of the large amount of information that is available as well as the lack of structure for reading (Genc, 2011). Also, as pointed out by Schmar-Dobler (2003), due to the changeable nature of hypertext, online reading can be a constant decision-making process, and as noted by Sutherland-Smith (2002), the nonlinearity of hyperlinks means that non-hierarchical strategies of thinking are required. Learners who are used to print reading strategies and have little self-awareness of online reading may become confused in the digital environment (Poole, 2008-09; Protopsaltis, 2008). However, the unique nature of online text does not preclude ELLs from continuing to use certain print reading strategies. Navigation maps on web pages still allow use of skimming, and online glossaries take the place of paper dictionaries (Akyel & Erçetin, 2009). Interestingly, high and low proficiency readers in English use similar strategies when reading online academic text. However, high proficiency English readers use these strategies more efficiently (Huang, Chern, & Lin, 2009; Park & Kim, 2011).

Research into ELLs’ online reading has focused on various ages and educational levels of readers (e.g., Genc, 2011; Huang et al., 2009; Mesgar et al., 2012; Park & Kim, 2011). Much of this prior research has been conducted with ELL undergraduates or post-secondary ELLs.
studying English. Most relevant to the present study is the research investigating the online reading of college-age ELL students, much of which has employed think-aloud procedures and has been conducted in countries other than the U.S. Researchers working with Japanese, Turkish, and Taiwanese undergraduate students found that the students experienced some navigation difficulties and disorientation when reading online due to the multi-linearity and open-endedness of the Web (Akyel & Erçetin, 2009; Genc, 2011, Huang et al., 2009). These studies also found that most of these undergraduates made use of online reference tools and read the material rather slowly, although not outloud. In some of this research, students were also given the opportunity to use a print copy of the reading material but chose not to use it.

Researchers also commented on how the online medium can support students’ reading and contribute to their learning and comprehension as they explore other Web pages and links (Kolikant, 2010; Konishi, 2003). Particular note has been made of mouseovers and hyperglosses. Mouseovers (also called hoverboxes and tooltips) occur when the online reader “hovers” the cursor over a targeted word or phrase and a short description of the phrase appears (Mouseover, 2014). They differ from hyperlinks in that hyperlinks take the reader to another webpage for further information (Hyperlink, n.d.). If mouseovers were provided, students tended to use these tools immediately to access meanings of unfamiliar words or concepts, with students reporting that these applications facilitated their reading, made it more enjoyable, and increased motivation (Park & Kim, 2011). Although other studies did not mention specific websites such as Google and Wikipedia, researchers have reported that both undergraduate and graduate ELLs made frequent use of multimedia glosses—dictionaries, translations and pronunciation (Aust et al., 1993; Lomicka, 1998; Mesgar et al., 2012). Eveland
and Dunwoody’s (2000) study confirmed that Web-based reading can offer resources that can be used strategically by readers, although Ramli, Darus, & Bakar (2011) found that some students find hypertexts to be troublesome and confusing, and instructors should instead equip students with more effective reading strategies.

_Sociorhetorical Aspects of Academic Reading_

Missing from almost all of the research into ELL college students’ online reading online is attention to the sociorhetorical aspect of academic reading that was pointed out clearly by Haas and Flower (1988) in their study of “rhetorical reading.” Sophisticated readers speculate about the author and the author’s intent, but novices are less likely to attend to the author. Haswell, Briggs, Fay, Gillen, Harrill, Shupala, and Trevino (1999) replicated Haas and Flower’s (1988) work, with similar findings, but noted that increased student familiarity with the content made a significant difference in the amount of rhetorical comments. Researchers working with subject-specific physics and history texts found that attention to author and authorial intent plays a major role in the sophisticated reading of scholars in their own particular fields (Bazerman, 1985; Wineburg, 1991).

Sanchez (2009) explored ELL undergraduates’ acquisition of rhetorical reading strategies, connecting the reader and writer, and found a relation with critical thinking skills. These included such matters as awareness of author’s purpose relative to the audience. What a reader brings to the text and the readers’ interactions with the text can be just as important as the text itself (Zamel, 1992). ELLs are unique because they can bring another set of identities to the reading. Not only do they merge their first and second language and culture, but they
may engage with an author who is from another language and/or culture (Mangelsdorf, 1998; Neeta & Klu, 2013; Rodby, 1990).

Method of the Study

The study can be considered as a set of multiple inter-related case studies. It focused on four graduate students from different countries whose first languages were not English. All four students were enrolled in a doctoral-level course in Politics of Literacy, which had, as one of its requirements, reading the electronic text that was the material for this study. The course is described in the following way in the course catalog (UNT, 2014):

Investigation of significant policy documents that influence the field of literacy education. Along with building historical background, this course engages in critique and interpretation of policy from varying theoretical perspectives. Connections between research and policy, implications for district and campus decision-making, and opportunities for advocacy and policy development are included.

To gain insights into the participants’ reading strategies as they read an electronic text, I employed a think-aloud approach along with interviews and observations. The four students were assigned an academic article in the form of electronic text as part of the course material, and they had not looked at it prior to the think-aloud process.

Participants

The chosen doctoral-level class, Politics of Literacy, included a student from each of the following countries: Pakistan, Saudi Arabia, South Korea, and Vietnam. All four consented to participate. To enroll as a doctoral student at the university, the participants had to have either completed a Master’s degree from an American university or have a minimum Test of English as Foreign Language (TOEFL) score of 79. All four met these requirements. The heritage languages, all typologically unrelated, were Urdu (from Pakistan), Arabic (from Saudi Arabia),
Korean (from South Korea), and Vietnamese (from Vietnam). This variability provided some insights into differences that might be associated with language and culture, even though the small number of cases meant that I could make stronger claims only regarding the four participants as individuals. Nevertheless, this small number can provide insights, since complexity of data and relevant themes would likely still occur (Guest, Bunce, & Johnson, 2006; Ryan & Bernard, 2003). Koda’s (2007) research, however, summarized studies that showed that phonological awareness in a reader’s heritage language facilitates reading in a second language, regardless of whether the two languages are typologically related writing systems or not. The following are brief descriptions of the four participants with pseudonyms instead of their actual names.

Lan, then in her third year of the doctoral program, was a 38-year-old female, born in Vietnam to Vietnamese parents. She had lived in the U.S. for eight years, traveling back to Vietnam for a few years, before beginning the doctoral program. She felt destined to have a career in education because her father and three older sisters set a precedence for her. Lan was one of eight students sent to Hawai’i through a Ford Foundation scholarship, where she received a master’s degree in Applied Linguistics from Hawai’i Pacific University. After returning to Vietnam, she decided to pursue a doctorate overseas. She indicated that she hoped to remain in the United States after completing her doctorate to improve Vietnam’s educational system from abroad.

Myriam, then in her third year of the doctoral program, was a 30-year-old female born in Saudi Arabia to Saudi parents. She was working at a Saudi university in 2007 as a preschool teacher assistant, but, to keep the position, she had to continue graduate studies, preferably
internationally. She had completed a master’s degree in the U.S. and lived in the U.S. for five years before beginning the doctoral program. She was particularly interested in literacy education, and she chose her present university because the university did not require a U.S. teaching certificate to enter the doctoral program. Myriam indicated that she would return to Saudi Arabia after her doctorate to continue research and teaching in literacy education.

Bilal was a 36-year-old Pakistani male, also in his third year of the doctoral program, who came to the U.S. out of an interest in studying policy and politics as they relate to curriculum. Because his studies were funded by the United States Agency for International Development (USAID), he was required to enroll at an American university. He chose his present university for its inclusion of policy issues in curriculum studies. At the time of the study, he was in his third year of residing in the U.S. For his doctoral work, he was particularly interested in comparing U.S. curriculum and policy to Pakistan’s curriculum and national educational policy.

Kyung, a 36-year old South Korean male in his second year of the doctoral program, chose graduate school in the United States because of future employment possibilities. He had resided in the U.S. for about six years, completing a master’s degree and then working for an American university before beginning the doctoral program. Many South Koreans believe that Korean employers prefer students from U.S. universities, even over graduates from Australian or British universities. Kyung chose his present university and an educationally-oriented program because of its emphasis on educational application of linguistic research related second language acquisition.
Procedures for Data Collection

This section describes my procedures for data collection before, during, and after students were reading the online article. The procedures included initial interviews, the actual think-aloud process while reading, and follow-up interviews. Elements of the study extended over a four-week period.

Initial interviews. Initial interviews with the participants provided important information about their backgrounds. Two of the students were interviewed in their homes and the other two in locations near the university, and these interactions were audiotaped. Initial interviews, which followed an interview-schedule approach (Bauer, 1996; Langer, Bartolome, Vasquez, & Lucas, 1990; Qayyum, 2008) focused on such matters as their reasons for coming to the United States, their decisions to enter a doctoral program, their heritage languages, their use of English, and their familiarity with computer usage and hypertext. These interviews, which were audio recorded, ranged in length from 41 to 106 minutes, averaging 79 minutes.

Thinking aloud. The next week after the first interviews, I met individually with participants, two in their homes and two in the computer labs, first explaining the think-aloud procedure and pointing out that verbalizations do not involve reflection but are only thoughts as they are occurring. Next, I modeled the think-aloud procedure while reading an online article titled “Critical Discourse Analysis” (CDA, n.d.). Then the participant practiced thinking aloud with the online article titled “‘The Author and the Princess’—An Example of Critical Discourse Analysis” (Evans, 2013). This was intended to increase the participant’s comfort level and willingness to engage in the activity (cf. Jimenez et al., 1995), since some ELLs may find it difficult to verbalize their thoughts while reading silently or outloud (Langer et al., 1990).
As advised by Rankin (1988), the actual think-aloud session followed immediately after
the practice activity. The two participants working in their homes used their own laptops; the
other two used the lab computers. Students verbalized their thoughts as they read the article
online while I recorded with a video camera with audio capabilities. Computers all had Internet
access; thus, students could access online resources, if desired, such as Google or Wikipedia.
Students were given as much time as needed to read the article. Occasionally, I prompted
them with “keep talking,” but otherwise did not interrupt or ask questions during the think-
aloud process. Participants could use whatever strategies or means that were available to help
them with understanding and navigation, which could include using social media or “smart
phones.” Although some researchers have concerns reactivity that might be associated with
the thinking-aloud method, others have indicated that cognitive processes are not changed
substantively by the think-aloud procedures, although the processes are slowed down
(Charters, 2003; Ericsson & Simon, 1984; Rankin, 1988; Shavelson, Webb & Burstein, 1986).
Block (1986, 1992) addressed concerns of whether or not the language used during the think-
aloud process makes a difference in the outcome, and found that strategy use was not tied to
specific languages.

The think-aloud readings were videotaped and audiotaped. During the participants’
think-aloud sessions, my seated position was behind and to the right side, which permitted me
to unobtrusively observe and take anecdotal notes on a printed version of the text, as
suggested by Rankin (1988) and Wade (1990). For the notes, my attention was mainly on
online reading behaviors, since recordings would capture the verbalizations (cf. Charters, 2003;
Rankin, 1988). The participants’ think-aloud sessions ranged from 52 minutes for Kyung to 60 minutes for Bilal, and the average was 55 minutes. The total time for all four was 219 minutes.

All participants read the same online article, which was from the online journal *Contemporary Issues in Technology and English Language Arts Teacher Education*. The article, “Constructing Critical Literacy Practices Through Technology, Tools, and Inquiry,” 4,603 words in length, was written by Myers and Beach (2004). The academic article is written as an essay, and makes the argument that various technology tools can support critical literacy practices with their entire range of text and media. The article is organized into the following subtopics: (a) beliefs about literacy, technology, and pedagogy; (b) video editing tools with *Fahrenheit 451*; (c) creation of media collages; (d) use of hypermedia productions to critique media representations; and (e) integration of hypermedia inquiry projects into English teacher education. The authors include 19 references. As a hypertext, the article contains 20 hyperlinks. Four links are intended to take the reader to videos; other links take the reader to the authors’ emails, information about topics related to the article content, and a portable document format (PDF) version of the article. However, as with many materials on the web, some hyperlinks had disappeared over time or would take the reader to an alternate website. In the case of this article, three still functioned out of 20.

*Post-reading interviews*. Immediately after reading, participants responded to questions regarding their reading. As with the initial interview, the post-reading interview was based on an interview schedule and was audiotaped. This one included the following questions:

- Did you like the article?
- What did you think about the links that didn’t work?
• Do you think you understood everything about the authors’ main points?
• What works best for you when you’re reading? Do you read it all first, then read it a second time?
• Are you going to read the article again or do you feel that you understand it?
• If you’re going to discuss this in your professor’s class, are you going to print out the article?
• If your professor had said to read this article, would you have printed it out first?
• If you were reading and you didn’t understand a word, what would you have done if you weren’t reading online?
• Is there anything else you want to add about how you read on the Internet?

Follow-up prompts elicited more detail and clarity from the participants as they responded. My follow-up prompts encouraged participants to elaborate and/or to clarify their responses (Patton, 1990; Rubin & Rubin, 2005). Particularly useful were prompts suggested by Schatzman and Strauss (1973): (a) **chronology**: “And then?”, “When was that?”, (b) **detail**: “Tell me more”, (c) **clarification**: “I don’t quite understand”, and (d) **explanation**: “Why?” “How come?” I also asked questions such as the following that were more specific to each participant.

• I noticed that you went with Google a lot. Why didn’t you go to Bing?
• If you don’t understand something, do you put it into Urdu to understand it better?
• Why did you take notes while you were reading? Do you write your notes in English?
• Why did you go to Wikipedia most of the time?
Discourse-based interviews. Another interview with each of the four participants followed one to two weeks later. This one took the form of a discourse-based interview (Odell, Goswami, & Herrington, 1983; Zwann & Brown, 1996), in that questions returned to specific verbalizations in the think-aloud protocols, which at this point had been transcribed and typed. Each participant received a typed transcript of his or her think-aloud and was asked to explain some of the thoughts that were expressed. For example, in her think-aloud, Lan had said the following: “So the authors, Myers and Beach, I don’t know them. All right, so, I’m gonna read the abstract first.” One of my questions for her was “Why did you first look at who the authors of the article were?” Kyung had said in his think-aloud, “This is more of an essay or column, this is not an article.” One of my questions for him was “Why did you say it wasn’t an academic article?” These discourse-based interviews ranged in length from 42 to 85 minutes, with the average being 57 minutes.

Class observation. After all four students had completed their think-alouds, follow-up interviews, and discourse-based interviews, I attended the next class meeting of their class, Politics of Literacy, for an hour and a half to observe the discussion of the Myers and Beach (2004) article. All the other students in the class had also read the same article. This discussion was audio-recorded and also transcribed.

Procedures for Data Analysis

This section focuses mainly on procedures for analyzing the think-aloud protocols, which
were the major data source. The initial interviews, though transcribed, were not systematically unitized and coded. They were used mainly to provide more detail in describing the case studies. Transcripts of the other interviews—follow-up interviews and discourse-based—were read selectively for portions relevant to the strategies revealed in analysis of the think-alouds. This selective reading also characterized my reading of observation notes from the class in which students discussed the article they had read. I was looking for relationships to strategies employed earlier in their reading of the article.

**Analysis of Think-Aloud Protocols**

**Transcription and unitizing.** Recordings from audiotapes and videotapes, when combined, provided single protocols for each student’s think-aloud session. Transcription of verbalizations was verbatim, including all words spoken by the participants. During the transcription, I was conscious of the point made by several researchers (e.g. Gubrium & Holstein, 2003; Guthrie, Hoa, Wigfield, Tonks, Humenick, & Littles, 2007; Mishler, 1986; Zhang & Wildemuth, 2009) that transcription does involve interpretation and is not a totally objective process. Pauses within an utterance were indicated with ellipsis marks, and behaviors such as participant’s oral reading of portions of the text was not transcribed differently, but the distinction was noted in the coding, laughing, using a sarcastic tone, or performing some action were marked with brackets. A

English language learners (ELLs) face many linguistic and cultural challenges in their attempts to succeed academically. They encounter complex academic text, which is increasingly presented online. Although some research has addressed the challenges that university-level ELLs face when reading online texts, almost all of this prior work has focused on
undergraduates. The purpose of the current study was to investigate the reading strategies employed by graduate-level ELLs when reading an academic English text online. Participating in the study were four foreign-born doctoral students from different first-language backgrounds—Arabic, Korean, Urdu, and Vietnamese—and the focus was on commonalities as well as differences among them. All four were enrolled in the same doctoral-level course, which included the reading of a specific online academic article as a course requirement. When reading this text individually, each student participated in a think-aloud procedure, followed by post-reading and discourse-based interviews. Analyses included unitizing data from the think-aloud protocols, coding units for strategies employed, and considering related interview commentary and classroom contributions.

In their reading, these students made major use of problem-solving strategies, especially reading segments aloud and questioning. They also employed evaluative strategies as well as metacognitive strategies, which included affirming their understanding or indicating lack of understanding. With respect to global strategies, all made use of the article’s abstract and used the cursor to scroll forward to preview the article. In contrast to previous research with undergraduates, these students made little use of support strategies that involved translation websites. Instead, their major support strategies were navigating to web-based tools, particularly online encyclopedias in English. Despite prior theory and research suggesting the importance of sociorhetorical strategies in academic reading, only one student directed much attention to the authors of the article and to authorial intent. Although all four participants were students in the same doctoral course and were reading the same contextualized article, their strategy use differed in ways that seemed to be related to their
educational and cultural backgrounds. Through its detailed analyses of these acts of academic reading, the study contributes to research into the sociocultural nature of ELL students’ reading process.

Before elements of the think-aloud protocols could be coded, the units had to be identified through a process called unitizing. My unit was an utterance, which might have been a word, a phrase, a clause, a sentence, or multiple sentences that was preceded and followed by silence. Numbering line by line was intended to facilitate coding (cf. Bryman, 2008; Charters, 2003; Guthrie et al., 2007). An example of this process is in Appendix B.

_Coding of protocols._ Protocols had six columns: (1) the participant’s name, (2) the coded categories, (3) the participant’s utterances, (4) the relevant portions of text from the article, (5) the page and paragraph number from the PDF version of the article, and (6) my notes and interpretations, including behaviors (e.g., participant’s note taking, laughing). Representative examples of coded protocols from each participant are in Appendices E through H.

Coding categories were drawn from previous research conducted by Akyel and Erçetin (2009), N. J. Anderson (2003), Bråten and Anmarkrud (2013), Coiro and Dobler (2007), Cromley and Azevedo (2006), Huang et al. (2009), Ketabi, Ghavamnia, and Rezazadeh (2012), Konishi (2003), Mokhtari and Reichard (2004), Mokhtari and Sheorey (2002), and Sheorey and Mokhtari (2001). Major categories employed by the researchers included global strategies, problem-solving strategies, support strategies, metacognitive strategies, and evaluative strategies, although terminology tends to differ. The scheme also had a category for sociorhetorical strategies because of research in disciplinary reading showing the importance of sociorhetorical factors in disciplinary reading (Haas & Flowers, 1988), even though this category had not been
employed in previous research with ELL students. Although the major source was the
ticipants’ utterances, coding was also at times based on the actions provided in column six
and/or on non-words such as “um,” “unh unh,” or “hmph.” Categories and subcategories were
the following:

Global strategies
  o Sg determining general topic
  o Sa using abstract
  o Sf scrolling forward

Problem-solving strategies
  o So relating to own experience/adding to content of text
  o St focusing on meaning of a single word or phrase
  o Sr rereading
  o Sl opening (or attempting to open) link in article
  o Sp paraphrasing/summarizing
  o So\(^1\) reading segment aloud verbatim
  o So\(^2\) reading segment aloud--not verbatim but only selected words in the segment
  o Sb scrolling backward
  o Sq questioning

Support strategies
  o Sl\(^n\) using a translation tool
  o Sh highlighting
  o Sn notetaking
o Sw^a using web-based tool, Google

o Sw^w using web-based tool, Wikipedia

o Sw^y using web-based tool, YouTube

o Sw^o using a web-based tool other than those specified with the other codes

Metacognitive strategies

o Mu affirming one’s understanding

o Ml indicating lack of understanding

Evaluative strategies

o Ep critiquing positive/noting agreement

o En critiquing negative

Sociorhetorical/Disciplinary strategies

o Dt identifying text source

o Da identifying authors of article by their names

o Dr referring to authors of article

o Do relating to other disciplinary authors

o Dg determining genre

o Dp determining paradigm

In some cases, a particular utterance had two or more codes. This is called “double coding” (Davis & Neitzel, 2012; Saldana, 2012). For example, for Myriam’s utterance “But how does it look like—inquiry based English instruction? Okay, I’ll keep reading,” the codes were Sq (questioning), Sq (determining general topic). For Bilal’s utterance when questioning the phrase, “So what do they mean by character development?” the codes were Sq (questioning),
Sw (using web-based tool, Google), St (focusing on meaning of a single word or phrase) and Sw o (using a web-based tool other than those specified with the other codes). The latter two were included because at the same time he was verbalizing his question, he was beginning to search for answers to it.

Inter-rater reliability of the coding scheme was determined by having a trained, second person code one of the think-aloud transcripts. The percent of inter-rater agreement for all units was 88 percent.

Analysis of the Follow-Up Interviews and Discourse-Based Interviews

The follow-up and discourse-based interviews, like the initial interviews, were also not unitized or coded. However, these interviews were used to gain a better understanding of the participants’ strategy use, and salient information from the interviews was used to help write descriptions of the strategies in the case studies. My interest was in particular experiences, either unique to the individual or common across all four participants, which might explain the strategies used. For example, as explained further in the section “Strategies of Individual Students,” Lan was the only participant who did not use other sources to help with comprehension.

Analysis of the Classroom Observation Notes

As noted above, the classroom discussion was recorded and anecdotal notes were also taken. However, although the recording was transcribed, it was not unitized or coded. In studying the transcripts and notes, I was interested in the contributions that participants in my study made to the discussion and also their interaction with other members of the class.
Special attention was given to verbalizations that might relate to what had been revealed through analysis of the think-aloud protocols.

Results and Discussion

This section provides results of the analyses. The presentation is first on overall results for all four participants, although differences across participants are also highlighted. Then individual attention is on each participant, with more detailed descriptions of their think-aloud protocols, interesting strategy use, and cultural backgrounds. For each group of strategies, a figure shows a graphical representation of the students’ strategy use and a table provides a numerical representation of the students’ strategy use.

Patterns across Students

This section describes the overall strategy use for each category, comparing and contrasting the four participants’ strategy use.

Global strategies. As expected, these four participants, as doctoral students with higher English proficiencies than students in prior studies, made use of globalized top-down strategies. Not only did they all employ the using abstract strategy to get a sense of the text, but they also all utilized the scrolling forward strategy. Kyung, in particular, used the cursor to scroll forward through the article, gauging the length and scope of the article. He scrolled forward 23 times as he read. Figure 1 provides a visual representation of the patterns for the global strategies, and Table 1 provides the data in an alternate form.
Figure 1. Visual representation of global strategies.

Table 1

Global Strategies Usage Count

<table>
<thead>
<tr>
<th>Participant</th>
<th>Determining general topic</th>
<th>Using abstract</th>
<th>Scrolling forward</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lan</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Myriam</td>
<td>4</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Bilal</td>
<td>2</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Kyung</td>
<td>2</td>
<td>10</td>
<td>23</td>
</tr>
</tbody>
</table>

Problem-solving strategies. As expected, the problem-solving strategies, as the most essential to text comprehension as the reading progressed, were the most used. The most utilized strategy was reading segment aloud-not verbatim but only selected words in the segment) but participants also used reading segment aloud verbatim. All of them explained that reading text aloud aided in comprehension. Bilal, in particular, read most of the article
aloud verbatim, while Kyung selected certain words and phrases to speak aloud. Bilal, though, read the text methodically, paragraph by paragraph, while Kyung skipped around the article at times as he read out loud. Related to this was another common strategy, focusing on meaning of a single word or phrase, apparent when participants—all four of them—chose a single word or phrase to read aloud and/or repeat as a way of voice pointing for focus. For example, Kyung repeatedly said “critical consciousness” and “community agency,” while Myriam used voice pointing for the specialized term “hyper-discourse.” Participants also frequently used the questioning strategy as they read, whether it was questioning the purpose of the article or questioning the meaning of a passage.

What was interesting is that Lan made extensive use of the strategy relating to own experience/adding to content of text, referring to her prior experiences as a teacher in Vietnam, saying, for example, “When I taught, I didn’t teach them inference skill. Why do they say that?” and, “Some young learners, they just come to class and they don’t even know why they have to learn.” The least used strategy was rereading; Lan only used this strategy once and Bilal only four times. For example, Bilal read, “with all of these tools, we have found the learning curve to be very short with students and long with teachers” and then reread, “the learning curve to be very short with students and long with teachers.” Both he and Lan explained that they used this strategy if a passage was confusing.

Kyung also used the strategy opening (or attempting to open) link in article more than the other three participants. He repeatedly tried to open links within the article, and pursued alternate methods if the original links did not work. For him, this strategy was related to the strategy scrolling backward. If a link did not initially open, Kyung would scroll backwards
through the article, looking for previous links or terms that might help him. Myriam, similarly, continued to try to open links, but quickly became frustrated. Lan and Bilal also used this strategy but stopped trying to open a particular link when they saw that it did not work. The problem-solving strategy *paraphrasing/summarizing* was primarily used by Lan and Bilal. Both explained that first paraphrasing and then summarizing after each paragraph helped them understand the article. Figure 2 and Table 2 show the types of problem-solving strategies and the number of times they were employed.

*Figure 2. Visual representation of problem-solving strategies.*
Table 2

**Problem-Solving Strategies Usage Count**

<table>
<thead>
<tr>
<th>Participant</th>
<th>Opening (or attempting to open) link in article</th>
<th>Focusing on meaning of single word or phrase</th>
<th>Rereading</th>
<th>Paraphrasing/Summarizing</th>
<th>Reading segment aloud verbatim</th>
<th>Reading segment aloud—not verbatim but only selected words in the segment</th>
<th>Questioning</th>
<th>Scrolling backward</th>
<th>Relating to own experience/adding to content of text</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lan</td>
<td>5</td>
<td>24</td>
<td>1</td>
<td>18</td>
<td>7</td>
<td>14</td>
<td>27</td>
<td>6</td>
<td>44</td>
</tr>
<tr>
<td>Myriam</td>
<td>9</td>
<td>6</td>
<td>0</td>
<td>7</td>
<td>1</td>
<td>3</td>
<td>15</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>Bilal</td>
<td>6</td>
<td>17</td>
<td>4</td>
<td>18</td>
<td>74</td>
<td>18</td>
<td>14</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>Kyung</td>
<td>25</td>
<td>26</td>
<td>0</td>
<td>8</td>
<td>2</td>
<td>70</td>
<td>33</td>
<td>25</td>
<td>1</td>
</tr>
</tbody>
</table>

*Support strategies*. Given the findings of previous research with undergraduate ELLs (Abanomey, 2013; Akyel & Erçetin, 2009; Bakar, 2008), one might expect use of support strategies, including *using a translation tool or using another web-based tool, such as Google, Wikipedia, or YouTube*. However, these strategies were not used much by these doctoral-level readers, although they could access digital support tools if they chose. Google was used three times by Myriam, eight times by Bilal, and ten times by Kyung. Wikipedia was used two times by Myriam, six times by Bilal, and eight times by Kyung. Myriam, Bilal, and Kyung used the cursor to temporarily highlight text on the screen, although Bilal was the one who primarily used this strategy. He said that *highlighting* text on the screen helped focus his attention. He was also the only one who engaged in taking notes while reading. He explained, “When I complete an article, I try to write in my own words what I learned from this article, and I try to pose some questions if I disagree.” Lan did not use any support strategies at all, preferring to read the article without any aid.
All four participants were frustrated by the broken links and would have preferred mouseovers instead. They realized that they needed the links to understand the article but they would have preferred to have information opening in a box on the screen as opposed to information opening up in a new window. Figure 3 and Table 3 provide details for the types of support strategies and the number of times they were used by the students.

Figure 3. Visual representation of support strategies.

Table 3

Support Strategies Usage Count

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Lan</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Myriam</td>
<td>3</td>
<td>2</td>
<td>0</td>
<td>3</td>
<td>2</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Bilal</td>
<td>0</td>
<td>24</td>
<td>11</td>
<td>8</td>
<td>6</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Kyung</td>
<td>0</td>
<td>8</td>
<td>0</td>
<td>10</td>
<td>8</td>
<td>3</td>
<td>6</td>
</tr>
</tbody>
</table>
**Metacognitive strategies.** The second most utilized group of strategies were the metacognitive strategies. These are *affirming one’s understanding* and *indicating lack of understanding*. As the participants were thinking aloud, one way they monitored their understanding of the article was by using the strategy *affirming one’s understanding*, and this was indicated mainly by saying “okay.” Bilal and Kyung, in particular, used this strategy. For instance, at one point, Bilal said, “So, okay, constructing critical literacy practices through technology tools and inquiry.” Kyung remarked “No, Google. Community agency? Okay” and “Okay, literacy skills defined as cognitive abilities, motivation, typical English classroom, okay.” Figure 4 and Table 4 show the types of metacognitive strategies and the extensiveness of their use.

![Figure 4. Visual representation of metacognitive strategies.](image)
### Table 4

**Metacognitive Strategies Usage Count**

<table>
<thead>
<tr>
<th>Participant</th>
<th>Affirming one’s understanding</th>
<th>Indicating lack of understanding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lan</td>
<td>3</td>
<td>14</td>
</tr>
<tr>
<td>Myriam</td>
<td>12</td>
<td>10</td>
</tr>
<tr>
<td>Bilal</td>
<td>50</td>
<td>1</td>
</tr>
<tr>
<td>Kyung</td>
<td>42</td>
<td>6</td>
</tr>
</tbody>
</table>

*Evaluative strategies.* More than any of the other participants, Lan engaged in critiquing the article, both *critiquing positive* and *critiquing negative*. But her negative verbalizations far exceeded the positive. For instance, when reading the following passage, she said, “Huh, I don’t think student can think that much deep. It may happen to, you know, it may happen to university students maybe, I don’t know.”

In this multimedia, multicultural world, teacher educators must prepare future teachers of literacy, language, culture, and citizenship to expand the forms of representation typical in the school classroom and to reframe the purpose of school on the critique and production of diverse representations of experience and knowledge. As students learn to use technology tools to build representations of a social world’s characteristics, they generate reflective critical thought through their analysis and critique of the identities, relationships, and values constructed by the cultural practices and discourses in that social world. *(Myers & Beach, 2004, p. 258)*

Likewise, Kyung’s negative critiquing occurred frequently, as when he said, “Okay. Abstract. Current issues, mathematics, nothing special.” Miriam’s pattern was similar to Lan’s and Kyung’s, although she used less of both, *critiquing positive* and *critiquing negative*. Quite different was the ongoing assessment by Bilal, who engaged only in *critiquing positive* regarding the article while reading. He would make comments like, “Okay, very nice.” Figure 5 and Table 5 show the number of times the two evaluative strategies were used.
**Figure 5.** Visual representation of evaluative strategies.

### Table 5

**Evaluative Strategies Usage Count**

<table>
<thead>
<tr>
<th>Participant</th>
<th>Critiquing positive/noting agreement</th>
<th>Critiquing negative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lan</td>
<td>19</td>
<td>42</td>
</tr>
<tr>
<td>Myriam</td>
<td>6</td>
<td>18</td>
</tr>
<tr>
<td>Bilal</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>Kyung</td>
<td>8</td>
<td>34</td>
</tr>
</tbody>
</table>

**Sociorhetorical/disciplinary strategies.** All four students used some type of sociorhetorical/disciplinary strategy, primarily identifying authors of article by their names or referring to authors of the article. Lan, Bilal, and Kyung also used the strategy relating to other disciplinary authors, when they mentioned other authors in the discipline. For example, Kyung said, “Media representations, various discourses, gender, Western imperialism, Said.” Lan was particularly focused on the authors of the article, specifically referring to them by name, “Hmm, Beach and Myers, inquiry-based instruction.” She would also relate topics in the article to
other disciplinary authors, “I didn’t know Alvermann worked with digital literacy.” She and
Myriam also tried to get a paradigmatic sense of the topic, with Myriam stating: “This reminds
me of social constructivism.” Although Bilal and Kyung did not employ as many sociorhetorical
strategies, Kyung did criticize the specific genre of the article, saying, “This is more of an essay
or column; this is not an article.” Figure 6 and Table 6 show patterns for use of
sociorhetorical/disciplinary strategies.

![Figure 6. Visual representation of sociorhetorical/disciplinary strategies.](image)

### Table 6

<table>
<thead>
<tr>
<th>Participant</th>
<th>Identifying text source</th>
<th>Identifying authors of article by their names</th>
<th>Referring to article authors</th>
<th>Relating to other disciplinary authors</th>
<th>Determining genre</th>
<th>Determining paradigm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lan</td>
<td>1</td>
<td>2</td>
<td>14</td>
<td>6</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>Myriam</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Bilal</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Kyung</td>
<td>1</td>
<td>1</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>0</td>
</tr>
</tbody>
</table>
Strategies of the Individual Students

This section goes into more detail about the strategy use by each participant, including examples and rationale tied to their educational and cultural backgrounds.

Lan. From when she first began reading the article, Lan wanted to know about the authors. It was important for her to find a connection to the author and a connection between the author and the content. More than the other participants, she made use of sociorhetorical and disciplinary strategies, centering on the authors of the article. This was reflected in her comment, “Hmm, all right. So the authors, Myers and Beach, I don’t know them.” When she was a child, Lan liked to read storybooks about martial arts. She wanted to study some type of martial art, so began reading martial arts books translated into Vietnamese, but written by Chinese authors. She said she learned the names of these authors because she associated the authors with the subject. She also questioned critically why the article did not list the interests or provide short biographies of the authors, “What else? Why don't they list them, the interests or the field of the author, there's just the name and university and the email. It doesn't help much. They should have some department or something like that.”

She said that she approached articles differently depending on the purpose or assignment and decided that because this was an academic article, she needed to decide how she was going to approach the reading. For example, she remarked, “All right, I'm going to read the abstract first. I need to know what it is so it can help me to read faster.”

Lan, more than anyone else, made connections back to her previous teaching experiences in Vietnam. She had definite opinions about Vietnam’s educational system and was especially interested in the article’s description of an American high school educational
experience. One of her comments was “We have a syllabus the teacher has to cover, even having them watch 30-minute video, it would be luxury.”

Hardships during the Vietnam War affected Lan’s childhood and education. Her family’s lack of money for materials or supplies affected her way of acquiring knowledge. Much of her knowledge had to be constructed out of her own experiences. When Lan was in elementary and secondary school in Vietnam, her father taught her strategies for learning vocabulary by determining meaning from context or content, never relying on a dictionary or other meaning source. Partially, this was because her family experienced financial hardship after the Vietnam War and her father had to sell most of his books to buy food for the family. As Lan’s interest in learning English grew, her father regretted that he had sold his books, especially because as an English teacher, he had a considerable number of English books. Lan would learn a word, and know the meaning but not how to use it. This method of building vocabulary has continued with her current doctoral studies in that she used background knowledge and experiences to translate a word, rather than use a reference source or contextual clues.

With constructivism, in Vietnam I have no chance to look outside and all of the people there who don’t have opportunity to go abroad . . . They are confined by communist ideology, especially those who are working in the public sectors. If you teach at a public school or work for the public company, they also have a short training for teaching ideology (like, Ho Chi Minh ideology, Buddhism, Marxism.) I feel like there’s no help with learning one’s own philosophy.

This may also be one of the reasons why Lan was the only participant not to use another reference source to clarify meaning. In fact, she used none of the support strategies that the other participants employed. Her childhood and parental experiences influenced her reliance on contextual clues. While thinking aloud, she did not use a dictionary, either paper or electronic, and also did not go to any websites to look up definitions or clarifications, even

36
though she had the opportunity. When I asked her about possibly clicking on links, she said she
would prefer it if the links were mouseovers (i.e., hoverboxes, tooltips) as opposed to
information opening up in a new window so that she would not have to click back to the article
or become lost in another webpage.

Lan did acknowledge that the use of technology in the classroom could be valuable,
especially for reading, because a student would be able to search various websites for
assistance. When she spoke about this topic during the class *Politics of Literacy*, she initiated a
discussion about the increased cognitive load involved with technology use and pointed out
that teachers would need more professional technology development.

Lan’s classes during her master’s and doctoral programs encouraged her to relate to
authors and to study reference lists for connections to her prior reading. She was the only
participant to scrutinize the reference list and to question why authors within a specialization
were not in the article’s reference list: “There should be some applied linguistics people in the
reference.” It was important for her to look at the references when doing research. She
explained: “Because when I start something new, I don’t know, I have no ideas as to who the
iconic person is."

As she entered high school, teachers assigned books to read without acknowledging
authors so Lan would remember titles but not authors. She was also never taught to take
notice of reference lists. This changed when she entered the master’s program in Hawai‘i. She
learned to pay attention to authors, and to cite researchers when writing. It became important
for Lan to note connections between authors and their philosophical and theoretical
orientations.
The people never mention the author when they assign student to read a book so most of the time I just remember the title of the book without knowing the author. High school, I don’t know the name of the textbook, but university, they assign book for reading, but never look at who is the author of the book and never look at the reference list.

Lan also spoke about this topic during the next class meeting of her class, *Politics of Literacy*. As well as not talking about authors, she said that Vietnamese public school students do not acknowledge authors, nor do they create citations or reference lists when writing. She explained that there is a lot of plagiarism because this issue is not addressed in secondary schools. However, as she began her master’s studies in Hawai’i, she learned also to focus on the author, and as a doctoral student, she realized the importance of the relationship between the authors’ philosophical and theoretical considerations. Whenever Lan began a new doctoral class, she looked at the reference list and syllabus to see how the topics and authors were connected.

Lan also stressed that it was important to use only English when reading English, and only use English when teaching English as a second or foreign language.

I think that’s a bad idea if you want to teach student in their native language because the language is more close to the culture of that language than the context. If you want to teach Vietnamese culture, I can show videos, or create some posters, you can create the Vietnamese context the same as in your classroom. I don’t use Vietnamese language to talk about American culture, because sometimes, I don’t have the Vietnamese equivalent.

Although this immersion approach is not advocated by all, Lan believed that it is important for language learners to be immersed in the target language and for teachers to use that language, including its cultural aspects, as the vehicle for learning (Cummins, 1998).

*Myriam*. Myriam made use of all three global strategies; however, she referred to the abstract only once. To determine the overall sense of the article, she took advantage of the
digital capabilities of the article by scrolling forward, saying, “The social worlds curriculum. The world is the curriculum. Okay, that makes sense.” She also used problem-solving strategies the least out of the four participants, although she did employ the questioning strategy frequently, “But how does it look like—inquiry based English instruction? Okay, I’ll keep reading.”

Myriam also did not use many support strategies. She did, however, employ a few web-based tools, such as Google and Wikipedia, although with less frequency than Bilal and Kyung. She was critical of the article’s purpose, and continued this criticism throughout the article, using the evaluative strategy, “I don’t see where it’s critical literacy so far.” Myriam questioned why the authors assumed that all readers would have sufficient background knowledge to understand key concepts in the article. For example, she was frustrated because she had not heard of the book Fahrenheit 451 by Ray Bradbury; this novel was a focus in the article. “I thought maybe it’s a book. I think it’s a book. I don’t like it when I don’t know, when the authors take for granted that I’m going to know what’s this.”

Perhaps confusion while reading the article and frustration with broken links led to her avoidance behavior of playing games on her cell phone, a common behavior among adolescents and young people (Lenhart, Ling, Campbell, & Purcell, 2010). She would also skim through sections quickly, using a lot of body language and words to show discontent and confusion. At one point, when the links didn’t work, head in hand, she said, “Why? How is this related to utopia? Boring, boring.” When reading articles such as this one, she read the abstract first and then the discussion, and then she read the in-between parts carefully only if careful reading was a requirement. In addition, Myriam was one of only two participants who tried to capture
a paradigmatic sense of the article, evident when she said, “This reminds me of social constructivism.”

Myriam was the only participant to use the support strategy of using a translation tool, that strategy that had been noted so frequently in prior research, (e.g., Akyel & Erçetin, 2009; Genc, 2011; Huang et al., 2009). She employed her heritage language when a particular term or concept caused confusion, and made use of multiple resources to do so. During the discourse-based interview, she said:

If I have the chance to read something in Arabic, I definitely would prefer to understand first in Arabic, then read it in English. It would make more sense to me in Arabic, and will ease the process for me in English a lot.

One of her strategies, which she used with respect to the term hypermedia, involved support tools. She typed the phrase, “What is hypermedia?” in Wikipedia in her heritage language and then went to the Wikipedia English webpage for more clarification, and then went back to her heritage language webpage.

I’d rather just read things in Arabic first. Then I go to the English version and match the words, match the meaning for me, and then if there is something I didn’t understand, probably, in English, I went back to Arabic to make sure. Usually, the Arabic version is limited; they don’t go through much details like the English version in Wikipedia. So I might not find what I was looking for.

Pre-school and kindergarten education is offered in Saudi Arabia but is not required. However, elementary education, for students who are ages six to twelve, is compulsory. Students can then progress to intermediate and secondary school, up to twelfth grade. Although public or private schools use the same curriculum (Rugh, 2002), most parents place their children in private schools because of earlier English instruction and more resources. Though Myriam began learning spoken English in kindergarten, she felt that the Saudi
educational system never taught her how to write academically. She did not learn to write essays, and, like other students there, she read only short paragraphs for comprehension instruction. During the class discussion in the Politics of Literacy class, Myriam made a point that Lan had also made about plagiarism in writing. Concern about plagiarism and proper citation use are subjects also not addressed in Saudi secondary schools. As she began to use English only for her graduate academic work, she became more aware of the importance of citations and the avoidance of plagiarism.

*Bilal.* Bilal made extensive use of three main categories—problem-solving strategies, support strategies, and metacognitive strategies. His predominant problem-solving strategy was *reading segment aloud verbatim.* He said this helped him focus, as did the use of the verbal marker “okay.” He would read each paragraph word-for-word, moving linearly and deliberately through the article, pause, and then paraphrase or summarize, as in “Okay, constructing critical literacy practices through technology tools and inquiry” and “In the study of literature, students focus on inferring elements of character, plot, theme, symbolism, and so on. Okay.” He illustrated this strategy by saying the following when I asked him about his approach:

> Because I wanted to read all the article. Of course, there are some articles which you can get the central idea from the abstract and then you skim, and look at the headings, and where that is very important points. You can read that but I usually read the whole article. I want to know his or her point, the writer’s point of view about the topic, the arguments and everything, and also about the style, because, being an English language learner, especially the APA style things, they were too difficult for me when I came because I was used to British English, so I read all the things in articles, especially one that is near to my area of interest.

Bilal was also the only participant to make use of the support strategy of notetaking and he explained why he did:
Generally what I do when I complete an article, I try to write in a very short way, in my own words what I learned from this article, and I try to pose some questions. If I don’t agree with the writer, that is the way, maybe I’m wrong or maybe the writer is right, but I pose questions if I disagree. Maybe it’s the lack of my knowledge or the setting is different or the background or the experiences.

Bilal described his method of notetaking in the following way: “I noted the main points or key phrase/sentence of paragraphs—critiqued whether authors are successful in their purpose or not—my agreement or disagreement with the author.” For example, as he was reading a paragraph in the article about cultural practices, character development, and constructing meaning while teaching, he wrote the notes: “Connecting teaching. So character development, symbolism. Teaching.” He took one page of notes while reading the article, particularly noting important vocabulary, but also wrote two pages of notes after he finished reading, summarizing and discussing what he thought were salient points in the article. For example, he wrote: “The article is partially successful in achieving the purpose. Integration of these technologies into English curriculum and teacher education have been recommended by the authors. However, they have not proposed the ‘how.’”

This was directly related to his use of the strategy of focusing on meaning of a single word or phrase as well as the strategy of highlighting, which he said helped him focus. He explained: “That is to get my concentration. Yeah, and to stop on that and put all my concentration on that. That is a practice which I’ve been doing and that point comes to my mind by doing that.” Bilal also used highlighting to take advantage of the “copy and paste” feature of computers, using the cursor to highlight terms, and then copy and paste these terms into Google or Wikipedia to obtain more information.
Bilal’s primary reference as he was learning English in Pakistan was the Pakistani
for students who wanted to learn written English because it taught written English word by
word, with instructions for constructing sentences and transitioning between paragraphs.
However, this manual focused on British English, and Bilal had trouble with writing and reading
American English. This led to his reading articles out loud and taking notes to provide extra
focus. During the post-reading interview, Bilal disclosed that he would use only English while
reading academic English—something that Lan and Kyung also did. Bilal’s reasoning was as
follows: “Because there is difference in both of the languages, and, I’ve been practicing for very
early time, and I believe that translation you cannot do well. And if you think in the same
language, it’s the best way.”

During the *Politics of Literacy* class, he mentioned how his writing had improved
significantly once he began his doctoral classes. Increased use of technology, especially Google
and Microsoft Word, had facilitated his editing. He appreciated the fact that word processing
programs had freed him from the constraints of handwriting.

Although Bilal did not access websites as much as Kyung did, he did select the Google
website eight times. He always went to Google first, and then selected links from the Google
webpage to search Wikipedia, YouTube, and other websites. For example, he went to Google
and then to Wikipedia to search for information about the terms *asynchrony* and *common core*.
Bilal said he does not prefer Wikipedia and would rather search for scholarly articles to gather
more information. However, if after reading the article and searching print or online
dictionaries, he was still confused, he would generally use Wikipedia. He explained that he
would initially search Google for an explanation of an unfamiliar term and then see if “someone has written an article on this or expanded in detail from a technology point of view.”

He was extremely focused on his education in the United States because it led to his larger goal of improving education in Pakistan. He realized there were big gaps between theory and practice and between policy and implementation, and he wanted to use his American educational experiences to reduce those gaps. Although he acknowledged the many political and regional problems in Pakistan, he felt that improving the educational curriculum, especially in science and technology could help.

**Kyung.** Kyung’s immediate interest was in determining the purpose and layout of the article, and that continued as he read through the article. He seemed almost anxious as he began reading, scanning the abstract for critical points and, in particular, applying the strategy *scrolling forward*, using the cursor to move forward through the online article. As he read, he quickly began using the strategy *critiquing negative*, to say, “Abstract. Current issues, mathematics, nothing special.” Unlike Bilal, who systematically read through the article linearly, Kyung continually used the strategies *scrolling forward* and *scrolling backward* to check the length of the article and other times looking for clarification about particular terms.

However, Kyung primarily used problem-solving strategies when reading the article. His tendency was *reading segment aloud—not verbatim but only selected words in the segment*, focusing many times on a single word or phrase, “Multimedia, multicultural world, literacy, culture, citizenship, reframe purpose, experience.” More than the other three, he used this *voice pointing* approach, noting major terminology, such as *thought control, critical literacy,*
collaborative inquiry software, and social worlds curriculum, as well as forms of media mentioned by the authors, such as “Okay, video editing hardware.”

Of all four readers, Kyung was also the most frustrated by the broken links, and he tried different times to open the various links provided by the authors, employing the problem-solving strategy of *opening (or attempting to open) link in article*. For example, Kyung clicked on a link for the author, Jamie Myers, which took him to another webpage with the author’s email address. To aid in his searching, he also used the other problem-solving strategy, *scrolling backward*. If a link did not open, he used the cursor to move backwards through the article, searching again for links that might open, or that he might have previously overlooked.

If Kyung needed more information about a subject, he did not hesitate to go other websites for clarification, using all four web-based support strategies: *using web-based tool, Google; using web-based tool, Wikipedia; using web-based tool, YouTube; and using a web-based tool other than those specified with the other codes*. For example, when he wanted more clarification about “media authoring,” he went to a Prezi, a type of presentation software, which in this case included information about specific authoring tools, such as flash animations. Whereas the other participants did not try to open up further links within the article after the first ones did not work, Kyung kept trying to open the broken hyperlinks within the article and tried different methods. For instance, at one point, he highlighted and copied the term *Fahrenheit 451*, then pasted the term in Google to find out the meaning. In this instance, Kyung highlighted the term because it was easier to copy and paste into Google than to try repeatedly to open the link. However, when he temporarily highlighted passages other times, he said, “That is my habitual thing. When I’m bored. It’s just meaningless and a symbol of guys’
boredom.” Normally, he would print out an article and use a highlighter or sticky notes to underscore interesting points.

Kyung seemed to be the most technologically proficient of all four; nonetheless, he did not like to read or annotate articles online. He explained, “The reason why I don’t like the online article is that when you go back to the article, you don’t really remember what you did. If you highlight it, once you print it out, it’s going to be black and white, and I like to use different colors for pros and cons.

Although Kyung was reading this article online, he said translator websites make reading too easy, and in his opinion, the translations are inaccurate. He would not mind footnotes or mouseovers in his heritage language, but otherwise, he tried to read everything in English. This was similar to Lan and Bilal who would not access their heritage language when reading in English. He would prefer the article to be in print form and explained, “So when I read . . . I try my best not to even open my laptop, just try to close it and read it. Otherwise, it’s going to take a lot more time.” He admitted that he could become distracted by links within an article. He was referring to a process called “wayfinding,” by Aust et al. (1993), which refers to the confusion a reader feels when he or she are lost in hyperspace. This confusion can be compounded because some readers choose hyper-references not because they are useful, but because they are interesting (Sakar & Erçetin, 2005). Kyung was confused about the exact pronunciation of the word “collage” but became distracted after using two support strategies using web-based tool, Wikipedia and using web-based tool, YouTube, when he was listening to pronunciations of “collage.”
As Kyung was speaking during the Politics of Literacy class, the other class members agreed with his point that classroom technology can help students create interesting and original presentations. However, while acknowledging that technology can facilitate a student’s presentation, he pointed out that if there is something wrong, such as broken links, the content is distracting. He would like to have seen the student presentations from the Beach and Myers’ article (2004) and to judge the students’ critical thinking skills in their presentations.

From the very beginning, Kyung was critical of the article. Not only did he point out the broken links, (“All the important crucial links don’t work”), but he also criticized the purpose and genre of the article. Using a combination of three strategies—the global strategy using abstract, the evaluative strategy critiquing negative, and the sociorhetorical/disciplinary strategy determining genre—he stated during the think-aloud reading that he did not think this was an academic article: “Huh, this is more of an essay or column; this is not an article.” During the post-reading interview, Kyung said,

This is not an academic article at all. I don’t really know this journal here but this is more of an essay or column or newspaper article. You have to deal with the copyright issues. I understand that but without looking at the examples, it's hard to imagine the students' work. It's good to show how these students made these.

Kyung’s home district of Gangnam in South Korea has been considered the center of education in South Korea (Jo, 2006; Mikio, 2008), and Kyung was raised in a highly competitive academic environment. Grades and success were the most important. He spoke of “education fever,” which is a common term not only in the Gangnam district but also throughout South Korea (Park, 2009). Korean families stress education as a means to success in life. Kyung believed this could lead to too much emphasis on education and also low self-esteem for many Koreans because of excessive formal education. As he said, “Even janitors have bachelor’s
degrees.” This highly competitive atmosphere may have fostered his more critical, analytical behavior and mannerisms. Kyung was extremely critical of the article, pointing to its methodology and writing style as he used the evaluative strategy, critiquing negative, to critique phrases in the article. For example, he said: “Who's going to believe this then? They don't talk about the misunderstanding of critical points here,” when reading the sentence from the article: “We encourage teachers to learn how to integrate these new technology tools for representing life worlds into the study of ideas and issues represented through text.” He also used this strategy to critique technology issues in the article, saying: “At least 4 gigabytes, plenty of memory for video editing. Ah really? Four gigabytes, do they need this much, 4 gigabytes, for a video file?” when reading the phrase: “Either Macintosh or PC computers can support video editing software, and most recent computers with hard drives of at least 4 gigabytes have plenty of memory for video editing.” His critical behavior extended to his family’s language proficiency and Koreans’ language proficiency in general, as when he said, “Dad speaks some English, Japanese, and Chinese, but his Korean is not so good. I have only met a couple of perfect Korean speakers in my life.”

Conclusion

This study explored ELL doctoral students’ use of various categories of cognitive strategies: (1) global, (2) problem-solving, (3) support, (4) metacognitive, (5) evaluative, and (6) sociorhetorical. Participants in this study primarily used problem-solving strategies. But in most cases, they also made frequent use of metacognitive and evaluative strategies. Previous studies with undergraduates had also found a preponderance of problem-solving strategies, particularly rereading, paraphrasing, and summarizing (Block, 1986; Carrell, 1989; McNeil, 2010;
Salataci & Akyel, 2002; Zhang, 2001). Other researchers had found that with higher English proficiency, there was an increased use of global and metacognitive strategies (Huang et al., 2008)—a finding supported also by this study.

One major way in which this study differed from prior research was with respect to readers’ use of support tools. Specifically, Akyel and Erçetin (2009) and Genc (2011) found that some ELLs relied considerably on the support strategy using a translation tool, either clicking on an online dictionary or using a hyper-gloss when encountering confusing vocabulary. However, only one of the participants in this study used a translation tool. It appeared that Myriam, in her desire to read the article quickly, used Google and Wikipedia to find a brief translation of certain words or phrases. The other three said they realized it was important to use English while reading English, especially academic English. Lan and Bilal did not have many resources when they were studying English; so they learned not to depend on dictionaries and other modern accommodations such as translation webpages. Kyung said clicking on a link or other webpage for translation was distracting and slowed him down.

Unlike almost all previous research, this study also looked at sociorhetorical strategies identifying text source, identifying authors of article by their names, referring to authors of article, relating to other disciplinary authors, determining genre, and determining paradigm. Because these students were reading an article that was contextualized within an academic course, it was important to see if they, as doctoral students, were aware of these strategies. Their discussions indicated that they had not been made aware of sociorhetorical strategies in their previous educational settings in their home countries. This can be an issue in academic research as students may not be aware of the plagiarism issue and either do not know how to
paraphrase or cite authors, or as in the case of Bilal, did not paraphrase because that was dishonoring the original author.

These participants were clearly individuals who had different cultural and linguistic backgrounds, but nevertheless they employed some similar strategies with similar justifications. All used the strategies reading segment aloud verbatim and reading segment aloud – not verbatim. These readers attended to selected words they considered to be important in the article and said these strategies helped with comprehension and focus. In particular, Kyung used voice pointing to read certain words and phrases outloud. In contrast, Bilal read entire paragraphs outloud as a way of focusing his attention. All four used the cursor or mouse to take advantage of one of the features of online reading and used the global strategy scrolling forward, to get a sense of the text and the problem-solving strategy scrolling backward to help with their understanding of particular portions. All four combined two metacognitive and evaluative strategies, affirming one’s understanding and critiquing positive/noting agreement, as they understood the text and affirmed their comprehension. Use of the signal word “okay” could indicate understanding as well as noting agreement.

Although all four of these participants were students in the same doctoral course and reading the same contextualized article, some aspects of their approaches and strategy use for comprehension seemed to be related in interesting ways to their educational and cultural backgrounds. Their heritage languages were typologically different; however, any influence from their first language appeared to be overwhelmed by their individuality and perhaps partly by their societal cultures. Previous researchers had found that learning styles in an online environment are distinctive for different ethnicities (Barron, 2002; Harris, 2005; Mestre &
Woodard, 2006; Wang, 2006). However, those studies were not contextualized within the same doctoral course with students from diverse heritage languages.

The influence of the participants’ educational background was clearly shown with the use of the evaluative strategy. *Critiquing negative* was employed by two of the participants, Lan and Kyung, who made much use of this strategy. In contrast, Myriam had little critical commentary, and Bilal did not make any negative statements at all. Lan’s negative critiquing was primarily related to her educational background as she connected this to the problem-solving strategy of *relating to own experience/adding to content of text*, saying, for instance, “but it’s still far away from reality. We don’t have much time to have them watch video.” Kyung’s educational upbringing in the Gangnam district in South Korea, known for its high standards of education, may have fostered his critical nature as he said, “So what’s the point? Making these files makes you more critical?”

There is a need for studies that focus on the cognitive process but give attention to social, sociocultural, distributed, and embodied aspects. At the beginning of this article, I have described the sociocultural perspective that guided this work. Language use is social as well as cognitive; thus, it is important for researchers to consider how and why language is used (Hymes, 1962; Saville-Troike, 2003). The background knowledge of ELLs affects their online reading comprehension as they navigate online social media, since interpretation of a text is highly associated with one’s prior experiences and expectations (R. C. Anderson, 1977; R. C. Anderson et al., 1977).

Just as with print text, negotiating text online necessitates the use of such cognitive strategies as questioning, summarizing, monitoring of comprehension, and other strategies
such as skimming and reading outloud (Akyel & Erçetin, 2009). However, with 21st century literacies, readers must also make use of new resource-oriented strategies, such as navigating to online dictionaries and glossaries and making use of hypertext links (Chun, 2001; McKnight et al., 1992). Although participants in this study made use of the functionality of the online article, they would have preferred a print copy. Other researchers have also found a preference for print in some contexts (Chang, 1997; Poole, 2008-09; Ramli et al., 2011). Online reading can contribute to learning and comprehension but the online environment can also lead to disorientation and comprehension problems (Abanomey, 2013; Mangen, Walgermo, & Brønnick, 2013; Mesgar et al., 2012; Ramli et al., 2011).

Attention must also go to social and sociocultural factors, as all readers draw from their prior knowledge and experience to make sense of the text (R. C. Anderson, 1977; Santori, 2008; Smagorinsky, 2007). As Smagorinsky (2007) pointed out,

Imposing one cultural set of beliefs and practices may contribute to the construction of negative behavioral and academic records for students from nonmainstream cultures, based not on their ability to engage with the curriculum but on their distance from the central culture’s assumptions about what counts as acceptable behavior. (p. 64).

As understanding and comprehension develops from the cultural capital students bring, individual students’ interpretative and sense-making strategies become even more important (Aukerman, 2013; Dyson, 2003; Smagorinsky, 2001). General kinds of sociocultural factors are important, but individual ways of living in a sociocultural context are also important. These participants should be treated as individuals who were influenced by their educationa and cultural backgrounds.

This study has shown some ways in which cognitive processes are revealed in reading and also ways in which both cognitive strategies and social elements are inseparable in the
process of comprehending text (cf. R. C. Anderson et al., 1977; Brown et al., 1989; Hartman et al., 2010). The Influence from the four participants’ cultural and educational backgrounds on their reading aptly supports Atkinson’s (2002) claim cited earlier: that language is an individual’s “set of interactively constructed social tools, practices, and experiences . . . held jointly with the social world” (p. 528) and that cognitive acts “do not start in the head, although the head is certainly involved, nor do they end in the head, because the output is social action” (p. 531).

Although thinking-aloud has well-known limitations, it also has much potential for investigating sociocognitive strategies, such as readers’ use of technological tools and social media, even across linguistic boundaries. Much of the prior think-aloud research has lacked attention to social and sociocultural factors, and research using think-alouds with second-language learners has typically employed decontextualized texts as reading materials. By using a text contextualized not only in a class but also in participants’ own discipline, I was able to discern some sophisticated strategies that have not been shown in the prior work and show that, despite continuing controversy, thinking aloud continues to be a valuable approach.

Increasing use of technology, digital text, and hypertext means that more students, including ELLs, will be encountering online reading material. As more ELLs enroll in college-level courses, they will encounter more online academic text and will need strategies to negotiate these texts. A small-scaled case study like this provides glimpses into the cognitive and metacognitive strategies and processes ELLs may use when reading online (cf. Aljabre, 2012; Jimenez et al., 1995). Although this study is admittedly not generalizable, the explanatory depth, richness, and complexity of the findings should provide new insights for instructors of
ELLs and other students encountering online text. Increasing globalization and expanding use of the Internet mean that online text is readily accessible and is in multiple languages, including English. Although this study focused on ELL students’ reading of online text in English, the findings regarding their strategies should have some relevance to the online reading of other second languages.

References


Kolikant, Y. B-D. (2010). Digital natives, better learners? Students’ beliefs about how the Internet influenced their ability to learn. *Computers in Human Behavior, 26*, 1384-1391.


Sanchez, B. Y. (2009). The effects of rhetorical reading interventions on the reading and writing performances of students enrolled in college composition classes (Unpublished doctoral dissertation). Texas A&M University, College Station, TX.


APPENDIX A

DATA TABLE SHOWING PATTERNS ACROSS THE STUDENTS
<table>
<thead>
<tr>
<th>Type of Strategy</th>
<th>Participant Lan</th>
<th>Participant Myriam</th>
<th>Participant Bilal</th>
<th>Participant Kyung</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GLOBAL STRATEGIES</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sg (determining general topic)</td>
<td>3</td>
<td>4</td>
<td>2</td>
<td>2</td>
<td>11</td>
</tr>
<tr>
<td>Sa (using abstract)</td>
<td>4</td>
<td>1</td>
<td>5</td>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td>Sf (scrolling forward)</td>
<td>5</td>
<td>4</td>
<td>1</td>
<td>23</td>
<td>33</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>12</td>
<td>9</td>
<td>8</td>
<td>35</td>
<td>64</td>
</tr>
<tr>
<td><strong>PROBLEM-SOLVING STRATEGIES</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sl (opening (or attempting to open) link in article)</td>
<td>5</td>
<td>9</td>
<td>7</td>
<td>25</td>
<td>46</td>
</tr>
<tr>
<td>St (focusing on meaning of a single word or phrase)</td>
<td>24</td>
<td>6</td>
<td>17</td>
<td>26</td>
<td>73</td>
</tr>
<tr>
<td>Sr (rereading)</td>
<td>1</td>
<td>0</td>
<td>4</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>Sp (paraphrasing / summarizing)</td>
<td>18</td>
<td>7</td>
<td>18</td>
<td>8</td>
<td>51</td>
</tr>
<tr>
<td>So (reading segment aloud verbatim)</td>
<td>7</td>
<td>1</td>
<td>74</td>
<td>2</td>
<td>84</td>
</tr>
<tr>
<td>So (reading segment aloud--not verbatim but only selected words in the segment)</td>
<td>14</td>
<td>3</td>
<td>18</td>
<td>70</td>
<td>105</td>
</tr>
<tr>
<td>Sq (questioning)</td>
<td>27</td>
<td>15</td>
<td>14</td>
<td>33</td>
<td>89</td>
</tr>
<tr>
<td>Sb (scrolling backward)</td>
<td>6</td>
<td>3</td>
<td>5</td>
<td>25</td>
<td>39</td>
</tr>
<tr>
<td>So (relating to own experience/adding to content of text)</td>
<td>44</td>
<td>9</td>
<td>0</td>
<td>1</td>
<td>54</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>146</td>
<td>53</td>
<td>157</td>
<td>190</td>
<td>546</td>
</tr>
<tr>
<td><strong>SUPPORT STRATEGIES</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sl (using a translation tool)</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Sh (highlighting)</td>
<td>0</td>
<td>2</td>
<td>24</td>
<td>8</td>
<td>34</td>
</tr>
<tr>
<td>Sn (notetaking)</td>
<td>0</td>
<td>0</td>
<td>11</td>
<td>0</td>
<td>11</td>
</tr>
<tr>
<td>Sw (using web-based tool, Google)</td>
<td>0</td>
<td>3</td>
<td>8</td>
<td>10</td>
<td>21</td>
</tr>
<tr>
<td>Sw (using web-based tool, Wikipedia)</td>
<td>0</td>
<td>2</td>
<td>6</td>
<td>8</td>
<td>16</td>
</tr>
<tr>
<td>Sw (using web-based tool, YouTube)</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Strategy Description</td>
<td>Mu</td>
<td>ML</td>
<td>Total</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------------------------------------------------------------------------------------</td>
<td>-----</td>
<td>-----</td>
<td>---------</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>METACOGNITIVE STRATEGIES</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sw (using a web-based tool other than those specified with the other codes)</td>
<td>0</td>
<td>2</td>
<td>6</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>0</td>
<td>12</td>
<td>52</td>
<td>35</td>
<td>99</td>
</tr>
<tr>
<td><strong>EVALUATIVE STRATEGIES</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mu (affirming one’s understanding)</td>
<td>3</td>
<td>12</td>
<td>50</td>
<td>42</td>
<td>107</td>
</tr>
<tr>
<td>Mi (indicating lack of understanding)</td>
<td>14</td>
<td>10</td>
<td>1</td>
<td>6</td>
<td>31</td>
</tr>
<tr>
<td>Total</td>
<td>17</td>
<td>22</td>
<td>51</td>
<td>48</td>
<td>138</td>
</tr>
<tr>
<td><strong>SOCIORHETORICAL/DISCIPLINARY STRATEGIES</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ep (critiquing positive/noting agreement)</td>
<td>19</td>
<td>6</td>
<td>5</td>
<td>8</td>
<td>38</td>
</tr>
<tr>
<td>En (critiquing negative)</td>
<td>42</td>
<td>18</td>
<td>0</td>
<td>34</td>
<td>94</td>
</tr>
<tr>
<td>Total</td>
<td>61</td>
<td>24</td>
<td>5</td>
<td>42</td>
<td>132</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>17</td>
<td>22</td>
<td>51</td>
<td>48</td>
<td>138</td>
</tr>
</tbody>
</table>

Note: Numbers indicate number of times strategy was utilized.
APPENDIX B

THE PROCESS OF UNITIZING
A social worlds curriculum focuses the study of language, literature, media, and culture on the central issue of how people construct meaning from experience. Meanings about the words people use, the objects we produce, and the activities in which we engage, are negotiated through social interaction with others in multiple, overlapping, and often contesting communities. Through our participation in these communities, or social worlds, we develop skills in using particular objects, or tools, or texts to accomplish the activities valued within these social worlds. In English language arts classrooms, these skills are often identified as reading, writing, speaking, listening, and viewing, with more specific subskills like summarizing, using transitions, intonation, note taking, and identifying propaganda techniques. In the study of literature, students focus on inferring elements of character, plot, theme, symbolism, and so on.

Beach & Myers, (2004). page 258, paragraph 2

| A14 | Meaning from experience. Yeah, so this author is more about constructivism. |
| A15 | Well, I think in the English language arts classroom, these skills often identify reading, speaking, listening, more specific subskills like summarizing, uh, hmm, study of literature focus on inferring. |
| A16 | I don’t agree with this idea. |
| A17 | Huh, in study of literature, student focus on inference. |
| A18 | Unh-unh *(shakes head)*. But I teach in this way. |
| A19 | They just overgeneralize - reading, writing, speaking, listening, and viewing. Hmph. |
| A20 | When I taught, I didn’t teach them inference skill. Hmph. Why do they say that? |
| A21 | Hmph *(shakes head)*. These people not belong to applied linguistics. |
APPENDIX C

GUIDE TO THE PROTOCOL ANALYSIS EXAMPLES
<table>
<thead>
<tr>
<th>Category</th>
<th>Explanation</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Global strategies</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| **Sg (determining general topic)** | Participant mentions (or summarizes) something from the article regarding its general topic or focus. | • So basically constructing critical literacy practice through technology tools, video, video.  
• I thought the title had something about social critical literacy. Or a focus on constructing. |
| **Sa (using abstract)**       | Participant reads from the abstract or uses the abstract to gain information. | • So, I'm going to read the abstract first. I need to know what it is so it can help me to read faster.  
• Critical consciousness, critical consciousness, community agency, community agency. *Note: This utterance would also be coded as St (focusing on meaning of a single word or phrase) and also MI (indicating lack of understanding).* |
| **Problem-solving strategies** |                                                                             |                                                                                                                                           |
| **So (relating to own experience/adding to content of text)** | Participant makes a comment related to his or her own experience. | • I just wish my students had the chance to watch the video and other Internet things in their past.  
• I remember when I did a video for one of my classes. |
| **St (focusing on meaning of a single word or phrase)** | Participant focuses on a selected word or single phrase from the article and considers its meaning. | • Hyperlinked knowledge base. *Note: This utterance was coded as St (focusing on meaning of a single word or phrase) because the participant focused only on this phrase from the paragraph and then made* |
|   |   | comments about the phrase.  
|   |   | • Character development.  
|   |   | Note: This utterance would also be coded as notetaking because the participant took notes on the connection between character development and teaching.  
| Sr (rereading) | Participant rereads part of the text. | • ...the learning curve to be very short with students and long with teachers. Note: This utterance would also be coded as Sh (highlighting) and So\(^v\) (reading segment aloud verbatim) because the participant highlighted the part of the text that he had just reread verbatim.  
| Sl (opening (or attempting to open) link in article) | Participant opens or attempts to open a link within the article. | • Let's open this link.  
|   |   | (Participant clicked on link that said “About” on CITE article front page.)  
|   |   | • Participant clicked on link http://www.ed.psu.edu/k-12/socialworlds.  
| Sp (paraphrasing / summarizing) | Participant paraphrases or summarizes text from article. For the most part, he or she is using own wording, not just reading the text. | • In study of literature, students focus on inference.  
|   |   | • So, it’s all about how technology provides to promote critical literacy. Note: This utterance was also coded as Sa (using abstract) because the participant was reading the abstract at that point.  

<table>
<thead>
<tr>
<th>Action</th>
<th>Description</th>
<th>Notes</th>
</tr>
</thead>
</table>
| So⁴ (reading segment aloud verbatim) | Participant orally reads text verbatim from article or other webpage such as Google or a Prezi. | • Beliefs about literacy, technology, and pedagogy.  
• Constructing critical literacy practices through technology tools and inquiry. |
| So⁵ (reading segment aloud-not verbatim but only selected words in the segment) | Participant verbalizes a series of selected words or phrases when moving through a portion of the article. | • . . .The coolest. . . was the video. . . and the least was the essay. . .  
• . . . any story develops and concludes, social worlds emerge, dissolve, retreat, overlap, all through the symbolic meaning. . . constructions. . . |
| Sf (scrolling forward) | Participant uses cursor, mouse or Trackpad to scroll forward through the article (or other webpage). | |
| Sb (scrolling backward) | Participant uses cursor, mouse or Trackpad to scroll backward through the article (or other webpage). | |
| Sq (questioning) | This is a real question that the person has about the text and its meaning. If it’s said critically, put it in evaluation-negative category instead. | • Is this the limbo game?  
• What does this mean by juxtaposing various media texts? |

**Support strategies**

<table>
<thead>
<tr>
<th>Support Strategy</th>
<th>Description</th>
<th>Notes</th>
</tr>
</thead>
</table>
| Sl' (using a translation tool) | Participant goes to another resource to access heritage (native) language for clarification or translation. | • Hypermedia, I don’t know.  
Typed in phrase “What is hypermedia?” in Wikipedia in heritage (native) language. |
| Sh (highlighting) | Participant uses cursor to highlight text on page. | • Participant selected text on page and highlighted in blue, while reading.  
• While reading, participant selected and highlighted text on page 261, paragraph three. |
| Sn (notetaking) | Participant takes notes on a separate document, either on paper or Word document. | • Participant stopped and took notes on paper.  
• Participant took notes on a yellow pad. |
| Sw (using web-based tool, Google) | Participant uses Google website to gather more information. | • Participant selected, highlighted and copied word “asynchronous” from the article, then went to Google to look up the definition of the word.  
• Participant looked up the word “limbo” on Google. |
| Sw (using web-based tool, Wikipedia) | Participant uses Wikipedia website to gather more information. | • Participant went to the Wikipedia website to look up “Common Core Standards.”  
• Participant read information from the Wikipedia link about *Fahrenheit 451*. |
| Sw (using web-based tool, YouTube) | Participant goes to YouTube to gather more information. | • Participant clicked on a few links, went to YouTube, but immediately went back to article.  
• Participant went to YouTube website that pronounces words to get exact pronunciation of word “collage.” |
| Sw (using a web-based tool other than those specified with the other codes). | Participant goes to a website other than those mentioned above to gather more information. | • Participant watched and read from a Prezi.  
• Participant went back to the heritage (native) language web page. |

| Metacognitive strategies |
| Mu (affirming one’s understanding) | Participant expresses understanding of text in article (e.g. by saying “Ok”). | • That provides a framework for the teachers. Students made, technology, inquiry, okay.  
• Okay. Contemporary issues. *Note: This utterance would also be coded as St (focusing on* |
| MI (indicating lack of understanding) | Participant expresses confusion or lack of understanding. | • I don't know even if it's a famous book or not.  
• See, I don't know, limbo. Maybe a function? Note: This utterance would also be coded as Sq (questioning). |

<table>
<thead>
<tr>
<th>Evaluative strategies</th>
</tr>
</thead>
</table>
| Ep (critiquing positive/noting agreement) | Participant agrees with article and/or authors or makes a positive evaluation. | • Oh! Yeah, very short with students and long with teachers, yes, of course.  
• Yeah, I like showing them video, have them watch movie. |

| En (critiquing negative) | Participant disagrees with article and/or authors or makes a negative evaluation. | • This is exactly why I don’t like reading this. Note: This utterance would also be coded as Sl (opening (or attempting to open) link in article) because that was what the participant was doing when making this utterance.  
• Who’s going to believe this then? They don’t talk about the misunderstanding of critical points here, at all. Note: This utterance would also be coded as Dr (referring to authors of article) and Sq (questioning). |
<table>
<thead>
<tr>
<th>Role</th>
<th>Description</th>
<th>Notes</th>
</tr>
</thead>
</table>
| Dt (identifying text source) | Participant identifies the source of the article. | - This article comes from *Contemporary Issues in Technology and English Language Arts*. Teacher Education  
- This URL is the same as this. |
| Da (identifying authors of article by their names) | Participant mentions the article authors by their names. | - Beach and Myers, inquiry-based instruction. *Note: This utterance would also be coded as St (determining general topic)*.  
- Beach – inquiry based. |
| Dr (referring to authors of article) | Participant refers to the article authors, but not specifically by name (e.g., “They said earlier that....”) | - I don't think the same way as the author mention here. *Note: This utterance would also be coded as So (relating to own experience /adding to content of text).*  
- At least you have email access here if you have questions for these people. *Note: this utterance would also be coded as Sl (opening (or attempting to open) link in article) because the participant was clicking on the link to the author’s email.* |
| Do (relating to other disciplinary authors) | Participant mentions other disciplinary authors while reading article. | - I'm familiar, I know this author (referring to Alvermann).  
- Now every time I think of Said, I think of my cousin. *Note: This utterance would also be coded as So (relating to own experience/adding to content of text).* |
| Dg (determining genre) | Participant makes a comment regarding genre. | • So, is it a read for a book? With this article about the book? *Note: This utterance would also be coded as Sq (questioning).*  
• This is more of an essay or column; this is not an article. |
|---|---|---|
| Dp (determining paradigm) | Participant specifically mentions a paradigm in comment. | • So this author is more about constructivism. *Note: This utterance would also be coded as Dr (referring to authors of article).*  
• These people not belong to applied linguistics. *Note: This utterance would also be coded as Dr (referring to authors of article).* |
APPENDIX D

GUIDE TO THE PROTOCOL ANALYSIS
The Protocols

- The protocols for participants’ readings are divided into utterances. For this study, an utterance is considered to be a relatively continuous verbalization that is preceded and followed by silence.

- There are six columns on each protocol prepared for your coding: (1) the number of that reader’s utterance, (2) your code or codes for that utterance), (3) what the participant said, (4) what the participant was reading, (5) the location in the article for that portion being read, and (6) notes [not always filled in] for a relevant action that the person performs when reading that portion of the text.

- Coding may also be based solely on actions provided in Column 6 and/or on non-words such as “um,” “unh unh,” or “hmph.”

- Please look at the attached page showing a protocol prepared for coding.

Coding the Protocols

For coding you will use the list of codes you’ve been provided that is labeled “Coding Categories.” Although the examples illustrate which codes should be used for particular verbalizations, it should be helpful for you to have some “rules” to follow as you do the coding:

- Instead of writing out the full code label, you will use the abbreviations from the list of coding categories.

- An utterance may have a single code. Here are two examples:

  Utterance: “They have found that through some research.”

  The code would be Sp (paraphrasing/summarizing).
Utterance: “It sounds interesting because I want to know what are people thinking about right now.”

The code would be Ep (critiquing positive/noting agreement).

- However, a particular utterance may have two or more codes. This is called “double coding.” Here are two examples:

  Utterance: “When I taught, I didn’t teach them inference skills. Hmph. Why do they say that?”

  The codes would be So (relating to own experience/adding to content of text), En (critiquing negative), Dr (referring to authors of article).

  Utterance: “Okay, let me try this once more. Social world.”

  The codes would be Sl (opening (or attempting to open link in article), St (focusing on meaning of a single word or phrase).

- For determining coding categories, the examples I’ve provided should help you make distinctions. There are, however, two verbalizations that might be particularly confusing to code.

  ➢ You will see that participants often say “okay” and sometimes “all right.” As you code, you’ll need to discern what that word signifies. Please use the following distinction:

    o Most often, “okay” (or “all right”) is coded as Mu, affirming one’s understanding, especially if it was said at the end of reading a passage.
Here are some examples: (a) English language arts standards. Okay. (b) Okay, contemporary issues. (c) Skills taught in typical English classrooms seem to . . . Okay.

- However, if the participant is indicating an action that he or she will take, “okay” should not be coded as Mu. Here are some examples: (a) Okay, let’s read the abstract, (b) Okay, let’s go back.

➤ Another difficulty may come with the coding of questions.

- If the question seems to be a “real” question [the participant wants to know something], code it as Sq. Here is an example: “Is that a tool, constructing meaning?”

- If instead of being a “real question,” the verbalization expressed as a question is some sort of negative commentary regarding the writing, the hyperlinks, or the content of the text, code it as En (critiquing negative). For example, one student said, “A lot of thing to cover in the textbook; how can I have my students watch the video?”

• You’ll find that you’ll need to go through the coding process at least twice for each protocol. It’s very easy to miss something the first time through.

I am most appreciative of your help in coding these protocols.
APPENDIX E

EXAMPLES FROM CODING OF LAN’S PROTOCOL
<table>
<thead>
<tr>
<th>Name of Participant</th>
<th>Codes</th>
<th>Participant’s speech</th>
<th>Portion of the Article Being Read</th>
<th>Page No. Paragraph No. From PDF</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lan</td>
<td>Dt (identifying text source) Sl (opening (or attempting to open) link in article)</td>
<td>This article come from Contemporary Issues in Technology and English Language Arts. Teacher Education.</td>
<td>Contempora ry Issues in Technology and Education (CITE) website</td>
<td>Participant clicked on link <a href="http://www.citejournal.org/vol4/iss3/languagearts/article1.cfm">http://www.citejournal.org/vol4/iss3/languagearts/article1.cfm</a></td>
<td></td>
</tr>
<tr>
<td>Lan</td>
<td>Da (identifying authors of article by their names) MI (indicating lack of understanding)</td>
<td>Hmm, all right. So the authors, Myers and Beach, I don’t know them.</td>
<td>Jamie Myers Pennsylvania State University Richard Beach University of Minnesota</td>
<td>p. 257, front page</td>
<td>Participant read authors’ names from first page of article.</td>
</tr>
<tr>
<td>Lan</td>
<td>Sa (using abstract) En (critiquing negative) Dr (referring to authors of article)</td>
<td>Several critical literacy activity. I don’t know if they know if the student know what critical literacy activity are.</td>
<td>This article describes how students have made use of technology tools in several critical literacy activities that help to achieve the paramount goals of language and literacy education to enable students to develop critical consciousness and community agency through literacy. The technologies helped students define intertextual connections, pose questions about the basis for meaning, integrate multiple voices and perspectives, and adopt a collaborative inquiry stance. The technology tools include software programs for video editing, hyperlinked knowledge bases, and asynchronous virtual communication. Examples of technology projects are embedded as links in this article.</td>
<td>p. 257, Abstract</td>
<td></td>
</tr>
<tr>
<td>Lan</td>
<td>Sa (using abstract) En (critiquing negative) St (focusing on meaning of a single word or phrase) So (relating to own experience/ adding to content of text) Ep (critiquing positive/noting agreement)</td>
<td>Hyperlinked knowledge base. Um, hyperlink sometimes good, but sometimes not. Because it take people going out of the context that they’re reading.</td>
<td>This article describes how students have made use of technology tools in several critical literacy activities that help to achieve the paramount goals of language and literacy education to enable students to develop critical consciousness and community agency through literacy. The technologies helped students define intertextual connections, pose questions about the basis for meaning, integrate multiple voices and</td>
<td>p. 257, Abstract</td>
<td></td>
</tr>
</tbody>
</table>
perspectives, and adopt a collaborative inquiry stance. The technology tools include software programs for video editing, hyperlinked knowledge bases, and asynchronous virtual communication. Examples of technology projects are embedded as links in this article.

<table>
<thead>
<tr>
<th>Lan</th>
<th>St (focusing on meaning of a single word or phrase)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Dp (determining paradigm)</td>
</tr>
<tr>
<td></td>
<td>Dr (referring to authors of article)</td>
</tr>
<tr>
<td></td>
<td>Mu (affirming one's understanding)</td>
</tr>
<tr>
<td></td>
<td>Meaning from experience. Yeah, so this author is more about constructivism.</td>
</tr>
<tr>
<td></td>
<td>A social worlds curriculum focuses the study of language, literature, media, and culture on the central issue of how people construct meaning from experience. Meanings about the words people use, the objects we produce, and the activities in which we engage, are negotiated through social interaction with others in multiple, overlapping, and often contesting communities. Through our participation in these communities, or social worlds, we develop skills in using particular objects, or tools, or texts to accomplish the activities valued within these social worlds. In English language arts classrooms, these skills are often identified as reading, writing, speaking, listening, and viewing, with more specific subskills like summarizing, using transitions, intonation, note taking, and identifying propaganda techniques. In the study of literature, students focus on inferring elements of character, plot, theme, symbolism, and so on.</td>
</tr>
<tr>
<td></td>
<td>p. 258, para. 2</td>
</tr>
<tr>
<td></td>
<td>Participant read article text silently with lips moving.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Lan</th>
<th>Dr (referring to authors of article)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>En (critiquing negative)</td>
</tr>
<tr>
<td></td>
<td>So (relating to own experience / adding to content of text)</td>
</tr>
<tr>
<td></td>
<td>Well, it's up to, ah, teachers teaching, the way the teacher, you know, well, ah, these authors should go to different country, they're going to have a different findings, I thinks.</td>
</tr>
<tr>
<td></td>
<td>Often these literacy skills are defined as cognitive abilities with which some students struggle because they lack ability or motivation. Students’ lack of motivation helps English educators to envision language arts skills as socially constructed literacy practices, or goal directed ways of using language and symbols valued within a social group to which the student hopes to belong. Although skills may readily transfer to other social contexts, the skills taught in the typical English classroom seem to many students to be valuable</td>
</tr>
<tr>
<td></td>
<td>p. 258, para. 3</td>
</tr>
</tbody>
</table>
only within the specific context/discourse of school. When students and teachers begin to understand skills as socially developed over time in particular cultural groups, they can analyze how language and symbols shape their identities, relationships, and activities within particular social worlds.

Lan  So⁷ (reading segment aloud--not verbatim but only selected words in the segment)

Well, support skills that socially negotiated ways of using symbols.

We (the authors) have found technology projects to be especially beneficial in supporting the development of language and symbol use within social worlds. These technology projects also support the realization that skills are socially negotiated ways of using symbols (not cognitive predispositions and limits) that enable all learners to extend different language actions into different contexts to develop new forms of negotiating meaning, belonging, and social activity within and across social worlds (http://www.ed.psu.edu/k-12/socialworlds)

p. 258, para. 4

Lan  Do (relating to other disciplinary authors)

He's in reading, reading field, reading comprehension.

The English language arts curriculum needs to reframe activity with texts around the development of literacy activities that highlight and critique these social, constructive, negotiated practice of using words, symbols, and objects to negotiate membership within and across multiple social worlds (Alvermann, 2002). Students of all ages and language experiences are able to inquire into how words, symbols, and objects are used by various groups within their lived communities to define valued identities, relationships, and activities. Likewise, texts such as literature, film, and mass media, offer represented social worlds that can be analyzed in terms of the identities, relationships, and activities promoted within the media text world. Through inquiries into both lived and represented social worlds, students can use many technology tools to produce their own representations that describe the identities and

p. 259, para. 4

Participant is talking about Alvermann, who is cited in the text.
activities valued in a social world. In some cases, students can also explain how valued ends are constructed through the way words, symbols, and objects are used in social interactions.

<table>
<thead>
<tr>
<th>Lan</th>
<th>MI (indicating lack of understanding) Ep (critiquing positive/noting agreement)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>I have no ideas about these tools. Good to know that.</td>
</tr>
<tr>
<td></td>
<td>Over the past decade, we have worked with students from the age of 12 and older in the authoring of QuickTime videos using various software projects. The most expensive and powerful of these tools has been Adobe Premiere, while Avid Cinema, Strata Video Shop, or iMovie have shipped free of charge with computers or video input devices. With all of these tools, we have found the learning curve to be very short with students and long with teachers. Although teachers may struggle with many technical issues, teachers who have experienced success with the use of these tools in their classrooms have been willing to take the risk of not knowing as much about the use of the tool as the students and to learn from them. As in any learning situation, giving students responsibility for teaching teachers and peers can bolster their sense of agency and membership in the social world of school achievement.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Lan</th>
<th>En (critiquing negative) Sq (questioning)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>These student accept everything? No questions? Hmph.</td>
</tr>
<tr>
<td></td>
<td>Rather than assume that students are passive dupes who readily accept these representations teachers can use technology tools to help students construct alternative representations that challenge various media representations (Radway, 2002; Tobin, 2001). Part of this entails assuming an active role in constructing their own alternative, counterrepresentations as is evident in <em>Ad-Busters’ Magazine</em> (<a href="http://www.adbusters.org/">http://www.adbusters.org/</a>) that parodies ads. In doing so, students are taking the original, problematic representations and re-contextualizing those representations into their own critical framework or space. For example, the female adolescents use online zines as a tool to</td>
</tr>
</tbody>
</table>

| p. 260, para. 2 | p. 265, para. 1 | Participant did not look up word *dupe*, but tried to decipher it from context. |
challenge and subvert sexist media representations.
APPENDIX F

EXAMPLES FROM CODING OF MYRIAM’S PROTOCOL
<table>
<thead>
<tr>
<th>Name of Participant</th>
<th>Codes</th>
<th>Participant’s speech</th>
<th>Portion of the Article Being Read</th>
<th>Page No. Paragraph No. From PDF</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Myriam</td>
<td>Sq (questioning) Sg (determining general topic)</td>
<td>But how does it look like - inquiry based English instruction? Okay, I’ll keep reading.</td>
<td>In <em>Inquiry-Based English Instruction</em> (Beach &amp; Myers, 2001) an English language arts curriculum is detailed in which students explore how words, objects, and symbols are used to enact literacy practices and discourses that construct multiple social worlds, each with its own valued identities, relationships, and activities. The book provides a framework for teachers and documents how students have made use of technology tools to conduct inquiries into issues related to their own lived peer, family, school, community, workplace, and virtual social worlds and the social worlds represented in literature and media.</td>
<td>p. 257, para. 2</td>
<td></td>
</tr>
<tr>
<td>Myriam</td>
<td>Sq (questioning) MI (indicating lack of understanding) Dg (determining genre)</td>
<td>So, is it a read for a book? With this article about the book? Oh, I’m not comprehending.</td>
<td>In <em>Inquiry-Based English Instruction</em> (Beach &amp; Myers, 2001) an English language arts curriculum is detailed in which students explore how words, objects, and symbols are used to enact literacy practices and discourses that construct multiple social worlds, each with its own valued identities, relationships, and activities. The book provides a framework for teachers and documents how students have made use of technology tools to conduct inquiries into issues related to their own lived peer, family, school, community, workplace, and virtual social worlds and the social worlds represented in literature and media.</td>
<td>p. 257, para. 2</td>
<td>Participant whispered while reading, and then sighed.</td>
</tr>
<tr>
<td>Myriam</td>
<td>Sb (scrolling backward) Sg (determining general topic) Dp (determining topic)</td>
<td>Okay, I thought the title had something about social critical literacy. Or a focus on constructing . . .</td>
<td>Constructing Critical Literacy Practices Through Technology Tools and Inquiry [title of article].</td>
<td>p. 257, Title</td>
<td>Participant scrolled back up to beginning of article.</td>
</tr>
<tr>
<td>Myriam</td>
<td>MI (indicating lack of understanding)</td>
<td>This is exactly why I don’t like reading this.</td>
<td>We (the authors) have found technology projects to be especially beneficial in supporting the development of language and symbol use within social worlds. These technology projects also support the realization that skills are socially negotiated ways of using symbols (not cognitive predispositions and limits) that enable all learners to extend different language actions into different contexts to develop new forms of negotiating meaning, belonging, and social activity within and across social worlds (<a href="http://www.ed.psu.edu/k-12/socialworlds">http://www.ed.psu.edu/k-12/socialworlds</a>).</td>
<td>p. 258, para. 4.</td>
<td>Participant scrolled through article, head in hand. When the links didn’t work, participant sighed.</td>
</tr>
<tr>
<td>Myriam</td>
<td>MI (indicating lack of understanding)</td>
<td>I don’t like it when I read something from a book or something that I don’t get. I think it’s related to American culture. I don’t know even if it’s a famous book or not.</td>
<td>For example, the following excerpt from the novel, <em>Bless Me, Ultima</em> (Anaya, 1972), illustrates how Antonio moves within multiple, competing social worlds as he attempts to negotiate and construct his identity, relationships, and values.</td>
<td>p. 258, para. 5; p. 259 para. 1</td>
<td></td>
</tr>
<tr>
<td>Myriam</td>
<td>En (critiquing negative)</td>
<td>That’s totally the problem with the translator I got. Translation I got. Whatever.</td>
<td>However, as teachers we have noted one extremely difficult tension in our evaluation of students’ videos. The nature of the media itself relies on the implicit communication of ideas far more than the explicit communication of ideas characteristic of written essays. Thus, we often find ourselves in interpretive limbo, seeing some fascinating ideas in student videos and not knowing if they were intended critiques or messages. Likewise, we sometimes miss what we think students might have been.</td>
<td>p. 260, para. 2</td>
<td>Participant looked up the word “limbo” on Google, and then went to Wikipedia. When participant could not understand what the word meant, even in heritage (native) language,</td>
</tr>
</tbody>
</table>
communicating because we lack the intertextual background that the students take for granted in their peers because they share lived social worlds. Of course, we talk about these interpretive issues with students, because intention and audience are essential rhetorical issues in any act of representation and are part of the critical literacy practices of inquiry, questioning, and negotiating multiple perspectives. However, to evaluate video authoring intentions adequately, we require students to provide a written account of their process and product to help us most fully understand their rhetorical understandings. Students also write presentations to evaluate the larger rhetorical purposes for their videos in preparing them for display in classroom film festivals and award ceremonies. We have found that most all rubrics traditionally used to evaluate writing projects work equally well with evaluating students’ video projects.

<table>
<thead>
<tr>
<th>Myriam</th>
<th>En (critiquing negative) Dr (referring to authors of article) MI (indicating lack of understanding)</th>
<th>Hmm [whispering]. I thought maybe it’s a book. I think it’s a book. Yep, I don’t like it when I don’t know, when the authors take for granted that I’m going to know what’s this.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Myriam</td>
<td>Sl (opening or attempting to open) link in article)</td>
<td>By juxtaposing various media texts to the quotations from the novel, the students established the critical literacy practices sought by the teachers. Playing a song or a movie clip created a meaningful connection between the literature and life. The meanings of the once separated media text and novel text became connected and generated new layers of meaning for each other. The discussion of connections and new meanings elicited multiple voices and perspectives in the class and raised new questions about the basis of interpretation from prior readings of the once separated text and media.</td>
</tr>
<tr>
<td>Myriam</td>
<td>No, no, no, wait, stop, stop, okay. It’s not going to open, okay.</td>
<td>Likewise, in the “utopia” (<a href="http://www.ed.psu.edu/k-12/fahrenheit/utopia8.mov">http://www.ed.psu.edu/k-12/fahrenheit/utopia8.mov</a>) video authored by a small group in Period 8, a gospel voice singing “everybody is free” is used to replace the soundtrack for the</td>
</tr>
<tr>
<td>Myriam</td>
<td>En (critiquing negative) Sq (questioning)</td>
<td>Why? How is this related to utopia? Boring, boring.</td>
</tr>
<tr>
<td>--------</td>
<td>----------------------------------------</td>
<td>---------------------------------------------------</td>
</tr>
<tr>
<td>Myriam</td>
<td>Sq (questioning) Mu (affirming one’s understanding)</td>
<td>What are they trying to say here? Okay.</td>
</tr>
<tr>
<td>Myriam</td>
<td>Sw® (using web-based tool, Google) SI” (using a translation tool) Sw® (using a web-based tool other than those specified with the</td>
<td>The critical literacy practice of defining intertextual connections forms the basis of play, creativity, and critique with this tool for deconstructing and reconstructing meaning. The students combined and juxtaposed multiple texts in ways that created new composite texts that interrogate the meanings of the original texts. The “knowledge as power” (<a href="http://www.ed.psu.edu/k-12/fahrenheit/knowledgeaspowe">http://www.ed.psu.edu/k-12/fahrenheit/knowledgeaspowe</a> r4.mov) video made by a small group of 10th graders in fourth period includes one segment in</td>
</tr>
<tr>
<td>Myriam</td>
<td><strong>Sw</strong> (using web-based tool, Wikipedia)</td>
<td><strong>Si</strong> (translating to heritage language)</td>
</tr>
</tbody>
</table>
APPENDIX G

EXAMPLES FROM CODING OF BILAL’S PROTOCOL
<table>
<thead>
<tr>
<th>Name of Participant</th>
<th>Codes</th>
<th>Participant’s speech</th>
<th>Portion of the Article Being Read</th>
<th>Page No. Paragraph No. From PDF</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bilal</td>
<td>Sn</td>
<td>Okay, so today’s article is “Constructing critical literacy through technology tools and inquiry”.</td>
<td>Critical Literacy Practices Through Technology Tools and Literacy</td>
<td>p. 257, Article title</td>
<td>Participant wrote down notes on a separate sheet of paper.</td>
</tr>
<tr>
<td>Bilal</td>
<td>SI</td>
<td>Let’s see. Contemporary issues in English Language and Teacher Education.</td>
<td>[Image]</td>
<td><a href="http://www.citejournal.org/vol4/iss3/languagearts/article1.cfm">http://www.citejournal.org/vol4/iss3/languagearts/article1.cfm</a></td>
<td>Before reading article, participant wanted to know what CITE and ELA meant. Participant went to CITE journal website first.</td>
</tr>
<tr>
<td>Bilal</td>
<td>Sa</td>
<td>So it means, article might be discussing technology, the use of technology or the benefits of technology or constructing critical literacies through some research.</td>
<td>This article describes how students have made use of technology tools in several critical literacy activities that help to achieve the paramount goals of language and literacy education to enable students to develop critical consciousness and community agency through literacy. The technologies helped students define intertextual connections, pose questions about the basis for meaning, integrate multiple voices and perspectives, and adopt a collaborative inquiry stance. The technology tools include software programs for video editing, hyperlinked knowledge bases, and asynchronous virtual communication. Examples of technology projects are embedded as links in this article.</td>
<td>p. 257, Abstract</td>
<td>Participant clicked back to journal article and wrote down notes on a separate sheet of paper.</td>
</tr>
<tr>
<td>Bilal</td>
<td>Sh</td>
<td>Asynchrony Asynchrony, in the general meaning, is the state of not being synchronized. Asynchronous learning, a</td>
<td>[Link]</td>
<td></td>
<td>Participated selected, highlighted and copied word “asynchronous” from the article,</td>
</tr>
<tr>
<td>Bilal</td>
<td>Sh (highlighting)</td>
<td>What is this for? Okay. It won’t open and I’ll just proceed.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------</td>
<td>------------------</td>
<td>-------------------------------------------------------------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sl (opening)</td>
<td>We (the authors) have found technology projects to be especially beneficial in supporting the development of language and symbol use within social worlds. These technology projects also</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>p. 258, para. 2</td>
<td>Participant went back to page 258, paragraph two, to finish reading the last sentence in the paragraph.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Participant</th>
<th>went to Google to look up the definition of the word. Participant read from the Google front page, then clicked on the Wikipedia website. After reading the definition out loud, participant then went back to article.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Google → Wikipedia</td>
<td>A social worlds curriculum focuses the study of language, literature, media, and culture on the central issue of how people construct meaning from experience. Meanings about the words people use, the objects we produce, and the activities in which we engage, are negotiated through social interaction with others in multiple, overlapping, and often contesting communities. Through our participation in these communities, or social worlds, we develop skills in using particular objects, or tools, or texts to accomplish the activities valued within these social worlds. In English language arts classrooms, these skills are often identified as reading, writing, speaking, listening, and viewing, with more specific subskills like summarizing, using transitions, intonation, note taking, and identifying propaganda techniques. In the study of literature, students focus on inferring elements of character, plot, theme, symbolism, and so on.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Participant</th>
<th>selected, highlighted and tried to open the link</th>
</tr>
</thead>
</table>

Based tool, Google) Sw* (using web-based tool, Wikipedia) Mu (affirming one’s understanding) So’ (reading segment aloud verbatim) Student-centered teaching method that uses online learning resources to facilitate information sharing, okay. Using online resources to facilitate information sharing. Teaching method that uses online learning resources to facilitate information sharing outside the constraints of time and place among a network of people.
| Bilal | Sn (notetaking) St (focusing on meaning of a single word or phrase) | Character development. | Surrounding any classroom literacy project is a cultural practice that frames and directs individuals’ use of words, symbols, and objects to interpret and produce meaning. Words, symbols, and objects can be described as the tools through which individuals construct a social world with shared meanings for desired values, relationships, activities, and identities. Literature provides a wonderful example of just how this construction of a social world takes place. In teaching about character development, we have long focused on what a character thinks and says, on what others say about the character, and on what the author describes about the character. Words are the tools of constructing the meaning of a character’s identity, desires, and agendas. The character moves through many social interactions in a story that often creates some tension within a social world or between multiple social worlds. The character may be staunchly positioned in one world, caught between loyalties to several worlds, or challenged by others within an unraveling and uncontrollable social world. For example, the following excerpt from the novel, *Bless Me, Ultima* (Anaya, 1972), illustrates how Antonio moves within multiple, competing social worlds as he attempts to negotiate and construct his identity, relationships, and values: | p. 258, para. 5; p. 259, para. 1 | Participant wrote down notes on a separate sheet of paper. [Connecting teaching. So character development, symbolism. Teaching]. |

<p>| Bilal | Sq (questioning) Sws (using) | So what do they mean by character development? | Surrounding any classroom literacy project is a cultural practice that frames and directs individuals’ use of words, symbols, and objects to interpret and produce meaning. Words, symbols, and objects can be | p. 258, para. 5; p. 259, para. 1 | Participant looked up “language arts character development” on Google. Then |</p>
<table>
<thead>
<tr>
<th>Participant</th>
<th>Description</th>
<th>Text</th>
<th>Link/Directive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bilal</td>
<td>So'' (reading segment aloud verbatim) St (focusing on meaning of a single word or phrase)</td>
<td>Then the golden carp swam by Cico and disappeared into the darkness of the pond. I felt my body trembling and I saw the bright golden form disappear. I knew I had witnessed a miraculous thing, the appearance of a pagan god, a thing as miraculous as the curing of my uncle Lucas. And I thought, the power of God failed where Ultima’s worked; and then a sudden illumination of beauty and understanding flashed through my mind. This is what I had expected God to do at my first holy communion! If God was witness to my beholding of the golden carp then I had sinned! I clasped my hands and was about to pray to the heavens when the waters of the pond exploded. (p. 114)</td>
<td>participant clicked on the link [<a href="http://wwwpbslearningmediaorg/resource/vtl07lavtextlpflora/character-development-flora/">http://wwwpbslearningmediaorg/resource/vtl07lavtextlpflora/character-development-flora/</a> from the Google front page. Google → PBS website</td>
</tr>
</tbody>
</table>
first holy communion! If God was witness to my beholding of the golden carp I had sinned! I clasped my hands and was about to pray to the heavens when the waters of the pond exploded.

Hmm. Bless Me Ultima.

As teachers of English, we have come to think about video authoring as an indispensable technology tool for interpreting any work of literature. We have emphasized so often the strong connection between reading and writing, how one supports the development of the other. Similarly, media authoring supports the development of critical media literacy. When students author multimedia projects, like video, they begin to see the way commercially produced film and video manipulates image and sound in an attempt to persuade an audience. Students have authored video biographies, novel enactments, film trailers for novels, issue documentaries, okay, so?

Over the past decade, we have worked with students from the age of 12 and older in the authoring of QuickTime videos using various software projects. The most expensive and powerful of these tools has been Adobe Premiere, while Avid Cinema, Strata Video Shop, or iMovie have shipped free of charge with computers or video input devices. With all of these tools, we have found the learning curve to be very short with students and long with teachers.

[Critical technology, expertise.]

Participant selected and highlighted page 259, paragraph five, and then wrote down notes on a separate sheet of paper.
knowing as much about the use of the tool as the students and to learn from them. As in any learning situation, giving students responsibility for teaching teachers and peers can bolster their sense of agency and membership in the social world of school achievement.

| Bilal | Sh (highlighting) St (focusing on meaning of a single word or phrase) Sw (using web-based tool, Wikipedia) Swg (using web-based tool, Google) | Participant selected, highlighted and copied the word “zines” and pasted it into Google. Participant then went to the Wikipedia website to try to determine the definition of “zines,” Google → Wikipedia. | p. 265, para. 1 |
|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------
| positive/noting agreement | | | separate sheet of paper. |
APPENDIX H

EXAMPLES FROM CODING OF KYUNG’S PROTOCOL
<table>
<thead>
<tr>
<th>Name of Participant</th>
<th>Codes</th>
<th>Participant’s speech</th>
<th>Portion of the Article Being Read</th>
<th>Page No. Paragraph No. From PDF</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kyung</td>
<td>SI (opening (or attempting to open) link in article) So (reading segment aloud--not verbatim but only selected words in the segment) En (critiquing negative)</td>
<td>Okay. Abstract. Current issues, mathematics, nothing special.</td>
<td>Reading from online article.</td>
<td></td>
<td><a href="http://www.citejournal.org/vol4/iss3/languagearts/article1.cfm">http://www.citejournal.org/vol4/iss3/languagearts/article1.cfm</a> Participant read from the sidebar on the article webpage from the Constructing Issues in Technology and Teacher Education (CITE) table of contents main page.</td>
</tr>
<tr>
<td>Kyung</td>
<td>Sa (using abstract) Sh (highlighting ) Swg (using a web-based tool, Google) St (focusing on meaning of a single word or phrase) Sq (questioning ) Mu (affirming one’s understanding)</td>
<td>No, Google. Community agency? Okay.</td>
<td>This article describes how students have made use of technology tools in several critical literacy activities that help to achieve the paramount goals of language and literacy education to enable students to develop critical consciousness and community agency through literacy. The technologies helped students define intertextual connections, pose questions about the basis for meaning, integrate multiple voices and perspectives, and adopt a collaborative inquiry stance. The technology tools include software programs for video editing, hyperlinked knowledge bases, and asynchronous virtual communication. Examples of technology projects are embedded as links in this article.</td>
<td>p. 257, Abstract</td>
<td>Participant selected, highlighted and copied phrase, and then pasted it into Google to find out what “community agency” meant. Participant read definition from one of the links on Google. Google</td>
</tr>
<tr>
<td>Kyung</td>
<td>Sa (using abstract) So (reading segment aloud--not verbatim but only selected words in the segment)</td>
<td>Through literacy. Technology helps you define intertextual connection. Is it Bakhtin? Hmm.</td>
<td>This article describes how students have made use of technology tools in several critical literacy activities that help to achieve the paramount goals of language and literacy education to enable students to develop critical consciousness and community agency through literacy. The technologies helped students define intertextual connections, pose questions about the basis for meaning, integrate multiple voices and perspectives, and adopt a collaborative inquiry stance. The technology tools include software programs for video editing, hyperlinked knowledge bases, and asynchronous virtual communication. Examples of technology projects are embedded as links in this article.</td>
<td>p. 257, Abstract</td>
<td>Participant read quietly.</td>
</tr>
</tbody>
</table>
This article describes how students have made use of technology tools in several critical literacy activities that help to achieve the paramount goals of language and literacy education to enable students to develop critical consciousness and community agency through literacy. The technologies helped students define intertextual connections, pose questions about the basis for meaning, integrate multiple voices and perspectives, and adopt a collaborative inquiry stance. The technology tools include software programs for video editing, hyperlinked knowledge bases, and asynchronous virtual communication. Examples of technology projects are embedded as links in this article.

Examples of technology projects are embedded here [reading last sentence of abstract].

Does this work? Or this one? Nah, it doesn’t work.

http://www.ed.psu.edu/k-12/teenissues/
http://www.ed.psu.edu/k-12/fahrenheit/aperfectworld7.mov

Participant scrolled up and down, looking for other links. Participant clicked on them but links didn’t open.

http://www.unt.edu/

Participant clicked on the University of North Texas (UNT) webpage and used other web pages to try to get links to open, and then went back to the article.

Unt.edu → http://www.ed.psu.edu/k-12/fahrenheit/utopia8.mov
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Kyung</td>
<td>St (focusing on meaning of a single word or phrase) Mu (affirming one’s understanding) Sw⁶ (using web-based tool, Google) Sw⁷ (using web-based tool, Wikipedia) Sw¹ (using web-based tool, YouTube)</td>
<td>Collagu. This is collagu. Yes, this is collagu. Yes . . . No, this is collagu.</td>
<td><a href="http://en.wikipedia.org/wiki/Collage">http://en.wikipedia.org/wiki/Collage</a> <a href="https://www.youtube.com/watch?v=AKMDMkk5MXk">https://www.youtube.com/watch?v=AKMDMkk5MXk</a>.</td>
<td>Participant looked up the word “collage” on Wikipedia, and then went to the YouTube website that pronounces words to get the exact pronunciation of the word “collage.” Participant listened as the video pronounced /kolawj/. Wikipedia YouTube</td>
</tr>
<tr>
<td>Kyung</td>
<td>So³ (reading segment aloud—not verbatim but only selected words in the segment)</td>
<td>Can also be used as a tool for engaging in critical inquiry. This is art. High school kids use WebCT too?</td>
<td>Technology can also be used as a tool for engaging in critical inquiry about community issues and representations of those issues. A group of preservice English teachers worked with middle-school students involved in study of a St. Paul neighborhood. Teachers and students communicated with each other on a WebCT bulletin board, in which</td>
<td>p. 266, para. 2</td>
</tr>
</tbody>
</table>
they described activities related to the project, communication that can create ongoing dialogues about issues (Doering & Beach, 2002). Groups of students focused on studying a range of issues associated with particular aspects of an urban neighborhood: architecture, community development, community history, parks and recreation, business development, segregation, entertainment opportunities, employment opportunities, housing, public safety, restaurants, pollution, and recycling. Both teachers and students formulated perceptions of issues based on background reading of texts and Web sites, discussed issues common to urban neighborhoods, defined questions related to these issues, engaged in interviews with neighborhood people, and took digital photos and field notes. Based on the data, teachers and students then analyzed neighborhood people’s ability to address particular issues and how those issues are represented in the media. For example, the group focusing on crime examined the ways in which local television news often represented this and other St. Paul urban neighborhoods as crime ridden.

A central focus of these projects was the use of digital photography to document and display the nature of the problems facing community members. For example, students and teachers employed photos to document the range of available housing, from dilapidated to upscale, gentrified housing that local residents could no longer afford. The teachers and students used these photos for presentations of a poster-session in the school gym open to students and community members. Teachers developed hypermedia presentations in consultations with their students and created Web-based presentations about specific issues.

<p>| Kyung | Central focus of these projects, digital, wait a minute. Hypermedia, critique. Media representations. Social world, portraying linking it to social competence. This must work [clicks tongue]. Otherwise, yeah. Don’t really have clear images here. | A central focus of these projects was the use of digital photography to document and display the nature of the problems facing community members. For example, students and teachers employed photos to document the range of available housing, from dilapidated to upscale, gentrified housing that local residents could no longer afford. The teachers and students used these photos for presentations of a poster-session in the school gym open to students and community members. Teachers developed hypermedia presentations in consultations with their students and created Web-based presentations about specific issues. | p. 266, para. 3 | Participant clicked tongue, sighed, and then re-clicked on the link <a href="http://www.ed.psu.edu/k-12/socialworlds/stephanie.mov">http://www.ed.psu.edu/k-12/socialworlds/stephanie.mov</a> Participant scrolled up and down through the document. |</p>
<table>
<thead>
<tr>
<th>Kyung</th>
<th>En (critiquing negative) Sf (scrolling forward) Sb (scrolling backward) Dr (referring to authors of article)</th>
<th>So these authors are arguing without any evidence or good points or any numbers here</th>
<th>We encourage teachers to learn how to integrate these new technology tools for representing life worlds into the study of ideas and issues represented through text.</th>
<th>p. 266, para. 5</th>
<th>Participant scrolled up and down through the article.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kyung</td>
<td>En (critiquing negative) Dr (referring to authors of article) Sq (questioning )</td>
<td>Who’s going to believe this then? They don’t talk about the misunderstanding of critical points here, at all.</td>
<td>We encourage teachers to learn how to integrate these new technology tools for representing life worlds into the study of ideas and issues represented through text.</td>
<td>p. 266, para. 5</td>
<td></td>
</tr>
<tr>
<td>Kyung</td>
<td>Sq (questioning ) So₄ (reading segment aloud—not verbatim but only selected words in the segment) Sw₆ (using web-based tool, Google) Sw₈ (using a web-based tool other than those specified with the other codes) Mu (affirming one’s understanding)</td>
<td>What is this 'ISprings Suite'? Adobe Dreamweaver. It’s definitely something that I don’t know. Planning. Hmmm. Production. Authoring tool can be used to create a tool . . . What? Adobe Flash. Websites. Flash animations. Okay, let’s go back.</td>
<td><a href="http://prezi.com/xnns86bvyuxb/interactive-media-authoring">http://prezi.com/xnns86bvyuxb/interactive-media-authoring</a></td>
<td></td>
<td>Participant watched and read from a Prezi to try to understand media authoring, then went back to article. Google → Prezi</td>
</tr>
</tbody>
</table>
APPENDIX I

REVIEW OF ADDITIONAL RELEVANT LITERATURE
Researchers have long tried to explain the complex cognitive processes involved with reading. This review of additional relevant literature begins by considering whether or not a single model can explain the reading process. Following that, the nature of text, especially hypertext is considered. The paper concludes with a review of online reading and second language online reading strategies, especially as they relate to hypertext and the added complexities of intertexuality and hypertextuality.

No Single Model of Reading

Conducting research into the reading strategies of people reading in a language other than their first language led to some rethinking of the reading process. Early researchers in reading, who often did not know their subjects’ first languages, could not really provide a full description of the reading process. How could these researchers develop and validate a description of the process without knowledge of its possible variations? For example, they needed to acknowledge the relation of first language (L1) reading ability to second-language comprehension, especially because different languages have different surface structures. The development of reading in one’s second language (L2) is not necessarily additive but can instead be synchronic, interactive, and synergistic, as pointed out by Bernhardt (2005).

Learning a second (or third) language requires juggling or switching cognitive processes. Bernhardt (2005) proposed a proficiency compensatory model of second-language reading—hypothetical but not validated empirically—which entailed:

- 20% first language literacy (alphabetics, vocabulary, text structure, beliefs about word and sentence configuration, etc.)
• 30% second language (L2) language knowledge (morpho-syntactic, grammatical form, vocabulary knowledge, cognates, L1/L2 linguistic distance, etc.)
• 50% unexplained variance (comprehension strategies, engagement, content and domain knowledge, interest, motivation, etc.)

Second Language Reading Strategies.

All readers, including second language learners, employ various strategies when reading. These reading strategies can be separated into two major categories: top-down (generalized global strategies) and bottom-up (more specific local strategies). This dichotomy has been used, for example, by Ramli et al. (2011) and Temur and Bahar (2011). Researchers have found that English language proficiency plays a part in where the emphasis is made in strategy use. A number of studies have indicated that ELLs with a higher English proficiency tend to use more globalized strategies, commensurately, and ELLs with a lower English proficiency tend to employ more bottom-up localized strategies (Block, 1986, 1992; Carrell, 1989; McNeil, 2010; Pang, 2006; Poole, 2010). When reading challenging academic texts, ELL readers with both high and low proficiency in English make much use of both kinds of strategies. However, ELLs with high proficiency in English use these strategies more efficiently (Huang et al., 2009).

There is some evidence that certain literacy skills transfer across languages. For example, researchers have found that word recognition and processing skills in the L1 can influence strategy use in deciphering vocabulary meanings in the L2, in this case English (Abanomey, 2013; Aweiss, 1993; Bernhardt, 1986, 1990). But there are other strategies that vary across languages depending, in part, on the orthography of the L1. For example, Korean
readers might use more phonological strategies, while Chinese readers would rely on visual-orthographic (Bang & Zhao, 2007).

Researchers have also found that ESL students have a higher use of strategies than monolingual native English students as they strive to comprehend text, and the readers’ English language proficiency plays a critical role in the type of strategy that is used (Anderson, 2003; Bang & Zhao, 2007; Block, 1986; Carrell, 1989; Chang, 1997; Pang, 2006). Readers with higher proficiency in either their L1 and/or L2 were more able to utilize cognitive processes effectively while reading than are those with lower reading proficiency (Sheorey & Mokhtari, 2001).

One important finding was that L2 readers with greater L2 proficiency tended to use more global strategies. Although proficient and less proficient readers knew and used some of the same strategies, both used “bottom-up” similarly (Block, 1986; Carrell, 1989; McNeil, 2010; Pang, 2006). And as students progressed in learning English, there was more use of metacognitive strategies (Malcolm, 2009). A study conducted with Korean college students showed more frequent use of identifiable reading strategies when they were reading expository, technical texts in English as opposed to narrative texts in English (Park, 2010). In another study that looked at various factors, strategies were different also depending on the grade level, major, enjoyment of reading, self-perception, and gender (Mesgar et al., 2012).

Table J.1 shows a generalization of some of the strategies that ELLs use. Overall, the strategies listed in each column are by general frequency of use and not restricted to each column.
Table J.1

*English Language Learner Print Reading Strategies*

<table>
<thead>
<tr>
<th>Higher English Proficiency</th>
<th>Lower English Proficiency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global Strategies (Top-down)</td>
<td>Bottom-up and Support Strategies</td>
</tr>
<tr>
<td>Metacognitive</td>
<td>Cognitive or support</td>
</tr>
<tr>
<td>Paraphrasing</td>
<td>Translation</td>
</tr>
<tr>
<td>Stating the main idea</td>
<td>Grammar, sound-letter, word meaning</td>
</tr>
<tr>
<td>Flexible. Ability to choose appropriate strategy</td>
<td>Decoding</td>
</tr>
</tbody>
</table>

Note: Strategies in this table were compiled from studies by the following researchers: Carrell, 1989; Carrell, Pharis, & Liberto, 1989; Chang, 1997; Karbalaee Kamran, 2013; Pang, 2006; Poole, 2010.

Students’ abilities to use meaning-making strategies effectively made a difference with several major issues: reading, language, and meaning construction. Bilingual research has shown a mismatch between English text difficulty and second language proficiency. However, as students are gradually exposed to more difficult English texts, comprehension increases as English proficiency develops (Jimenez et al., 1995; Langer et al., 1990). According to some researchers (e.g., Cummins & Swain, 1986), second language comprehension and skills are acquired more quickly with context-embedded text (informal) as opposed to context-reduced (academic), although second language acquisition and reading comprehension are not necessarily in conjunction.

The Matter of Hypertext

Much of what readers will encounter in online reading is hypertext, an online medium existing only in a computer (Strasma, 2010). Blocks of text are connected by electronic links, offering different pathways to users. Information is arranged in a non-linear manner with the computer automating the process of connecting one piece of information to another. Although
one thinks of only print text as linear, television and radio are also linear, with predefined sequences constraining the reader. Print, television, and radio all try to maximize coherence, utilizing a set of basic cognitive processes and strategies. Reading entails a striving for coherence, as pointed out long ago by Kintsch (1974), and, even when the text is hypertext, readers still strive to achieve it (Rouet & Levonen, 1996).

Hypertext can be made more comprehensible and navigable with hyper-references (Sakar & Erçetin, 2004). Hyper-references are electronic reference aids that “offer immediate access to supportive information with a clear and direct path to the target information” (Aust et al., 1993, p. 64). The support tools include such aids as on-line dictionaries, thesauruses, spelling checkers, and glossaries. Annotations are added to each page, linking word-level information (e.g., vocabulary definitions, topic-level information, background information with text, audio, graphics and video). Sometimes, navigation maps are also added to help with organization of pages (Akyel & Erçetin, 2009). Sakar and Erçetin (2004) found that the use of hyper-references was more effective than just simplifying the text at the word, sentence, or topic level.

With hypertext, because the user chooses which branch to take, not only less-proficient readers but also inexperienced digital text users can face orientation and navigation difficulties (Chun, 2001). And if the text is too difficult, hyper-references don’t help (Aust et al., 1993; Chun, 2001). “Wayfinding”, a new term coined by Aust et al. (1993) describes the confusion when a reader gets lost in hyperspace. This confusion can be confounded because some readers choose hyper-references not because they’re useful, but because they’re interesting (Sakar & Erçetin, 2004).
Intertextuality and Hypertextuality

With the development of hypertext, the nature of texts is changing, and, regarding the reading process, attempts are being made to describe a process that is changing so rapidly that, it is difficult to provide a static definition. Conceptual systems based on ideas of center, margin, hierarchy, linearity, and other bounded terms have been replaced with ideas of multilinearity, nodes, links, and networks. The new conceptual framework was proposed with hypertext theory, first in 1945 by Bush and then reimagined in 1965 by Nelson. Landow (1992), who took a poststructuralist perspective on technology, spoke of hypertext as the “literal embodiment” of intertextuality. Hypertext is the network of texts that we experience when we read electronic texts on a computer. A reader can link immediately to another chunk (lexia) or another text. Authors can incorporate others’ texts within their own, a concept spoken of by Barthes (1971/1979), who spoke of the infinite regress of texts and the absence of final “signifieds.”

Kristeva (1967/1980) took Bakhtin’s (1929/1984) ideas about heteroglossia to the poststructuralists in Paris, where she went to study with Barthes, and she presented a conception about what she called “intertextuality.” She argued that a text is “a permutation of texts” which intersects in the space of a given text (p. 36). In today’s world, how has reading changed with onscreen and online semiotics? The poststructural view showed how apparently bounded texts did not have boundaries. This boundary crossing also applies to digital texts (Kress, 2010), as Kristeva’s reconceptualized semiotics actually works well to explain hypertexts. Kristeva explained that texts are always in a state of production; readers can come up with their own interpretations and transformations.
The openness of text and the blurring of boundaries between reader and writer are signature characteristics of electronic hypertext. References and links are chosen by the user, who actually orients himself within a context. This changes both the experience of reading and the nature of that which is read. Barthes (1967), in referencing the death of the author, spoke of the end of a single meaning for a text that was predetermined by the author. He was almost prescient in his comment:

The absence of the Author . . .is not only a historical fact or an act of writing: it utterly transforms the modern text (or—what is the same thing—the text is henceforth written and read so that in it, on every level, the Author absents himself) . . .We know that to restore to writing its future, we must reverse its myth: the birth of the reader must be ransomed by the death of the Author. (Barthes, 1967, p. 4, 6)

Readers must be able to understand the nonlinearity of websites, with their multimodalities and multiple nodes. Borges (1941) penned a short story called “The Garden of Forking Paths.” This metaphor of labyrinths, with recurring ideas by multiple authors and multiple interpretations segued into the types of digital texts readers are confronted by today.

It is important in any consideration of texts, whether printed book or hypertext, to consider their relation to culture and their role in the interplay with culture. Vygotsky (1986) believed that all meaningful learning occurs in a social environment, and he also emphasized the importance of tools for cultural mediation. With the computer now as an intermediary between humans exchanging information, there seem to be no limits to learning and to global reach (cf. Barrett, 1989).

Among others, Bolter (2001) has expressed some concern with digital reading. Hypertext can lead to fragmentation of both the textual world and the digital world, which can lead to fragmentation of thoughts. The textual shift from hierarchy to network can complicate
reading of textual material. It can also lead to smaller and more specialized kinds of literacies, such as those associated with particular fanzines and blogs. It is ironic how a globalized digital world could again lead to isolation and inclusivity. It is also interesting how Bolter relates the concept of cultural literacy to online reading. To function effectively, a learner must have the ability to understand idioms, allusions, and content that constitutes a culture, meaning that the reader must have not just decoding skills but also cultural background knowledge in order to “read” on the Internet.

Online Reading

All language learning, which includes reading, requires self-direction on the learners’ part. Researchers have traditionally focused on print reading, addressing such commonplace strategies as prediction, summarization, and inferencing. Tools and features that support reading in an online environment can be substantially different from features that support reading in a print environment, and that means that readers’ strategies may also differ. Online or digital reading seems in some ways to be more complex, since information is shared from remote locations. Different strategy usage can influence readers’ text processing and, consequently, readers’ comprehension (Protopsaltis, 2008).

There are several factors that literacy instructors need to consider when considering text that students are reading. Not only do instructors need to think of the medium of the word (i.e., print vs. online), but they also must consider the structure of the digital text. Many readers of online text equate digital text with hypertext.

Hypertext environments affect reading strategies, altering these strategies not only in name but also in function. In a hypertext environment, reading strategies often become
navigation strategies, additionally offering unlimited pathways and freedoms (Protopsaltis, 2008). This limitless behavior can increase the cognitive load of decision-making and visual processing (DeStefano & LeFevre, 2007). However, not all digital texts are hypertexts, meaning that not all digital reading increases cognitive load (Mangen et al., 2013).

The definition of literacy has expanded from the traditional and now not only includes the ability to learn and to comprehend but also the ability to interact with technology in a meaningful way. The Internet’s new text format can confuse and overwhelm learners because it can be different from conventional print. Coiro (2003) proposed three types of online text: linear, multiple media, and interactive. Learners, accustomed to the instantaneous response of being online (e.g., instant messaging, texting) can become frustrated with the overwhelming possibilities of online text. According to Coiro (2003), achieving comprehension can be different and more difficult because Internet readers may make quick random searches, leading to shallow, random and passive behavior—quite the opposite from what reading researchers have proposed for print reading.

During the 1970s and reformulated in the 1980s, Kintsch and van Dijk (1978) and Kintsch (1988) proposed a construction-integration model to describe reading comprehension. Kintsch and Welsch (1991) used that model as a way to explain reading that is directly related to hypertext reading. They theorized that hypertext readers construct a network of interconnected text propositions. Readers’ memory is represented in the interconnected hypertext links in two ways: knowledge activation (construction) and knowledge use (integration). Knowledge representation in the reader’s memory is in two forms: a ‘text base’
(the way an understanding is construction based on cues from text) and a ‘situation model’ (the particular kind of meaning that is influenced by the context).

For hypertext reading, two criteria are relevant: a coherence criterion and an interest criterion. Hypertext readers select nodes that are semantically related to previous passages, establishing a “coherent” reading, but they also make selections based on interest and a variety of other factors. An individual reader may choose an Internet passage depending on his or her individual interest, situational interest, or topic interest (cf. Garner, Gillingham, & White, 1989; Hidi & Baird, 1988). Selection is heavily dependent on prior knowledge, with low-prior knowledge readers needing higher coherency, that is to say, more guidance from the text and nodes. However, whether a hypertext reader has low or high prior knowledge, coherence cues are beneficial, increasing comprehension (Ainley, Hidi, & Berndorff, 2002; Kintsch, 1988; Kintsch & Welsch, 1991; Salmeron, Kintsch, & Canas, 2006). Hidi (1990) made an important point when she wrote, “Interest is central in determining how we select and persist in processing certain types of information in preference to others” (p. 549).

**Online Reading Strategies**

**Digital reading strategies.** The traditional definition of literacy has expanded to include the ability to learn, comprehend, and interact with technology in a meaningful way (Coiro, 2003). Unique reading strategies are needed for the World Wide Web (Schmar-Dobler, 2003; Sutherland-Smith, 2002). When students read on the Internet, literacy and technology come together. Traditional reading skills such as searching and evaluating can work well with digital literacy but must merge with such Internet features as blinking text, graphics, and additional colors. Text on the Internet is not static (Schmar-Dobler, 2003). Web text also contains
additional features—nonlinearity of hyperlinks means non-hierarchical strategies of thinking are required. There is a blurring of the relationship between reader and writer (Sutherland-Smith, 2002). The Internet reader must also be able to handle the demands of unlimited information prevalent on the Web (Moberly, 2010).

Readers have reported that Web reading is different from print text reading. Comprehension is different. While print reading involves active, strategic, and critical meaning construction, validated by 25 years of reading research, Internet reading can be shallow, random, and passive (Coiro, 2003). When reading print text, the reader has some stability. He or she flips backwards and forwards to scan pages within the boundaries of a single book. An on-line reader “interacts with elements that actually mutate as she reads” (Hartman et al., 2010, p. 150). The reader may start off with an initial question, which transforms as he or she clicks on a page, scans the headlines, views an audio clip, or backtracks to a different website.

An engaged Web reader constantly makes choices about what to read and then takes physical action by clicking on links or by scrolling. This circular navigation process involves reading, making a decision, clicking or scrolling, then reading again (Van den Brock, Kendeou, & White, 2009). According to Eagleton and Dobler (2007), “In the Web reading process, navigation becomes the action that facilitates the transaction between the reader and the text” (p. 34). These new sets of cognitive barriers can cause even competent readers to become cognitively overloaded and frustrated. As Coiro (2003) cautioned, ELLs can become overwhelmed with the number of choices and interactive feature, and teachers need to be aware of this problem.
Hartman et al. (2010) offer four suggestions for equipping students to read on the Web: (a) teachers must develop a cognitive view of online reading; (b) teachers must develop strategies so students can access digital information effectively; (c) students need to learn metacognitive strategies to improve their online comprehension, including self-efficacy competencies; (d) teachers themselves need new ways to assess students’ online reading comprehension.

Print reading strategies may not automatically transfer to online reading. Different strategies can influence the ways in which readers process online text—and thus their comprehension (Poole, 2008-09; Protopsaltis, 2008). Learners who are used to print reading strategies and who have little self-awareness of online reading may become confused in the digital environment. Online reading allows a reader to choose distinct parts of text in no particular order, and thus the reader has some say in deciding where the text begins or ends (Poole, 2008-09). This limitless space, where anyone can publish anything, means online reading comprehension and offline reading comprehension are not the same (Mokhtari, Kymes, & Edwards, 2008). In hypertext environments, reading strategies can become navigation strategies with unlimited pathways and freedoms (Protopsaltis, 2008).

Protopsaltis and other researchers found three main rules for using these navigation strategies: (a) coherence, (b) personal interest, and (c) location. Coherence was related to the positioning of the node. As the reader transitioned from one node to another, were both nodes within the same context? Parent nodes should link to child or sibling of the current node. Were readers personally interested in the material? Interest could be both positive or negative; a reader might continue reading and searching, or stop reading based on lack of
interest. The location of the hyperlink was another main determining factor for navigation. The reader might become confused if the links were not from left to right or from top to bottom, especially important depending on the L1 of the reader (Ainley et al., 2002; Foltz, 1996; Protopsaltis, 2008; Salmerón et al., 2006).

Protopsaltis (2008) also uncovered four main strategies for reading hypertext:

- **Serial (19%)** - Read hypertext in linear manner, follow presentation order of links, no scanning, skimming to see what other links are available
- **Serial overview (16.7%)** - read in a linear manner, readers scan to see what links are available and then choose one to proceed with in serial manner
- **Mixed (21.4%)** - readers choose some links in linear fashion and others in random fashion, no scanning or overview, readers select hyperlinks as they come across them
- **Mixed overview (highest percentage)** - readers scan document to see available links, either before or during reading, then choose one and proceed with links, sometimes linear, sometimes random

*Second language online reading strategies.* Like all readers, English language learners actively utilize reading strategies to accomplish their language-learning goals. Because of the large amount of information on the Internet, strategy use for ELLs is especially important in reading hypertext (Genc, 2011). Online reading is a constant decision making process; however, what is interesting is the dialogic perspective associated with it. Bakhtin’s (1981) metaphorical description of discourse as links in a complex chain that relate forwards and backwards aptly describes the online reading process (Park & Kim, 2011). The social aspect of electronic texts can be advantageous and disadvantageous to ELLs. Some second language
learners report that online reading is more enjoyable because of the interaction and can actually motivate them to become more active participants. They also mention using more critical reading skills, such as organizing, comparing, contrasting, and synthesizing information (Mesgar et al., 2012; Park & Kim, 2011). However, reading online can also waste time with irrelevant websites and poor web page design, which can also disrupt the reading process.

Other researchers found other ways to categorize online reading for ELLs. Konishi (2003) suggested “closed” and “open” tasks. “Closed tasks” refer to searches with a specific purpose, such as looking for specific information about a particular topic, while “open tasks” are defined as those that lead to freer browsing, such as perusing an online newspaper. Both tasks used local and global strategies, but what is unique to hypertext reading is the use of navigation to locate information. It is essential to evaluate the relevance and validity of information on the Web, although this is sometimes difficult for ELLs, whether they are higher or lower English proficiency (Akyel & Erçetin, 2009).

Because of the unique nature of hypertext, Akyel and Erçetin (2009) found that ELLs used several print reading strategies more infrequently. Navigation maps on web pages limited the use of skimming, and online glossaries meant ELLs did not have to use additional time to break words into parts to facilitate meaning. ELLs could also skip unknown words and utilize less guessing because of the presence of these glossaries. Table J.2 shows some common ELL online reading strategies.
Table J.2

*English Language Learner Online Reading Strategies*

<table>
<thead>
<tr>
<th>Metacognitive Strategies</th>
<th>Cognitive Strategies</th>
<th>Support Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Online dictionaries</td>
<td>Note taking</td>
<td>Translation</td>
</tr>
<tr>
<td>Online discussion rooms</td>
<td>Summarizing</td>
<td>Reading aloud</td>
</tr>
<tr>
<td>Search engine use</td>
<td>Paraphrasing</td>
<td></td>
</tr>
<tr>
<td>Evaluating understanding of reading texts</td>
<td>Predicting</td>
<td></td>
</tr>
</tbody>
</table>

*Note:* Strategies in this table were compiled from studies by the following researchers: Genc, 2011; Mesgar et al., 2012.

While ELLs may benefit from using various strategies to increase hypertext comprehension, some report physical difficulties when reading online. Reading online may be slower than print because of the mode of presentation. The type and size of the screen makes a difference as does positioning in front of the screen. Although readers can manipulate the screen (e.g. changing the type and size of the font; increasing the contrast between the text and background), these manipulations can be distractors affecting speed, fluency and comprehension (Aljabre, 2012; Al-Othman, 2003).

*Web 2.0*

ELLs who access digital text may have access to a blend of existing and emerging technologies. Social software and media have changed the way web pages are made and used. Readers can now interact and collaborate with each other through such means as social networking sites, blogs, and wikis (Alexander, 2006; O’Reilly, 2007). What are the benefits to students? Digital skills plus information literacies have now spawned a new literacy—social media literacy (Rheingold, 2010). Researchers have discussed five kinds of social media
literacies: (a) attention; (b) participation; (c) collaboration; (d) network awareness; and (e) critical consumption (Blankenship, 2010; Rheingold, 2010).

All five can impact the way ELLs access digital text. Attention can help an ELL decide “where and when to place one’s attention when navigating various types of social media and when navigating between social media and ‘real world’ moments” (Blankenship, 2010, p. 12). Participation implies that the reader is not passive anymore, but has become an active consumer in the digital world. “Using the technologies and techniques of attention and participation allows people to work together collaboratively in ways that were too difficult or expensive to attempt before the advent of social media” (Rheingold, 2010, p. 20). ELLs must also be knowledgeable in how social media networks operate and how to evaluate what websites and links are relevant and trustworthy (Blankenship, 2010).

For my particular study, it is important to realize that some of my participants may have been exposed to digital technology since childhood. They may think and process information in different ways from their parents and predecessors, who grew up in a much more analog world, and search out different methods and strategies than traditional cognitive and metacognitive ways (Prensky, 2006). Researchers at the Pew Institute found that almost 92 percent of 18 to 24 year olds attending community college use the Internet at home, with 78 percent of all community college students accessing the Internet at home. Seventy-eight percent of community college students use social networking and 94 percent own at least a cell phone; 65 percent of those students access the Internet on their phones (Smith, Rainie, & Zickuhr, 2011).

What does this mean for ELLs accessing digital text? Mestre and Woodard (2006) found that ELLs may have cognitive, learning, and motivational styles very different from ones
anticipated by their instructors, who may come from the mainstream culture. “Individuals tend to fall into distinct categories related to the manner in which they prefer to learn and, to a large degree, these preferences are culturally identified” (Mestre & Woodard, 2006, p. 28).

Researchers found that learning styles in an online environment can be distinctive for different ethnicities (Barron, 2002; Harris, 2005; Mestre & Woodard, 2006). For example, Asians, used to teacher-led, passive learning, may face disorientation. Online learning, which emphasizes individuality and active, social learning can pose challenges to these students (Wang, 2006). How does this relate pertain to different languages? Perhaps diverse languages access digital text in the same way that different cultural learning styles access digital text.

References (for the Extended Literature Review)


Mahwah, NJ: Lawrence Erlbaum.

Borges, J. L. (1941). The garden of forking paths. Retrieved from


http://www.theatlantic.com/magazine/archive/1945/07/as-we-may-think/303881/


http://www.pewinternet.org/2011/07/19/college-students-and-technology/


In C.E. Ball & J. Kalmbach (Eds.), *Raw (reading and writing) new media*, (pp. 183-196). Cresskill, NJ: Hampton Press.


APPENDIX J

PARTICIPANTS’ BACKGROUNDS
Lan’s Background

Lan was a 38-year-old female born in Vietnam to Vietnamese parents. She felt destined to have a career in education because her father and three older sisters set a precedence for her. Her father was an English teacher and all three older sisters were in education. Lan had always studied English, and was actually the only child in the family who truly liked learning English. To further her English and education, she applied for a scholarship from the Ford Foundation and was part of a 2006 cohort of 25 students from all over Vietnam. Lan was one of eight students sent to Hawai’i through a Ford Foundation Scholarship, where she received a Master’s degree in Applied Linguistics from Hawai’i Pacific University (HPU). After returning to Vietnam, she decided to pursue a doctorate overseas but had to quit her job because the university she was working for in Vietnam would not allow her to apply for a scholarship. She hoped to remain in the United States (U.S.) after completing her doctorate to improve Vietnam’s educational system from abroad.

The Vietnam War’s Effects

Lan’s father’s imprisonment during the war and her firsthand experience of the war influenced her ideology as a teenager and as an adult. Lan saw the war as one of ideology, between democracy and communism. There was a lot of corruption, class schisms, and sometimes class overlap. If you had education or possessed property, you were called a capitalist. Anyone who talked about Buddhism, and/or preached non-violence, was in direct conflict with communism, which advocated violence and violent revolution. Lan believed that communism might be acceptable during war, but in peacetime, democracy was needed.
She spoke of China and that country’s ideology of socialism, but said they were more economically developed than Vietnam. After the Cultural Revolution, the reputation of China’s Communist Party suffered. The Party’s strategy was to try to win over the populace by showing some success with the economy. But the Vietnamese government won over their people by winning the war. The government showed leadership during wartime; however, Lan believed that the Communist Party in Vietnam did not care about increasing economic, business, and educational benefits in Vietnam.

According to Lan, the Communist Party was a system, and a person was just an individual in the system. Any individual who disagreed with the Communist Party ideology could be arrested, even in today’s Vietnam. This is why Lan wanted to live outside Vietnam and pursue educational changes through people she knew inside Vietnam’s education system. Her desire was to make slow changes from the “bottom-up”. She believed she had more opportunities to make changes if she lived in a developed country such as the U.S., Japan, or Australia, etc., and researched second language acquisition and literacy.

As an example, before Lan came to the U.S. for graduate studies, she worked as a freelancer for the Department of Education (DOE) in her province. She and a colleague applied for a grant from the DOE and a Non-Governmental Organization (NGO). They organized a program, which brought teachers from eight districts in the province to the capital city, Ho Chi Minh City, for teacher training. Opportunities like this would be more difficult after Lan completed her PhD.

Life in Hawai‘i
Both of Lan’s parents passed away in 2005. With no ties to keep her in Vietnam, Lan applied for a scholarship to study abroad. She was fortunate to receive a Ford Foundation scholarship to study at Hawai’i Pacific University on the island of O’ahu. Out of a total of 25 students sent from Vietnam, eight traveled to Hawai’i. Her studies at Hawai’i Pacific University focused on pedagogical practices, specifically focused on marginalized groups in society, which was thought to be better for students from developing countries. Students were expected to first teach, and then focus on research later.

Lan lived on the University of Hawai’i Mānoa (UH Mānoa) campus because of the proximity of the East West Center, an education and research organization established to strengthen relations and understandings among peoples and nations of Asia, the Pacific, and the United States. One program coordinator took care of all Ford Foundation fellows’ needs, e.g. transportation, health, etc. Lan loved living on the UH Mānoa campus, taking public transportation to her classes at the downtown HPU campus and experiencing the culture of Hawai’i by browsing through O’ahu’s Chinatown on the way back to the UH campus. She was impressed with HPU because, although the university had a small number of faculty, the professors had received their PhDs from universities throughout the U.S.

*Lan’s Reading Habits*

As she read, she did not like the way some people started reading and then checked the meanings of unfamiliar words. If she read text on the Internet, she might open up a webpage to check a word’s meaning after she finished reading, but never while she was reading. She would question herself, “Can I understand the article without knowing the definition of the word?” Lan believed this stemmed from the lack of money and resources her family had while
she was growing up. When she was in high school, she didn’t have money to buy a dictionary and had no Internet connection at home. Her father gave her a dictionary when she was in college, however, it was a small pocket dictionary with limited entries. She learned early on to decipher meanings of unfamiliar words from the context of the text.

Her father initially had a lot of dictionaries and other books, but as the family experienced financial difficulties during the Vietnam War, he sold many of his books, including the dictionaries to obtain money to buy food. When Lan became a teacher, she received a prize from the British Council, which included an Oxford Dictionary, which she still had. Her father always regretted selling his books as he saw his daughter becoming interested in teaching and learning English.

In elementary school, Lan’s teachers gave students lists of words to memorize. These decontextualized words meant Lan might know the meaning of a word, but wouldn’t know how to use it. She continued this process in graduate school, keeping vocabulary notecards, with about ten words per card. She believed this process helped her learn vocabulary, although she acknowledged that it was still decontextualized.

When she was a child, Lan liked to read storybooks about martial arts. She wanted to study some type of martial art but her mother refused, so Lan resorted to reading books written by Chinese authors but translated into Vietnamese. She said she learned the names of these authors because she associated the authors with the subject. She hid these and other “storybooks” from her parents because they thought she wouldn’t finish her school assignments.
As she entered high school, teachers assigned books to read without ever mentioning the author so Lan would remember titles but not authors. And she would never look at reference lists. This changed when she entered the master’s program in Hawai‘i. She learned to pay attention to authors, and cite researchers when writing. It became important for Lan to look at the reference list and syllabus to see how topics and authors were connected and determine the authors’ philosophical and theoretical orientations.

*Journey to Vietnam and Back*

When Lan was teaching in Vietnam after her undergraduate graduation, she felt stifled in the environment fostered by the present Communist party. After returning to Vietnam from her graduate studies in Hawai‘i, she immediately wanted to return to the United States, especially because of family and work conflicts. She worked in international relations with other schools in Vietnam and the U.S. However, she felt like a tool for her company’s corruption and desperately wanted to leave the company, and leave Vietnam. When her company wouldn’t allow her to apply for a scholarship through the company to study for a PhD in the U.S., she quit and returned to the U.S. using independent means and scholarships.

After completion of her PhD, she wanted to make improvements in Vietnam’s educational system, but from outside the country. As she said, “You’re just an individual in the system. If they don’t like it, they’ll kick you out.” What she wanted to do was make slow changes from the bottom-up, staying in touch with contacts in
Vietnam. She wanted to remain outside the country because of more opportunities to obtain knowledge, especially with literacy and teaching language.

**Myriam’s Background**

Myriam was a 30-year-old female born in Saudi Arabia to Saudi parents. She was working at a Saudi university in 2007 as a preschool teacher assistant, but, to keep the position, she had to continue graduate studies, preferably internationally. She was particularly interested in literacy education, and she chose her present university because the university did not require a United States (U.S.) teaching certificate to enter the doctoral program. Myriam indicated that she would return to Saudi Arabia after her doctorate to continue research and teaching in literacy education.

**Myriam’s Travel to the United States**

While Myriam was working as a preschool teacher at a college in Saudi Arabia, she had the opportunity to attend a college fair and exhibition in the capital city of Riyadh. While visiting with the various universities from around the world, which were hosting booths, she stopped at a booth promoting graduate studies at a university in North Texas. She was interested in pursuing further studies in the U.S. but needed a college that didn’t require a U.S. teaching certificate. Because the North Texas university fulfilled these requirements, she applied to their master’s program and was accepted. She knew that her preschool teaching job would require further education so this was the perfect opportunity.

Many Saudis who studied in the U.S. had this opportunity because of the King Abdullah scholarship, which paid for all expenses, including tuition, housing, and a monthly allowance. Myriam’s husband initially was reluctant to leave his job in Riyadh but wanted the experience
of living outside Saudi Arabia. Because Myriam and her husband had two young children, they
had to come to the US on two different visas. A student can come on an F1 visa, but the family
must come on an F2 visa. Myriam’s husband eventually applied for graduate school also at the
North Texas university and obtained a Master’s in Engineering Management.

The King Abdullah scholarship requires recipients to repay their previous employer with
work time. For example, if Myriam studied in the US for five years, she had to return to Saudi
Arabia and work for her old university for five years. She was not sure she wanted to return to
her old job, because the job was not about research and publications, as academic positions are
in the US.

Schools in Saudi Arabia

Pre-school and kindergarten education is offered in Saudi Arabia but is not required.
However, elementary education, for students who were ages six to twelve, is compulsory.
Students can then progress to intermediate and secondary school, up to 12th grade. Although
public or private schools use the same curriculum (Rugh, 2002), most parents place their
children in private schools because of earlier English instruction and more resources. Home
schooling is not popular in Saudi Arabia and most parents send their children to some type of
school, although this may not always be the case in rural villages.

Only Saudis can go to public schools, except for a small percentage (5%) that might be
from other nationalities. Myriam did not consider public schools any better than private
schools, except that public schools are free. There are a variety of private schools, across all
tuition levels. She said if you are a blue-collar worker with a smaller salary, you might send
your child to a smaller private school, which might not be as good quality. In that situation, a
public school would be preferable. The most expensive private schools offer many different programs, although whether a school is public or private, they all follow the same curriculum.

Myriam did not enroll her own children in a free public school in elementary school because she wanted her children to begin learning English at a younger age. Most public schools don’t begin teaching English until the 6th grade, while most private schools start with English instruction in 1st grade. Private schools also have more resources such as “smart” boards, computer labs, field trips, and sports activities.

Myriam’s two children, however, went to a public pre-Kindergarten (pre-K) when they were in Saudi Arabia, although public pre-K is very limited. Generally, only government female workers had access to these pre-schools. She did not enroll her children in a private pre-K because she did not want her children to be forced to read and write at such a young age. She believed that private pre-Ks used aggressive methods to force young children to read and write. She was a teacher in a private pre-K and believed that their educational methods were not developmentally correct. Her four-year old son in public pre-K was taught science and math but in a playful manner. The curriculum was similar to the Montessori Method and had circle time, story time, corners, and dramatic play.

Myriam’s children spoke both English and Arabic fluently, although they didn’t know how to read and write Arabic fluently. She hired a private tutor to teach them, because she was worried their Arabic would be deficient when they returned to Saudi Arabia. Myriam tried to speak mostly Arabic at home so that the children would not forget the language, however, they spoke English when doing homework or reading English storybooks.
The Adhan

The Adhan is the Islamic call to worship, which is recited by the muezzin at prescribed times of the day. The muezzin was the person who recited the Adhan from the uppermost section of the mosque, calling the faithful to prayer. Myriam missed the Adhan and all the traditions that went along with the call. Although the muezzin called the faithful five times a day, the times were flexible. Muslims have about an hour and a half to pray after hearing the Adhan. Because Myriam lived in the U.S., with few places to pray in public, she sometimes combined two prayer times together. There were flexibility in rules if a Saudi lived overseas.

When the Adhan is called, everything closed. All businesses and restaurants, except for hospitals, closed, because everyone needed to pray. Saudi life is controlled by the call five times a day. Saudis will say, for example, if they are in a meeting, “after morning prayer, after afternoon prayer.” When shops close depends on the prayer. The Adhan is recited at 3 am, at sunrise, in the afternoon, between afternoon and sunset, at sunset, and one in the evening. The recitation of the Adhan lasts between 45 minutes to an hour for each prayer. Although five prayers a day may seem excessive, nothing closed early in Saudi Arabia and nightlife lasted until midnight.

Myriam’s English Language Development

Myriam started learning English in pre-K. She believed that learning a language depended on one’s genetic makeup, mentioning that her grandfather spoke five languages. Environment and genetics influenced the ability to learn languages easier than other people. No one in her father’s side had problems learning English, including those who had not left the
country. For example, Myriam’s 17-year-old sister, who had never studied abroad, spoke fluent English, even though she was in a private school that did not teach English well.

Myriam’s cousins and uncles on her father’s side of the family had no problems with learning English, as compared to relatives on her mother’s side of the family. Very few of her mother’s family spoke English, even though they went through the same educational system. She thought that perhaps it was a different motivation or an emphasis on importance. In Saudi Arabia, learning English was important—the ability to speak another language meant one was more educated. Two of her brothers, who only attended public schools, never finished their undergraduate education but both spoke fluent English.

*Family Life in Saudi Arabia*

If a son or daughter was not married, they continued to live at home. Myriam had a 17-year-old sister, and two brothers, 25 and 28, who lived at home because they were not married. Her unmarried uncle, who was 50 years old, lived with his mother, although he had his own “place,” an apartment in the complex. It was very rare to see someone living by him or herself, although if you saw someone, it was a male. Girls would never live by themselves, unless they were divorced, had a lot of children and/or did not want to go back to their parents’ house.

I asked Myriam what families would do if the child had a good job in a city farther away. She said it was very rare because most people do not like to live in a large city such as Riyadh. Even in smaller cities, the only job where someone might live in a different place would be a teacher. However, transportation was usually provided to the school and then back to the parents’ houses. If a teacher’s job was further away, teachers would live in a dorm. It was
never acceptable to be a single female living by yourself, but it was all right for males, especially those working with the oil companies. However, parents would usually try to get their sons married before they traveled to those jobs too.

The King Abdullah scholarship program, begun seven years ago, sent thousands of students abroad. There were over 100,000 Saudis in the U.S., with a similar number in the United Kingdom, China, Australia, and Europe. That outflow prompted changes in Saudi society. Parents finally agreed to send their daughters to study abroad, and in many cases, no one from the family came to live with the daughter. Now there were Saudi girls living by themselves, which Myriam said her grandmother would find absolutely unacceptable. I asked Myriam what happened when girls studied abroad and became independent, and asked if that would cause problems. She said that Saudi society might change and that she hoped for a change when she returned to Saudi Arabia. Myriam felt that she and her husband did not belong in the U.Ss but that they would no longer “fit” into Saudi society either. They felt caught “in the middle.” Myriam, herself, liked some things in the U.S. but could not see herself remaining in the United States.

When Myriam thought about returning home, she realized that there were a lot of barriers and things she wanted to change. For example, people were not as friendly in Saudi Arabia and stores did not offer great customer service. For example, she said she would never receive an apology for any mistreatment at a restaurant. There had been shop owners in Saudi Arabia that had not treated her well and she only received an apology because she was more aggressive about pursuing it. She was not sure how she was going to deal with the changes in Saudi society when she returned. However, she enjoyed her stay in Texas, even though she
was initially warned not to go to Texas because people were “rednecks and racist.” She had not found this at all. In fact, everyone was extremely friendly, perhaps because her school was located in a small university town.

Bilal’s Background

Bilal was a 36-year-old Pakistani male who came to the U.S. out of an interest in studying policy and politics as they relate to curriculum. Because his studies were funded by the United States Agency for International Development (USAID), he was required to enroll at an American university. He chose his present university for its inclusion of policy issues in curriculum studies. He was particularly interested in comparing U.S. curriculum and policy to Pakistan’s curriculum and national educational policy.

Bilal’s Travel to the United States

Bilal’s interests were policy and politics as they related to curriculum. He was part of the Education Department in Pakistan for eight years as a Deputy Director but decided to study in the U.S. for higher education. Out of a group of students across Pakistan, he was one of 22 people selected to study in the U.S. with support from the USAID. The USAID was a humanitarian non-governmental organization (NGO) established to help developing and under-developing countries with agriculture and education.

The selection process for study in the U.S. was a one and a half-year process. Bilal was required to take the Test of English as a Foreign Language (TOEFL) and the Graduate Record Exam (GRE) and also had to write three to four essays with problem statements explaining why he wanted a PhD. He represented a specific group of students from poor backgrounds. Although a gifted student, he had no home, school, or community support and had to study
English on his own. Bilal knew English was important to success in life; English was part of the elite class and led to a higher rank for public service. Although there were English centers in his province, his family had no money so he learned English from other students who had attended the centers.

Bilal received a master’s degree in English literature from a university in Balochistan province, one of four provinces in Pakistan. Although his province, Balochistan, is the largest in area, it is the smallest in population, and in Bilal’s opinion, was considered the lowest socioeconomically and most backwards in education.

Bilal’s mother tongue was Peshto, but he also spoke Urdu, English, and two other provincial languages (Punjabi and Arabic). Most educated people in Pakistan spoke at least three languages. Pakistan had six major languages; however, there were more than 60 other languages spoken throughout the country. A Pakistani student studied at least four languages from grades six to eight—Urdu, his or her mother tongue, Arabic, and English.

He initially had some problems when he first arrived in the U.S. because he had studied British English in Pakistan, and had to adjust to American English, and American academia and culture. And though he had mixed feelings initially about coming to the U.S., especially since he left a wife and daughter at home, he always thought about the larger goal of why he studied in America. He believed his English had improved since his arrival and appreciated the scholarly discussions and challenging assignments.

His job as Deputy Director entailed regular visits to schools and in-service teacher training. Pakistanis are encouraged to attend school but it is not required. He believed the
biggest gap was between theory and practice, and policy and implementation. An official curriculum may exist but implementation was questionable. **How Bilal Read**

While learning English, Bilal primarily read essays from one particular writer in Pakistan, who wrote the book, "Exploring the World of English" (Shah, 1978), which focused on written English. Shah was a professor of English literature, living in Pakistan but writing in English. Shah’s book was considered “The Bible” for students who wanted to study written English in Pakistan. Although there were a lot of international and Internet sources today, Pakistani students who wanted to learn English still used this text.

Bilal also spoke about an examination for Central Experience Services, called the CECIS. He considered it one of the most difficult exams in the world, and interestingly it contained Shah’s essays as examples. He believed he passed the exam because he had read Shah’s essays word-by-word and scrutinized the sentence and paragraph construction.

However, when he arrived in the U.S. and began reading academic articles for his doctoral coursework, he experienced difficulties because he was used to British English. This was the reason he gave for reading academic articles word-by-word and taking notes. As he read articles, he found a quiet place, skimmed to get the gist related to the article topic, reflected and then asked himself about the point of the article. If he was still confused, he read the article again with more concentration and questioning.

**Notetaking**

In Bilal’s own words, he described his method for taking notes:

Generally what I do when I complete an article, I try to write in a very short way, in my own words what I learned from this article, and I try to pose some questions. Since if I don't agree with the writer. Because that is the way, maybe I'm wrong or maybe the
writer is right, but I pose questions if I disagree. Maybe it's the lack of my knowledge or the setting is different or the background or the experiences.

Bilal also said that whenever he read articles or books for an academic course, he summarized the notes on a Power Point slide, using one slide for each article or book. Each slide contained the central idea and then important points related to the idea. For longer texts, he created several Power Points, and then organized the Power Points into categories such as curriculum, method, policy, and qualitative research. This made it easier for him to find an article quickly, for example, when he needed an article on critical inquiry, he found the Power Point slide easily.

Print vs. online

Bilal preferred to print out the articles that he read, because he liked to sit on the floor to read. Although there was Internet access in most cities in Pakistan, access was slow. Because of this, Bilal would either sit on carpets and pillows or lie on the floor, with a printed copy of the course material and a cup of tea in his hand.

After moving to the United States to study, he learned to read online, although this was not his preference. He did not have space to sit or lie on the floor in his office, so read articles on the computer, using online annotating tools such as highlighting, underlining, and note-taking.

Schools in Pakistan

Primary and middle school education in Pakistan was free for every child. However, out of the seven million people in Balochistan alone, 1.4 million children did not attend school. Parents of a lower socioeconomic status wanted their children to work and contribute to the family, and there was no government action to force parents to send their children to school.
Most Pakistanis parents were uneducated and did not understand the importance of education.

With time, however, Bilal believed this would change.

There were three different school systems in Pakistan. Public school served approximately 80% of the population, because tuition and books were provided free until grade ten. There were other private schools but those were very expensive, and generally attended only by children of the elite class.

The third system was the Madrassas seminaries. In these seminaries, Islam and other religious topics were taught. Bilal said that the Madrassas taught using rote memorization and topics such as science and math were forbidden because the Madrassas scholars believed that such topics belonged to the West (countries such as Great Britain and the U.S.). The Madrassas arose after the liberation of India from Great Britain, as a response to a separate identity for Islam.

Poorer Pakistani families believed that sending a child to a Madrassas for religious education would bless the family. It was a great blessing for the family if a child studied the Koran and memorized the text. Although some public and private schools also taught the Koran, Madrassas seminaries provided food and other supplies, which was a great benefit to poorer parents. Donations to the seminaries were seen as bringing good works and blessings for the family.

Bilal’s goal when he returned to Pakistan was to work with these Madrassas schools to convince them to revise their curriculum and remove their fears of science, technology and globalization. Scholars at these seminaries were slowly accepting scientific thought, which was previously seen as a sin or interference against the natural order of the world. One of the
problems with the Madrassas was that no one objected to the seminary education because of the religious blessings, but when students graduated, they could not find a job or even perform manual labor because they did not have the right skills. Bilal believed that only one in a hundred might find a job in a mosque.

Bilal initially faced resistance from his family and tribe when he first attended elementary school. However, his academic performance and character convinced the tribe to send other children to school, viewing Bilal as a role model for his community.

One of the major problems, in Bilal’s opinion, was the subjugation of females in Pakistan’s society. Females are expected to remain in the home, raising families and attending to housework. Bilal and his older brothers promoted female education but faced a lot of resistance. Parents may have been reluctant to send their sons to school but were adamantly opposed to having their daughters attend. Bilal’s family eventually sent all their daughters to school, although he spoke of a battle with his older brother who initially refused to send his own daughter to school. Bilal enrolled his niece five times before his brother finally relented and allowed his daughter to be educated. His niece studied to be a botanist and conducted research overseas, and is now a role model for the other girls in the family and tribe.

Another problem in Pakistan was the dropout rate. Many students dropped out in middle school, with the number increasing in high school. To receive a high school degree in Pakistan, a student must attend public school from grade one to grade ten. Intermediate colleges offer grades 11 and 12, and universities offer undergraduate degrees.

Each school assessed students with annual exams for each subject from grades one to eight. When students reached grades nine and ten, a separate examination board assessed
students with a summative essay exam, based on nine or ten subjects. Students had to answer five out of ten questions. There was also a reading comprehension exam for math and science. Although there was no exam such as the Scholastic Aptitude Test (SAT) in Pakistan, students had to take the GRE to enter doctoral studies.

*Bilal’s Plans After Graduation*

After completion of his doctorate, Bilal planned on returning to Pakistan. He would return to his previous department; where the primary objective of the program was for Bilal to attend school in the U.S. and return to serve his department and the people of Pakistan. The two-year residency requirement of his visa meant Bilal could not return to the U.S. for two years after graduation. Bilal’s planned topic for his dissertation focused on the national curriculum. In 2010, Pakistan passed a constitutional amendment giving more control to the provinces; however, schools still provisionally followed the national curriculum. By 2018, provinces would have to develop their own curriculum because of the diversity of the provinces, in terms of languages and culture. An Interprovince Coordination Committee would be in place to monitor progress.

Bilal’s work would focus on policy and curriculum and the perception and visions of the stakeholders—teachers and administrators. Curriculum experts developed the previous national curriculum, with no input from teachers and others more closely related to the curriculum. Although he was interested in globalization, Bilal realized that local realities meant he also needed to preserve local values. How can Pakistani students sustain their local values while embracing globalization? He was aware that the U.S. and countries in Europe had made a lot of advancements, but believed that these countries had ignored realities.
Kyung’s Background

Kyung, a South Korean male, also 36 years old, chose graduate school in the United States (U.S.) because of future employment possibilities. Many South Koreans believe that Korean employers prefer students from U.S. universities, even over graduates from Australian or British universities. Kyung chose his present university and an educationally oriented program because of the more qualitative aspects related to his interests in second language acquisition (SLA) pragmatics.

Kyung’s Schooling

Because Kyung received his master’s from a university in the Dallas-Ft. Worth area, he was familiar with the area and loved the area and surroundings. Not many universities offered programs in SLA pragmatics but his present university had professors who were interested in this subject.

Education in Korea is extremely focused, with, in his opinion, too much of a focus on grades. Nine years of education is compulsory, six years of elementary school, and three years of middle school. However, it is expected that everyone continues beyond middle school. “Education fever” is a famous saying in South Korea, with people’s self-esteem based on the time, effort and money spent on education. Kyung said that more than 95% of high school graduates go to college; however, many of these college graduates had difficulty finding jobs and as Kyung stated, “even janitors have bachelor’s degrees.”

In the U.S., Asian students are famous or infamous for their education profiles, although in South Korea, these high-achieving students would be thought of as just average or mediocre. South Korean schools have end-of-year exams and students must pass these to advance to the
next grade. Students could retake the exam the following year, but Kyung was not sure about these statistics because no one in his high school had failed the exam. He thought it was a result of being raised in the Gangnam district of Seoul, which was considered the center of education in South Korea. To improve their grades, students who lived in the Gangnam district would attend Saturday or Hagwon schools for further education (or cramming).

How Kyung Read

Although the article used for this study was online, Kyung actually preferred reading printed versions of articles. His process was to begin reading, and if there was confusion, he would skim the article, and then read repeatedly until he understood. Kyung did not like to take notes but would highlight, preferring to highlight on paper.

He was knowledgeable in using online annotation tools but always printed out a paper version, especially if it was an academic article. It actually depended on the format. Kyung would only read comics on paper, but would read newspapers or other non-academic articles online because of a better format for skimming, scrolling and using hyperlinks.

Kyung’s Plans After Graduation

Because both of Kyung’s parents were university professors, he always knew he would go to college in the U.S. His parents believed that if Kyung wanted to be a professor, he had to go abroad and attend a foreign university. What was interesting is that although there were many South Koreans in the area where Kyung studied, his focus was on improving his English. This meant that he spoke only English, did not eat much Korean food and did not socialize with only Korean-speaking people. He realized that some people thought he became too
Americanized but even in South Korea, he said, “I didn’t eat much Kimchee.” Although his father would like him to return to South Korea, Kyung would be happy remaining in the U.S.

Kyung realized that South Korea’s education inflation might affect him if he returned to South Korea. He thought he would just be “another PhD.” And he did not like the weather in South Korea, especially the humid, hot summers, where he found people would become ill because of the weather. Although Seoul had air conditioning, he discovered that there was a national agreement to standardize the temperature, and air conditioners could not be set lower than 27 or 28 degrees centigrade, 82 degrees Fahrenheit.

Kyung’s parents’ marriage was arranged through a matchmaker, and Kyung realized that if he returned to South Korea, that might happen to him too. Arranged marriages, or at least arranged introductions were not common anymore but he believed his father might consider an arrangement for him if Kyung returned home.


Retrieved from


M. Holquist, Trans.). Austin, TX: University of Texas Press.

Trans.). Minneapolis, MN: University of Minnesota Press.

graduate students: A case study. *Reading Matric: An International Online Journal, 7*(1),
30-50. Retrieved from

_____aspx?direct=true&db=ehh&AN=24995802&scope=site

information*. Cambridge, MA: Massachusetts Institute of Technology.

Barron, P. (2002). Providing a more successful education experience for Asian hospitality
management students studying in Australia: A focus on teaching and learning styles.

*Journal of Teaching in Travel and Tourism 2*, 2, 63-88.


Blankenship, M. (2010). How social media can and should impact higher education. *Hispanic Outlook, 11-12.*


Multiple perspectives on research and practice (pp. 131-164). New York, NY: Guilford Press.


Kolikant, Y. B-D. (2010). Digital natives, better learners? Students’ beliefs about how the Internet influenced their ability to learn. *Computers in Human Behavior, 26*, 1384-1391.


Pang, S. M. (2006). Strategy use in advanced EFL readers: Identifying and characterizing the patterns of reading strategies employed by tertiary EFL students. (Order No. 3254511, The Chinese University of Hong Kong (Hong Kong). ProQuest Dissertations and Theses,


