Article

English Language Learners' Strategies for Reading Computer-Based Texts at Home and in School

Ho-Ryong Park[a] *and Deoksoon Kim*[b]

Abstract

This study investigated four elementary-level English language learners' (ELLs') use of strategies for reading computer-based texts at home and in school. The ELLs in this study were in the fourth and fifth grades in a public elementary school. We identify the ELLs' strategies for reading computer-based texts in home and school environments. We present a taxonomy of five reading-strategy categories, which includes 15 total strategies that they pursued at home and in school. We describe the central role of dialogue in helping ELLs learn to read computer-based texts: The learners engaged in real and virtual dialogues with adults, peers, authors, and themselves, in ways that enhanced their development of effective reading strategies. We discuss pedagogical implications of our findings, describing how parents and teachers might work separately and together to facilitate ELLs' reading in today's learning contexts that include electronic literacies.

KEYWORDS: ELLs' READING OF COMPUTER-BASED TEXTS; ELLs' READING STRATEGIES; ELECTRONIC LITERACIES; HYBRID READING AND LEARNING; DIALOGISM

Introduction

English language learners (ELLs) represent 11% of the U.S. school population (O. Lee & Buxton, 2010), and their academic and personal success is critical for the future of the country. Reading is essential to ELLs' academic success

Affiliations

[a]Murray State University.
email: phr1017@gmail.com

[b]Lynch School of Education, Boston College.
email: deoksoon.kim@bc.edu

(Cummins, 1991), to their language learning (Eskey, 2005), to their navigation of everyday life (Perez, 1998; Rosenblatt, 1982), and to their critical awareness of the world (Kim, 2011). However, ELLs are predominantly taught to read using pedagogies derived from first-language (L1) reading research. We urgently need more research on second-language (L2) reading.

The demands and affordances of reading are also changing rapidly as new technologies permeate our lives. Students must learn to use and understand social media and other new technologies as they interact with and transform the world (Kellner, 2001). This requires that they learn to engage with multimodal (Anstey & Bull, 2006; Chatel, 2002), dialogic texts (Bakhtin, 1986). In new literacy contexts, *text* includes diverse semiotic modes including electronic texts, pictures, audio, and video, as well as traditional paper-based texts. In the contemporary globalized, technology-saturated world, we need more research on how second language learners read multimedia texts.

Regardless of language level, all readers use strategies to make their reading more efficient and effective (Oxford & Crookall, 1989). Individual readers vary in the strategies they adopt, and the same reader might adopt varying strategies for different contexts and different kinds of text. Skillful readers adopt reading strategies—like thinking about the topic, moving back and forth in the text, monitoring their comprehension, and planning while they read—more frequently than unskilled readers (Cho, 2013; Cho & Afflerbach, 2015; Cohen, 2011; Lau, 2006; Tsai, Ernst, & Talley, 2010).

Literature Review

Electronic Literacies

"Electronic literacies" are screen-based literacies, ones deployed when using computers (computer literacy), interacting through computer-mediated communication (CMC literacy), understanding and developing multimedia information (multimedia literacy), and locating and evaluating online resources (Warschauer, 1999; 2002). The growth of technology in education, including multimedia, hypermedia resources, and mobile devices and applications, has spurred the development of electronic literacies (Beatty, 2010; J. Lee, 2006; Simpson, 2005; Liu, Navarrete, & Wivagg, 2014; Rossing, Miller, Cecil, & Stamper, 2012; Solomon & Schrum, 2010; Warschauer & Matuchniak, 2010).

Reading computer-based texts is different from reading on paper (Park & Kim, 2011). It requires readers to adapt their text-based reading strategies, and it brings both challenges and opportunities (McNabb, Hassel, & Steiner, 2002; McPherson, 2005; Park & Helsel, 2008; Zenotz, 2012; Zhang, 2013). McNabb et al. (2002) and McPherson (2005) suggest that Internet- or computer-based learning activities make reading more enjoyable and motivate readers to become active participants. These activities also encourage readers

to use critical reading skills and improve their reading fluency. By reading computer-based texts, readers learn not only traditional reading skills, but they also become familiar with new technological tools, resources, and communities (McNabb et al., 2002; Serafini, 2010, 2012; Simpson, 2005).

However, readers often waste time by navigating to irrelevant websites, and poor page design may disrupt their online reading process. Some content and linked websites can also be difficult for readers at lower levels (Heller, 1990; McPherson, 2005; Scheiter, Gerjets, & Heise, 2014). To understand computer-based texts clearly, we need to understand the characteristics of hypertext and hypermedia.

Hypermedia

Hypermedia refers to a text with links to multimedia formats that provide information, employing words, still and moving pictures, and sound (Kommers, Grabinger, & Dunlap, 1996; McKnight, Dillon, & Richardson, 1996). These links allow readers to access other resources and authors to present large amounts of information in a more efficiently interconnected way (Kommers et al., 1996; McKnight et al., 1996; Scheiter et al., 2014). Similarly, glosses enable L2 readers to connect between dictionary definitions and the use of words in diverse texts, allowing readers to follow texts without much interruption and to read them more independently (Nation, 2001; Stewart & Cross, 1991). In addition, glossing has positive effects on text comprehension (Akbulut, 2007; Jacobs, Dufon, & Hong, 1994). Research suggests that, when learners engage in tasks in hypermedia learning contexts, they learn and retain vocabulary better, and they are more successful in reading comprehension (Al-Seghayer, 2001; Chun & Plass, 1996; Türk & Erçetin, 2014). Furthermore, when verbal and visual resources are combined in a single gloss, language learners are more willing to interact with the text (Türk & Erçetin, 2014). Even though the use of hypermedia in classroom contexts requires a new level of complexity, knowledge, and practices, it enables learners to be engaged collectively in completing tasks (Sandberg, 2013; Thomas, 2014). In addition, appropriate training facilitates learners' self-regulatory behavior during learning (Bannert & Reimann, 2012). Language learners have positive attitudes towards foreign language reading and vocabulary learning in these hypermedia reading contexts (Akbulut, 2007).

Online Reading Strategies

Many researchers have shown how strategies can help students learn to read more effectively (O'Malley & Chamot, 1990; Oxford, 1990; Oxford & Crookall, 1989; Park & Kim, 2011). Language learners adopt various strategies, but in many cases they do not recognize that they use strategies, and few take full

advantage of the broad range of available strategies (Oxford & Crookall, 1989). The learners also use diverse strategies when they read texts in Internet- and computer-based text reading environments (Afflerbach & Cho, 2008; Chou, 2012; Coiro, 2003, 2011; Coiro & Dobler, 2007; Elshair, 2002; Hsieh & Dwyer, 2009; Huang, 2013; Huang, Chern, & Lin, 2009; Park, 2012; Park & Kim, 2011).

Coiro (2003) suggests nonlinear hypertext, multimedia texts, and interactive texts as three types of electronic texts. She argues that these texts offer readers both new supports and new challenges. Some researchers have found language learners using new reading strategies in online learning environments, and others have reported that readers transfer paper-based text reading strategies to computer-based reading (Elshair, 2002; Hsieh & Dwyer, 2009; Park, 2012). Other researchers have emphasized that readers need to combine the strategies for both paper- and computer-based texts to understand texts on the Internet (Afflerbach & Cho, 2008; Coiro, 2011; Coiro & Dobler, 2007). Elshair (2002) focuses on readers' strategies of modifying text features, navigating web resources, personalizing their behaviors, reacting to problems, and evaluating web resources. Among the relatively few studies focusing on L2 reading strategies in computer-based reading contexts, studies using a dialogic perspective are particularly rare. In understanding ELLs' reading as a *meaning-making process* (Goodman, 1984), it is important to observe their reading processes from a dialogic perspective because readers have diverse opportunities to dialogue with texts, alone and with others, when reading computer-based texts. This study seeks to shed light on ELLs' reading processes and their use of reading strategies when they read computer-based texts in diverse contexts.

Theoretical Framework

Dialogism

Since literacy is a dialogue between the reader and the text within a social context (Rosenblatt, 1986), dialogue is a critical concept in reading. Bakhtin (1986) refers to dialogue with "[t]wo speech works, utterances, juxtaposed to one another, [which] enter into a special kind of semantic relationship that we call dialogic" (p. 118). Bakhtin (1981, 1986) describes how every utterance has a dialogic relationship with preceding and future utterances. Speakers borrow words from the collective, and these words have meaning in part because they are associated with the prior dialogues and the contexts in which they have occurred. Utterances also "address" other utterances that precede and follow them, adjusting themselves to what others have said and what we anticipate they might say in response. These dialogic interactions work in the literacy events as well, so readers dialogue with texts. Bakhtin (1986) also notes, "Dialogue may be external as between two different peoples or internal as between

an earlier and a later self" (p. 427). "Word" or "utterance" is the main unit of meaning, not the sentence, which is abstract out of the context. Meaning is formed by readers' consistent dialogue with the author's or others' texts, which are formed by others' words and expressions during reading. Readers also dialogue with themselves while reading. Thus, reading becomes cultural and political.

From a Bakhtinian perspective, we consider L2 readers to be active participants in reading activities, positioning their understandings in response to other utterances they have heard, other texts they have read, and the broader social universe of utterances and responses. In addition, while reading computer-based texts, L2 readers use dynamic strategies dialogically and enhance their reading processes. In this article, based on the understanding of reading as dialogue, we examine L2 learners' reading strategies in computer-based reading environments, studying how they place texts in the context of their own and others' utterances as Bakhtin described.

Research Questions

To better understand L2 learners' use of reading strategies when they read computer-based texts at home and in school, we address two research questions:

1. What strategies do elementary-level ELLs dialogically use when they read computer-based texts at home and in school?
2. What are the similarities and differences in ELLs' strategy use at home and in school?

Research Method

To identify elementary-level ELLs' use of reading strategies and their reactions when they read computer-based texts at home and in school, we conducted a qualitative case study (Merriam, 2009). Each case in this study (n = 4) focuses on one ELL and his or her strategies. Because a researcher is "the primary instrument for gathering and analyzing data" (Merriam, 1998, p. 20), we were conscious of our roles as participant observers and collected data from multiple and overlapping resources in order to triangulate and avoid limited perspectives (Patton, 2002).

Contexts

The sites of this study were four ELLs' home and school contexts. We visited each site in the spring, summer, and fall of 2010. The school contexts included three elementary schools in the Oracle Unified School District in the southeastern U.S. The schools will be referred to as Dover Elementary School, Hilley Elementary School, and Haynes Elementary School (all pseudonyms).

In each setting we observed students and identified their use of strategies as they read computer-based texts.

The key participants of this study were four ELLs; their parents and teachers also provided information that helped us understand the students' literacy experiences. The ELLs were Jae-Hoon, Kyoung-Min, Stacy, and Brian (all pseudonyms). They were fourth or fifth graders, and their English proficiency levels were between "Intermediate Mid" and "Advanced Low," as defined by the American Council on the Teaching of Foreign Languages English proficiency guidelines (ACTFL, 2012). The participants' information is presented in Table 1.

Table 1: ELL's Information as of August 2010

Participant	Grade level	Age	Original nationality	Schooling in the U.S. (years/months)	Level of English proficiency	School
Jae-Hoon Woo	5	11	Korean	2/7	Advanced Low	Dover E.S.
Kyoung-Min Bae	4	10	Korean	4/6	Advanced Low	Dover E.S.
Stacy Shim	5	11	Korean	2/9	Intermediate Mid	Hilley E.S.
Brian Te	4	10	Filipino/ Chinese	3/4	Intermediate Mid	Haynes E.S.

Jae-Hoon was a fluent speaker of Korean and studied mostly in the mainstream classroom. Jae-Hoon was an active participant in class and had good relationships with his classmates. Kyoung-Min barely spoke Korean, and his mother attributed the loss of his L1 to stress deriving from the new learning environment and linguistic difficulties. He spent more of his time in the mainstream classroom, but went to a learning lab every day for 30 minutes because of educators' concerns about his academic performance. Stacy experienced difficulties with English when she first came to the United States, she had adjusted relatively well to the U.S. educational system by the time we observed her. Brian had not learned English when he left the Philippines and he had a difficult time when he first came to the United States. By the time we met him, however, he was feeling optimistic and had overcome most of his earlier difficulties.

Data Collection

From spring 2010 until fall 2010, we collected data from multiple data sources: (1) observations and ELLs' verbal protocol reports, (2) interviews, (3) documents, and (4) field notes and reflective journals.

In the home context, we visited each ELL's home four or five times during the research period and observed their verbal protocol sessions for 2–4 hours as they read computer-based texts. At home, the ELLs selected and read the computer-based texts that they would normally be reading. Their reading was voluntary, and they were allowed to choose their own reading materials, so they read both academic and entertainment-oriented texts. The focus of the observations and verbal protocol sessions at home was on the ELLs' experiences in computer-based text reading and their use of strategies. While we observed their reading activities, we also collected verbal reports while the ELLs vocalized their thoughts while reading the texts. The concurrent verbal reports provided a window to the ELLs' thinking processes. Through the concurrent reports they directly vocalized thoughts in their short-term memory (Ericsson & Simon, 1993).

In the school contexts, we also observed the ELLs' classrooms and computer labs at Dover, Hilley, and Haynes Elementary Schools once every week or two. Each visit lasted between two and four hours, and we observed each ELL approximately 30 times. The classroom teachers encouraged the ELLs to read particular types of computer-based texts, depending on the goals of the classes, and the ELLs verbally reported what they thought and did while reading.

Interviews include informal conversational interviews and semi-structured interviews with the ELLs and their parents. We conducted approximately 30 informal conversational interviews for 5–10 minutes and one semi-structured 20-minute interview with each ELL, and we also conducted one 30-minute semi-structured interview with at least one of each ELL's parents.

The documents included the ELLs' reading samples, assignments they produced, teachers' lesson plans, teachers' websites, report cards, and school handouts during the research period.

The field notes contained our observations, experiences, interpretations, insights, working hypotheses, and initial analyses, together with descriptions of participants and events (Merriam, 1998; Patton, 2002). In addition to field notes, we used a reflective journal to record what we could not record during observations.

Coding and Analysis

For data analysis, we coded the data by developing categories based on semantic relationships. We used ATLAS.ti, a qualitative data management tool, to organize the data for coding. To prepare the data, we transcribed the ELLs' recorded verbal reports and the interviews with the ELLs, teachers, and parents. In the first step of our coding, we identified 32 themes, such as "Hypermedia," "Dialogue," "Sharing the Information Source," "Dragging and Dropping,"

"Using Software," and "Using Hardware." However, while reviewing the data and themes, we only selected 15 salient coding schemes: web pages, hyper-media, reading patterns, prediction, dialogues, evaluation, inference, connec-tion, comprehension, preview, purpose, navigation, computer skills, reference, and information sharing. We did not consider others because they did not contribute to robust patterns that addressed our research questions. In the second step, we asked a "critical friend," a colleague who was familiar with rel-evant theory and methods, to code a portion of the data (Rossman & Rallis, 2012), checking that our coding was not idiosyncratic. When any discrep-ancy occurred, we discussed it until all three coders agreed on the themes and codes. In the third step, we reread the final codes and identified themes, the computer-based text reading strategies of this study. In the final stage, new evolved themes were compared and contrasted simultaneously and continu-ously (Merriam, 2009).

In addition, we referred to other data sets, such as field notes, reflective journals, and documents, and found the situational and contextual informa-tion to support the data analysis processes for the verbal reports and inter-views. We constantly reflected on the results to create emerging themes. We maintained awareness of our positionality as participant observers, clearly presented our perceptions and theoretical framework, and triangulated the data sets and data analyses (Lincoln & Guba, 1985). During the process of data analysis, we communicated with the participants via email or over the phone and conducted member checks to confirm our understandings and findings.

Findings

Use of Strategies

As mentioned above, 15 reading strategies emerged: (a) accessing a web page, (b) accessing hypermedia, (c) adjusting the reading pattern, (d) confirming a prediction, (e) dialoguing, (f) evaluating the text and deciding what to read, (g) inferring from the text, (h) making a connection, (i) monitoring compre-hension, (j) previewing, (k) setting up the purpose, (l) scrolling up and down and moving back and forth, (m) using computer skills and devices, (n) using references, and (o) sharing an information source at home and in school. We have grouped these strategies in the five categories represented in Table 2. We will illustrate each strategy in turn.

The first step for ELLs was to search for and access computer-based texts at home and in school. To access computer-based texts, the ELLs adopted strat-egies of accessing a web page, accessing hypermedia, and using references, all basic skills of information literacy.

Table 2: *Five Categories of Computer-Based Text Reading Strategies*

	Categories	Computer-based text reading strategies
1	Accessing computer-based texts	Accessing a web page
		Accessing hypermedia
		Using references
2	Use of computer literacy	Scrolling up and down and moving back and forth
		Using computer skills and devices
3	Making critical decisions	Setting up the purpose
		Previewing
		Evaluating the text and deciding what to read
4	Dialogic connection	Dialoguing
		Making a connection
		Sharing an information source
5	Active participation in computer-based text reading activities	Adjusting the reading pattern
		Monitoring comprehension
		Inferring from the text
		Confirming a prediction

Accessing a web page included searching for and retrieving computer-based information. As Kuiper, Volman, and Terwel (2005) argue, readers can search for information on the Internet in various ways. The ELLs searched for and accessed web pages by (a) typing a web address into the address bar, (b) typing keywords into a search engine, (c) clicking a hyperlink on an open website, and (d) clicking a bookmark. When the ELLs typed web addresses into the address bar, they drew on both paper-based and computer-based texts, as well as their memories. They also used online search engines, hyperlinks, and bookmarks to search for websites. Kyoung-Min, Stacy, and Brian shared computer game bookmarks with their siblings, and Jae-Hoon used the iTunes bookmark to download Korean songs.

The ELLs clicked on hypertext and hypermedia to access textual and multimedia resources such as images, sounds, videos, and computer games. The ELLs accessed diverse websites, such as Study Island (http://www.studyisland.com), PBS (http://pbskids.org), and Beestar (http://www.beestar.org), both for information and for fun. We counted how many times they accessed each type of text during their reading sessions, and Table 3 shows the frequency at home and in school. Textual resources were ubiquitous and most frequently used both at home (41.4%) and in school (42.4%).

The ELLs also accessed images at home (8.7%) and in school (36.4%). For example, when Jae-Hoon read an online article, "Success! Sun's Rays Fuel Flight" (http://www.scholastic.com/browse/article.jsp?id=3754485), he referred to images and predicted the content of the text without reading it all.

Table 3: Frequency of Strategies of Accessing Hypermedia at Home and in School

	Sub-category	Frequency at home (%)	Frequency at school (%)
1	Accessing a textual resource	41.4	42.4
2	Accessing an image	8.7	36.4
3	Accessing a video	27.6	12.1
4	Accessing a computer game	18.1	9.1
5	Accessing an audio file	4.2	0.0
	Total	100	100

The ELLs accessed video resources at home (27.6%) and in school (12.1%). At home, Kyoung-Min watched an introductory flash video about black holes at the Hubblesite (http://hubblesite.org) website, and Jae-Hoon watched several videos on YouTube (http://www.youtube.com) and learned how to fix his iPod Touch. At school, the ELLs did not as frequently select video resources by themselves, but teachers did often show videos to students. In both contexts, the ELLs actively accessed and appreciated video texts.

The ELLs accessed computer games at home (18.1%) and in school (9.1%). For example, Stacy frequently accessed two Korean Internet portal sites, Naver (http://www.naver.com) and Daum (http://www.daum.net) in order to play computer games at home. Jae-Hoon and Stacy also had chances to play educational computer games at school, but these opportunities were limited. Audio files were the least frequently accessed resource both at home (4.2%) and in school (0%).

All the ELLs in this study used various references when reading computer-based texts at home and in school. They used both computer- and paper-based resources. For computer-based resources, the ELLs consulted other websites and online dictionaries. For example, Jae-Hoon, Stacy, and Brian accessed an English online dictionary (http://dictionary.reference.com/) when they read computer-based texts. Stacy said, "I use an online dictionary. . . . [A paper-based dictionary] is more difficult to find a word definition." The ELLs did not use an English dictionary often, however, because they mostly accessed L1 computer-based texts for fun, and they did not spend much time searching for the meanings of words. In addition, due to their low L1 literacy levels, they hesitated to use an online bilingual dictionary. For paper-based resources, the ELLs read textbooks, encyclopedias, and paper-based dictionaries. For example, when Kyoung-Min took a social studies quiz at the Beestar website, he said, "I don't really know about [the Coliseum]… I don't know. I will look at the books."

When reading computer-based texts, the ELLs used their computer literacy, their general knowledge about computers (Topping, 1997; Warschauer, 1999, 2002). They scrolled up and down, moved back and forth, and used the computer's input devices. Their use of computer skills facilitated their reading of computer-based texts, as they used a mouse, printed and downloaded computer-based texts. By using the mouse, the ELLs could highlight particular texts on the screen. For example, Brian used his mouse to easily find where he was reading and added, "If you are reading this spot…you can just put [the mouse pointer] on it . . . and you can read it back." The ELLs printed the computer-based texts to have the texts for their school projects or to read the text on paper, and they also downloaded these resources at home.

The ELLs made critical decisions to search for and access appropriate computer-based texts at home and in school when they navigated the Internet. As active readers, they set up the reading purpose, previewed and evaluated the texts, and decided which texts to read. When reading computer-based texts, the ELLs decided whether they would read the texts for information or for fun. When they read texts for information, they gathered meanings, ideas, and directions from the texts (Rosenblatt, 1978). For example, Kyoung-Min looked for information about the Moon at the Hubblesite website and said, "I might find something like some really good information there… You can actually like learn really good things, so you can find information in it." The ELLs also decided to read computer-based texts for fun in an aesthetic stance (Rosenblatt, 1978), and they accessed news articles, videos, TV programs, computer games, music, and other websites.

Previewing was essential. Given the tremendous amount of information on the Internet, the ELLs could not read entire texts. Instead they previewed titles, menus, and texts, collecting a large amount of information from these snippets to predict the content of each web resource. For example, when Jae-Hoon searched for information on the California Gold Rush on Google, he commented, "When I see the title, I can predict or infer. It is about the California Gold Rush. How did Gold Rush proceed in California? Some people found gold, and who found it and where they found it?" Menu buttons, "a pull-down list of functions available in a software application" (Dillon & Leonard, 1998, p. 177), allowed the ELLs to infer the overall organization of each website (Park & Helsel, 2008; Park & Kim, 2011). All the ELLs also previewed computer-based texts. For this substrategy, Jae-Hoon said, "I scan the text first and read the interesting part… If the text is useless (laughing), I don't read it. I just go to another website." This previewing strategy enabled the ELLs to navigate the Internet efficiently.

Through the process of previewing computer-based texts, the ELLs evaluated the texts and decided if they were (a) informative, (b) interesting,

(c) appropriate, (d) relevant, and (e) accessible. The ELLs assessed whether the resources had enough information. For example, when Jae-Hoon searched for resources to complete his school project, he could not find good information. He was frustrated and said, "Oh, my God. There isn't anything… There is not any information!" When reading texts for fun, the ELLs assessed how interesting they were, as a primary criterion for spending time reading them.

The ELLs avoided accessing the texts that were inappropriate for their ages or that were too easy or too difficult. For example, when Stacy played an English quiz game, she clarified, "I think this [game] is too easy…Yes, this is too easy," and quit the game. Very easy and very difficult games did not attract the players (Garris, Ahlers, & Driskell, 2002; Myers, 1990). Relevance was another factor that the ELLs considered (Wallace, Kupperman, Krajcik, & Soloway, 2000). They checked whether computer-based texts were relevant to their specific needs or interests. In addition, the ELLs considered the accessibility of computer-based resources and the time they took to load. They did not usually access resources requiring long loading times. They aborted the accessing process when the content did not show up in approximately 3–5 seconds.

The ELLs adopted diverse interactive strategies. These included dialoguing, making a connection, and sharing an information source.

Dialoguing was vital and constant, and the ELLs in this study engaged in dialogue with others, themselves, texts, and authors when they read computer-based texts (Kim, 2011; Park, 2012). When the ELLs dialogued with others, they interacted with their mothers, teachers, siblings, relatives, friends, and classmates, in person or through synchronous or asynchronous CMC. For example, when Jae-Hoon was searching for information about Southwestern Native American customs on the Internet, he could not find appropriate websites. Therefore, he asked for help from his teacher. His teacher showed how to search for appropriate websites on his computer, and then Jae-Hoon searched for other websites individually. The ELLs also asked their parents or teachers if they were allowed to access particular websites, applications, and devices while reading computer-based texts at home and in school. Kyoung-Min's mother collected the handouts from school and found several websites listed there, and she recommended Kyoung-Min to access the sites and complete activities. In addition to the face-to-face dialogues, the ELLs dialogued with others via CMC. For example, Stacy dialogued with her cousin in Las Vegas through Facebook and learned about several fun websites, and Brian chatted with his friends in the Philippines and learned more about his native culture. However, parents' contributions to the ELLs' development of computer-based text reading was comparatively less active than teachers' efforts, and the mutual communications and collaboration between teachers and parents were not observed.

All the ELLs in this study dialogued with themselves as well. When Stacy read an electronic storybook, *Hannah is My Name* (http://www.tumblebooks.com), she asked "What is a rabbit foot? Ah, does she give it to Hannah? Does Hannah play with it when she is bored? … Should I click nthis link?" By dialoguing with herself, Stacy articulated why the main character of the storybook gave a rabbit's foot to her friend. The ELLs mostly used questions to initiate the dialogues. Kyoung-Min recognized that he frequently dialogued with himself and said, "I usually talk to myself because it is kind of helps me. It is just kind of help me get into the story."

The ELLs also dialogued with computer-based texts and authors, including writers, website developers, and audio and video creators. These dialogic interactions were apparent when they used Internet search engines or watched videos. For example, while watching a video, "How to Catch the Three Regi's in Pokémon Platinum" (http://www.youtube.com/watch?v=g3RcjneDa3w&feature=related), he dialogued with the video creator in a more direct manner:

Creator:	If you want to get the three Regis from Pokémon Platinum, oops. Uh, so, yeah. You need to get this, you need a Zant.
Kyoung-Min:	I have got that already.
Creator:	Which didn't come out in March.
Kyoung-Min:	Yeah.
Creator:	I think this was made in April. Yeah.
Kyoung-Min:	Uh-huh.
Creator:	And, So, Yeah. I'm gonna catch Registeel, and the Regice, and the Regirock.
Kyoung-Min:	OK, this is great… This guy is doing great, and he is very helpful!

Kyoung-Min directly responded to the creator's utterances as if he were speaking with him in person. Jae-Hoon and Brian also dialogued with the creators of videos.

These dialogues helped readers "name the world," articulating and extending their understandings, and enriched their transactions with texts (Bakhtin, 1986; Freire, 2000; Rosenblatt, 1978, 1982). Reading in these online environments is not just a transaction between a reader and a text; it also involves real and imagined others—both virtual and present—whose voices, ideas and questions ELLs productively engage with as they read.

As the ELLs read, they drew on connection to prior knowledge, intertextuality, and connection to the world. All the ELLs connected to their prior knowledge and made connections to themselves, texts, and world knowledge (Carrell & Eisterhold, 1983; Coiro, 2011; Fitzgerald, 1995; Rumelhart, 1980) in their reading. By activating their prior knowledge and experiences, the ELLs made connections between the texts and themselves. For example,

Stacy read an electronic storybook, *Hannah is My Name* (http://www.tum-blebooks.com), about a Chinese girl, Hannah, who immigrated to the U.S. with her family. As an ELL, Stacy was deeply engaged in this story and understood the character's situations: "This girl is a first grader. She can only say 'Hannah is my name' on the first day of school. She is learning English. Like me. When I first learned English in Singapore, I couldn't understand it. Yes. So I feel this story differently [from what other people do]." Jae-Hoon, Kyoung-Min, and Brian also connected the computer-based texts to their own knowledge.

The ELLs also made connections between various texts using intertextual-ity, "the relationship between one literary text . . . and other texts that may also include non-literary elements, such as film, visual arts, biography and music" (Loeb, 2002, p. 44). Hartman (1995) identifies three types of texts based on their locations: primary endogenous texts (within the passage currently being read), secondary endogenous texts (in passages previously read), and exog-enous texts (outside the task environment). When reading electronic story-books, Stacy listened to a narrator's storytelling and referred to the still images and pictures as multiple primary endogenous texts. Brian often used second-ary endogenous resources. In order to learn how to download a computer game, World of Warcraft, Brian accessed the official game website (https://www.wowbeez.com), but he also accessed secondary endogenous texts, such as a Wikipedia webpage (http://en.wikipedia.org/wiki/World_of_Warcraft). All the ELLs used exogenous texts as well. When Kyoung-Min took an online quiz about the universe at Beestar, for example, he referred to paper-based books for the answers.

Jae-Hoon, Kyoung-Min, and Stacy made connections between computer-based texts and their world knowledge. For instance, Stacy connected an elec-tronic storybook, *The Best Excuse* (http://www.tumble-books.com), and said, "[Jessie's teacher] looks at out of the window and sees the three penguins follow Jessie. This is impossible because Penguins can't be there." Stacy consid-ered that the penguins could not appear this way in real life and assumed that Jessie was telling a lie.

In addition to dialoguing and making connections, the ELLs shared the information from computer-based texts with others and learned from them. For example, Jae-Hoon learned how to download songs at the iTunes (http://itunes.apple.com) site from his older brother and introduced his friends to the site. From time to time, Jae-Hoon shared new resources about computer games on iTunes with his brother as well. Like Jae-Hoon's case, the ELLs, as more capable individuals, shared their knowledge about the text sources with people who did not have the knowledge, and vice versa.

The ELLs read computer-based texts actively. They adjusted their reading patterns, monitored their reading comprehension, inferred particular information from computer-based texts, and confirmed whether their inferences were correct (Oakhill & Cain, 2007; Richards & Anderson, 2003).

To adjust their reading patterns, the ELLs changed their normal patterns of reading, with regard to the loudness, speed, and number of times. Therefore, they read the computer-based texts aloud, silently, Kyoung-Min took an online quiz at Hubblesite, he read the questions and possible answers aloud and more carefully for a better understanding of the texts. In contrast, Jae-Hoon read an online article about a professional basketball player faster than he normally did. He remarked, "If [the text] is easy to understand, …I read it fast. But if it is hard to understand, I go back and read it slowly again." The ELLs read computer-based texts multiple times if the texts were important or hard to understand.

The ELLs monitored whether they comprehended computer-based texts. For example, when Stacy read an electronic storybook, *Little Red in Cyber Space* (http://www.tumblebooks.com), she did not understand particular sentences and kept asking herself questions about the meaning.

The ELLs also inferred information from computer-based texts and confirmed their predictions. Inference is "the strategic process of generating assumptions, making predictions, and coming to conclusions based upon given information in text and in illustrations" (Richards & Anderson, 2003, p. 290). The ELLs predicted content and guessed the meanings of computer-based texts. After reading the texts, they assessed whether their predictions were correct.

Similarities and Differences in the ELLs' Reading of Computer-Based Texts

Each ELL used these 15 strategies at home and in school. Of the 15 strategies, 11 of them appear in paper-based reading and were transferred into computer-based reading. These 11 are (a) adjusting their reading patterns, (b) confirming their prediction, (c) dialoguing, (d) evaluating texts and deciding which texts to read, (e) inferring from the texts, (f) making connections, (g) monitoring their comprehension, (h) previewing the texts, (i) setting up their reading purposes, (j) sharing the sources of information, and (k) using various references. Four of the strategies are unique to computer-based reading: (a) accessing computer-based texts, (b) accessing hypermedia, (c) scrolling up and down and moving back and forth, and (d) using computer skills and devices.

Both at home and in school, the parents' and teachers' authority influenced their computer-based reading. The authority figures determined how

many hours per day and what genres of texts their children could read (S. Lee & Chae, 2007; Van den Bulck & Van den Bergh, 2000). They set up the basic rules of using a computer, guided the children, and monitored their children's use. In school, policies also played authoritative roles. In both contexts, the ELLs followed parents' and teachers' rules. Even though the authoritative components limited the ELLs' access to computer-based texts, they protected the ELLs from inappropriate online resources and helped orient them while online.

The four ELLs accessed different mixes of computer-based texts, partly because their parents and teachers had different opinions about computer use. The ELLs read diverse computer-based texts, but their patterns were different. At home, they accessed fun and L1 websites more often than they did at school. The ELLs did not always access a given website for only one purpose. For instance, Jae-Hoon initially read articles at the NBA (http://www.nba.com) website for fun, but he also learned new information there. The ELLs frequently accessed their L1 resources at home, but they only accessed English resources in school.

The parents and teachers had varying perspectives on the ELLs' use of computers. The mothers of Jae-Hoon, Stacy, and Brian felt that computer-based texts were neither important nor helpful resources for their children's study. Kyoung-Min's mother believed that some educational websites might be good for her son's science education, but she still considered the effects to be minimal. From the parents' perspectives, the ELLs were likely to be watching fun videos and playing games when they used computers. Despite their skepticism, the parents still allowed the ELLs to use computers as a reward for working hard on their academic studies. Compared to the parents, the teachers had more positive views of their students' use of computers, and they appreciated technology's educational potential. For example, Jae-Hoon's teacher said, "[computer technology] is a central value for [students'] future to build and keep up with another world." To the teachers, a computer was a crucial medium for learning, and teachers with such positive opinions about computers actively adopted computer technology in their classrooms.

Discussion and Implications

The taxonomy of strategies provides a useful overview of how ELLs engage with computer-based texts. Our findings also establish a pattern that illustrates central tenets of a dialogic approach to learning. We also provide pedagogical and practical implications.

Nonlinear Dialogues

Literacy practice is a dialogue between the reader and the text within a social context (Rosenblatt, 1986), and the ELLs' dialogued with these texts in a meaning-making process (Goodman, 1984). ELLs engage in actual and imagined dialogues with others, self, and texts when they read computer-based texts at home and in school. Since embedded hypermedia enhances nonlinear reading patterns, ELLs' dialogues are more dynamic and nonlinear when they read computer-based texts, compared to traditional texts (Park & Kim, 2011). Hyperlinks provide opportunities to engage with new resources that can spark new dialogues.

Adding to the complexity, reading online allows nonlinear links between texts and multiple simultaneous dialogues in virtual and real space. The ELLs' reading processes zoomed in and out from connecting to the story to reflecting and making sense of the relevance of the stories; ELLs try to communicate with their parents, teachers, siblings, relatives, friends, and classmates in diverse situations. They also request information, advice, and clarifications through their reading. In computer-based text-reading contexts, synchronous and asynchronous CMC helps their dialogic processes be more dynamic. The ELLs are able to engage with others who live far away from them and with people whom they do not even know. Therefore, these diverse opportunities to dialogue with others, often with parents and teachers, allow the ELLs to ask for more help and to obtain more information and lived-through experiences (Rosenblatt, 1978) to read computer-based texts more effectively.

The ELLs also engaged in the text dialogue with themselves. In most cases, the ELLs asked themselves questions to expand their own thinking about the computer-based texts and to pay more attention to their tasks. As a metacognitive strategy, self-questioning is effective to enhance readers' comprehension of texts (Berkeley, Marshak, Mastropieri, & Scruggs, 2011; Shang & Chang-Chien, 2010) and of earlier ones (Bakhtin, 1986).

Furthermore, the ELLs dialogued with themselves more actively when they made critical decisions, maintained their dialogic connections, and participated seriously in the reading activities. As in Jae-Hoon's case, while he previewed and evaluated computer-based texts, he dialogued with and asked questions to himself to know whether the texts were appropriate for his reading purposes or not. In addition, Stacy continued to ask a series of questions to understand an electronic storybook and to make more appropriate meanings from the texts, which eventually allowed her to maintain dialogic connections with the texts. Self-directed questions and statements helped the ELLs monitor and increase their comprehension of the texts (Davey & McBride, 1986; Rosenshine, Meister, & Chapman, 1996; Wilson & Smetana, 2011). In addition, these dialogic reactions while reading computer-based

texts are associated with the readers' self-regulation, which will be relevant to their level of self-efficacy and their adjustment of their own learning processes (Pintrich, 2004; Zimmerman & Schunk, 2011).

When the ELLs have access to a wide range of texts, they are more motivated (Cummins, 2011; Gambrell, 2011). While texts in new literacy contexts include diverse semiotic modes, such as electronic texts, pictures, audio, and video, as well as traditional paper-based texts, computer-based texts consist of electronic texts, pictures, audio, and video. In this study, the ELLs dialogued with the authors of the electronic texts and tried to comprehend the meanings of the texts. This was more dynamic and recognizable when they dialogued with Internet search engines and with videotexts, such as YouTube videos. While accessing a video, Kyoung-Min dialogued with the video creator. He listened to the video creator's utterance, waited for his turn, thought about his response, and provided appropriate responses. Even though the creator's utterances were not designed as a two-way conversation, Kyoung-Min recognized the existence of his interlocutor and the creator of the video, which might facilitate his engagement in his literacy event. In addition, many educational videos and CD-ROMs are professionally designed and made interactive to facilitate these dialogues (Chen, Ferdig, & Wood, 2003; Shamir & Korat, 2007). Therefore, narrators provide instructions and tasks to students, ask questions to them, wait for their responses or reactions, and offer relevant feedback and resources. These steps do not need to be linear, so students or teachers can select appropriate resources as needed.

The ELLs we observed actively engaged in virtual and real dialogues with others, themselves, and the texts. They did not focus merely on one task and have one dialogue as they accomplished that task; instead, they worked on multiple tasks and dialogues in nonlinear ways. These nonlinear dialogues helped young readers name the world, articulating and extending their understandings, and enriching their transactions with the texts (Bakhtin, 1986; Freire, 2000; Rosenblatt, 1978, 1982). Reading in these online environments is not just a transaction between a reader and a text. It also involves real and imagined others—both virtual and present—whose voices, ideas, and questions ELLs productively engage with as they read.

Pedagogical Implications and Limitations

Hybrid reading strategies

There were three unique strategies for reading computer-based texts: (a) accessing a web page, (b) accessing hypermedia, and (c) using computer skills and devices. These strategies are essential for reading computer-based texts. What we call "*hybrid* reading strategies" (Park & Kim, 2011) are borrowed and modified from paper-based strategies. The seven hybrid reading

strategies included (a) dialoguing, (b) evaluating the text and deciding what to read, (c) making a connection, (d) previewing, (e) scrolling up and down and moving back and forth, (f) sharing an information source, and (g) using references.

Due to the nonlinear nature of computer-based texts, readers normally preview the title and other key points and make a decision to read, skim, or skip the texts. They must also assess the quality and appropriateness of the text. They generally read texts while attending to several media such as images, audio, or videos. They must attend to these multiple dimensions and employ multiple strategies regularly, in order to read effectively.

Roles of parents and teachers in learning contexts of electronic literacies

The ELLs frequently ask questions of their parents and teachers or request permission to access particular websites, applications, and devices at home and in school. The parents and teachers have authority in each context but few of them possess completely adequate computer-based literacy skills. Therefore, they cannot fully support the ELLs' productive use of computer technology. In our study we found that classroom teachers more actively and constructively helped ELLs learn to read online. In addition to monitoring students' use of computer-based texts in class, the teachers searched for relevant computer-based texts, shared materials with their students, and developed activities. In these ways, the teachers modified their instructional practices and frequently adopted more constructive pedagogy when they used computer-based texts in class (Becker & Ravitz, 1999; Windschitl & Sahl, 2002). But teacher training, curriculum materials, and student assessments need a significant overhaul before we can use computer technology as a fully effective learning tool (Roschelle, Pea, Hoadley, Gordin, & Means, 2000).

In order to enhance ELLs' reading of computer-based texts, teachers need to incorporate various components of electronic literacies into their classes. It is important to teach ELLs to use diverse applications, such as word processors and presentation tools (computer literacy) and to give them opportunities to create and comprehend multimedia resources (multimedia literacy). In addition, it will be helpful to teach ELLs how to search for information on the Internet and how to evaluate whether online resources are appropriate and relevant (information literacy). Depending on the policy of the school district, teachers can use CMC tools, such as email, blogs, and texting tools, to enhance ELLs' dialogues and empower them (CMC literacy). They also need to learn online reading strategies during the computer sessions. Teachers cannot do all these things by themselves. They need support from other teachers and technology specialists. Schools and school districts should provide professional development, such as educational technology workshops, and develop

comprehensive websites for professional development. In these ways, teachers can together help ELLs systematically develop their electronic literacy skills.

Parents monitored and regulated the ELLs' use of computers. Even though they believed that computer-based resources would help their children's academic achievement, they were still concerned about potential negative consequences (Livingstone & Bober, 2004). However, it is important for parents to understand that their children need to become proficient learners in technology-integrated learning contexts, and they should play more active roles in the development of their children's electronic literacies. Instead of considering their children's computer use as a reward for working hard on academic subjects, the parents should think about how their children can use computers to learn computer-based literacies and to understand the subject matter. First, the parents need to dialogue with their children and find out what online resources they currently use at home and in school. After this, they need to search for educational resources that can be beneficial for their children. For example, by searching for free online educational resources, the parents can find diverse online texts, such as Open Culture (http://www.openculture.com/), PBS Learning Media (http://www.pbslearningmedia.org/), and Kids.gov (http://kids.usa.gov/) websites. These websites contain both multimedia resources and a variety of links to other educational resources through hyperlinks as well. In addition, they can access the websites of teachers, schools, and districts, which normally contain educational and technological resources. If searching for this information on the Internet is not an option, the parents can refer to their children's textbooks or other paper-based resources, which frequently include the web addresses of relevant online resources. In these ways, the parents can develop a list of appropriate online resources for their children.

In this study, both teachers and parents tried to help the ELLs. However, the degree of teachers' and parents' involvement and activeness was different, which influenced the ELLs' different engagement and participations at home and in school. For example, the ELLs used computers more productively in school based on teachers' active guidance and intervention. However, the ELLs used computers for fun in many cases at home with their parents' limited involvement. In both home and school contexts, adults need to consider more carefully how they can help their children become proficient readers of computer-based texts.

Connections between home and school contexts

Even though we often imagine a firm boundary between home and school, children themselves live in both contexts (Rosenthal & Sawyers, 1996). Partnerships between parents and teachers can facilitate ELLs' successful learning and development (Blanchard, 1997; Lawson, 2003; Martin & Hagan-Burke,

2002). Kohl, Lengua, and McMahon (2000) describe three modes of parental involvement: parent–teacher contacts, parental involvement at school, and parental involvement at home. They argue that parents should contact teachers in order to monitor their children's progress and help their children with homework.

In this study, parents and teachers showed different perspectives on the ELLs' use of computers and computer-based texts. All the teachers in this study valued technology for the ELLs' education, but not all the parents appreciated it. In addition, partnerships and collaboration between parents and teachers that facilitated the integration of technology in the ELLs' education were rare. Therefore, parents and teachers need to strengthen connections between home and school to enhance ELLs' literacy development in the context of learning electronic literacies.

In order to create more effective home–school connections regarding the ELLs' development of electronic literacies, schools should assign facilitators, meet more frequently or on a regular basis if possible, and provide educational opportunities to parents. In order to make these processes more effective, technologies like conference calls, email, websites, and school blogs can be useful tools to enhance communications and create solid connections with parents (Rogers & Wright, 2008). School facilitators need to have a good understanding of linguistic and cultural diversity, and they must clearly explain how important the ELLs' development of computer-based text reading is, why the home–school connection is necessary, and how parents can enhance it. Schools can also help parents prepare for the home–school connection by offering workshops on various topics. These can begin with information literacy, in order to search for and evaluate information on the Internet, and CMC literacy for communicating with school personnel. Moreover, multimedia literacy can be focused on if parents become more proficient and confident in using technology. More active communications and collaboration between home and school will help ELLs develop their electronic literacy skills, and this will facilitate their future success.

Conclusions

We have shown that fourth and fifth grade ELLs use multiple strategies when they read diverse computer-based texts at home and in school. We developed a taxonomy of strategies, organized into five major categories: accessing computer-based texts, use of computer literacy, making critical decisions, dialogic connection, and active participation in computer-based text-reading activities. The strategies we identified include some unique to computer-based texts as well as hybrid reading strategies borrowed and modified from paper-based reading.

The findings showed that young ELLs significantly engage in virtual, imagined, and real dialogues with others, themselves, and texts when reading computer-based texts. The nonlinear, dynamic nature of computer-based texts increases the opportunities for dialogue and access to many resources and strategies. ELLs themselves, teachers, and parents generally understand the importance of computer-based resources for literacy in the 21st century. The study also repeatedly demonstrated how young ELLs use diverse strategies dialogically when reading computer-based texts in diverse contexts. Reading texts was dialogic with active meaning-making processes, which, in turn, illuminated various dialogic actions with the texts, with others, and with themselves as they simultaneously selected and implemented various reading strategies and made critical connections among them. The study suggested that the complexity of reading could be understood from a dialogic perspective. We also learned that parents and teachers must more effectively help ELLs learn, and they need to develop more active partnerships for collaboration.

In this study we focused on a small number of ELLs' reading experiences as a dialogic process; further research on a larger number of ELLs at different grade levels and from different cultural backgrounds may expand our understanding of L2 online reading strategies. Additional research on the strategies ELLs use with diverse technology devices, such as tablet PCs and wearable technology may also expand upon our findings. We also need more research on how ELLs are creatively using heterogeneous resources as they learn to read online.

Appendix

Interview Questions for ELLs
1. What are reading and writing in your mind? What is text in your mind?
2. What are reading and writing, and what is text in reading online?
3. What do you think about using technology for education in general?
4. What do you think about using technology for reading?
5. How much time do you spend in reading at home and in school (including paper-based texts and computer-based texts)?
6. What are good or bad for using computer for your study?

Interview Questions for Parents
1. What is your educational background?
2. What is your educational philosophy in general (including the roles of students, parents, and teachers)?
3. What is your opinion about technology use in education in general?
4. What is your opinion about technology use in education in literacy?

5. What is your expectation for your child through the school education?
6. Do you use technology for your child's education? Why or why not?
7. What are advantages and disadvantages of using computer-based texts for education?
8. What cultural, linguistic, and technological resources do you use for your child's literacy development?

About the Authors

Ho-Ryong Park is Assistant Professor of Teaching English to Speakers of Other Languages (TESOL) in the Department of English and Philosophy at Murray State University. His research interests focus on TESOL/ESOL education, second language and literacy acquisition, and technology incorporation in diverse learning contexts.

Deoksoon Kim is Associate Professor in the Lynch School of Education, Department of Teacher Education, Special Education, Curriculum and Instruction at Boston College. Her research focuses on second language literacy, sociocultural theory in language learning, and incorporating instructional technologies into teacher education through social media. She has published in *Computers and Education*, *Language Learning Journal*, *TESOL Journal*, *CALICO Journal*, *IALLT Journal*, *English Leadership Quarterly*, *Journal of Reading Education*, *Journal of Educational Computing Research*, and *Multilingual Education*, among others. She has done research, teaching, and professional development in South Korea, the UK, Canada, and the USA.

References

ACTFL. (2012). *ACTFL proficiency guidelines 2012.* Retrieved from http://www.actfl.org/publications/guidelines-and-manuals/actfl-proficiency-guidelines-2012/english

Afflerbach, P., & Cho, B. Y. (2008). Identifying and describing constructively responsive comprehension strategies in new and traditional forms of reading. In S. Israel & G. Duffy (Eds.), *Handbook of reading comprehension research* (pp. 69–90). Mahwah, NJ: Erlbaum.

Akbulut, Y. (2007). Effects of multimedia annotations on incidental vocabulary learning and reading comprehension of advanced learners of English as a foreign language. *Instructional Science, 35*(6), 499–517. Retrieved from http://dx.doi.org/10.1007/s11251-007-9016-7

Al-Seghayer, K. (2001). The effect of multimedia annotation modes on L2 vocabulary acquisition: A comparative study. *Language Learning & Technology, 5*(11), 202–232.

Anstey, M., & Bull, G. (2006). *Teaching and learning multiliteracies: Changing times, changing literacies.* Newark, DE: International Reading Association.

Bakhtin, M. M. (1981). *The dialogic imagination: Four essays by M. M. Bakhtin* (C. Emerson & M. Holquist, Trans.). Austin, TX: University of Texas Press.

Bakhtin, M. M. (1986). *Speech genres and other late essays* (V. W. McGee, Trans.). Austin, TX: University of Press. (Original work published 1979)

Bannert, M., & Reimann, P. (2012). Supporting self-regulated hypermedia learning through prompts. *Instructional Science, 40*(1), 193–211. Retrieved from http://dx.doi.org/10.1007/s11251-011-9167-4

Beatty, K. (2010). *Teaching and researching: Computer-assisted language learning* (2nd ed.). New York, NY: Taylor & Francis.

Becker, H. J., & Ravitz, J. (1999). The influence of computer and Internet use on teachers' pedagogical practice and perceptions. *Journal of Research on Computing in Education, 31*(4), 356–384. Retrieved from http://dx.doi.org/10.1080/08886504.1999.10782260

Berkeley, S., Marshak, L., Mastropieri, M. A., & Scruggs, T. E. (2011). Improving student comprehension of social studies text: A self-questioning strategy for inclusive middle school classes. *Remedial and Special Education, 32*(2), 105–113. Retrieved from http://dx.doi.org/10.1177/0741932510361261

Blanchard, J. (1997). The family–school connection and technology. *Proceedings of the Families, Technologies, and Education Conference*. Retrieved from http://ceep.crc.uiuc.edu/eecearchive/books/fte/links/blanchard.html

Carrell, P. L., & Eisterhold, J. C. (1983). Schema theory and ESL reading pedagogy. *TESOL Quarterly, 17*(4), 553–573. Retrieved from http://dx.doi.org/10.2307/3586613

Chatel, R. (2002). New technology, new literacy: Creating a bridge for English language learners. *New England Reading Association Journal*, *38*(3), 45–49.

Chen, M., Ferdig, R., & Wood, A. (2003). Understanding technology-enhanced storybooks and their roles in teaching and learning: An investigation of electronic storybooks in education. *Journal of Literacy and Technology, 3*. Retrieved from http://www.researchgate.net/profile/Richard_Ferdig/publication/249725276_Understanding_technology-enhanced_storybooks_and_their_roles_in_teaching_and_learning_An_investigation_of_electronic_storybooks_in_education/links/00b7d52af9d434089a000000.pdf

Cho, B.-Y. (2013). Adolescents' constructively responsive reading strategy use in a critical Internet reading task. *Reading Research Quarterly, 48*(4), 329–332. Retrieved from http://dx.doi.org/10.1002/rrq.49

Cho, B.-Y., & Afflerbach, P. (2015). Reading on the Internet: Realizing and constructing potential texts. *Journal of Adolescent & Adult Literacy, 58*(6), 504–517. Retrieved from http://dx.doi.org/10.1002/jaal.387

Chou, I.-C. (2012). Understanding on-screen reading behaviors in academic contexts: A case study of five graduate English-as-a-second-language students. *Computer Assisted Language Learning, 25*(5), 411–433. Retrieved from http://dx.doi.org/10.1080/09588221.2011.597768

Chun, D. M., & Plass, J. L. (1996). Effects of multimedia annotations on vocabulary acquisition. *Modern Language Journal, 80*(2), 183–198. Retrieved from http://dx.doi.org/10.1111/j.1540-4781.1996.tb01159.x

Cohen, A. D. (2011). Second language learner strategies. In E. Hinkel (Ed.), *Handbook

of research in second language teaching and learning (pp. 563–579). New York, NY: Routledge.

Coiro, J. (2003). Exploring literacy on the Internet. *The Reading Teacher, 56*(5), 458–464.

Coiro, J. (2011). Predicting reading comprehension on the Internet: Contributions of offline reading skills, online reading skills, and prior knowledge. *Journal of Literacy Research, 43*(4), 352–392. Retrieved from http://dx.doi.org/10.1177/1086296X11421979

Coiro, J., & Dobler, E. (2007). Exploring the online reading comprehension strategies used by sixth-grade skilled readers to search for and locate information on the Internet. *Reading Research Quarterly, 42*(2), 214–257. Retrieved from http://dx.doi.org/10.1598/RRQ.42.2.2

Cummins, J. (1991). Interdependence of first- and second-language proficiency in bilingual children. In E. Bialystok (Ed.), *Language processing in bilingual children* (pp. 70–89). New York, NY: Cambridge University Press. Retrieved from http://dx.doi.org/10.1017/CBO9780511620652.006

Cummins, J. (2011). Literacy engagement: Fueling academic growth for English learners. *The Reading Teacher, 65*(2), 142–146. Retrieved from http://dx.doi.org/10.1002/TRTR.01022

Davey, B., & McBride, S. (1986). Effects of question-generation training on reading comprehension. *Journal of Educational Psychology, 78,* 256–262. Retrieved from http://dx.doi.org/10.1037/0022-0663.78.4.256

Dillon, P. M., & Leonard, D. C. (1998). *Multimedia and the Web from A to Z* (2nd ed.). Phoenix, AZ: Oryx Press.

Elshair, H. M. (2002). *The strategies used by students to read educational websites and their relation to website usability and text design* (Unpublished doctoral dissertation). University of Pittsburgh, PA.

Ericsson, K. A., & Simon, H. A. (1993). *Protocol analysis: Verbal reports as data* (2nd ed.). Cambridge, MA: MIT Press.

Eskey, D. E. (2005). Reading in a second language. In E. Hinkel (Ed.), *Handbook of research in second language teaching and learning* (pp. 563–579). Mahwah, NJ: Lawrence Erlbaum.

Fitzgerald, J. (1995). English-as-a-second-language learners' cognitive reading processes: A review of research in the United States. *Review of Educational Research, 65*(2), 145–190. Retrieved from http://dx.doi.org/10.3102/00346543065002145

Freire, P. (2000). *Pedagogy of the oppressed.* New York, NY: Continuum International.

Gambrell, L. B. (2011). Seven rules of engagement: What's most important to know about motivation to read. *The Reading Teacher, 65*(3), 172–178. Retrieved from http://dx.doi.org/10.1002/TRTR.01024

Garris, R., Ahlers, R., & Driskell, J. E. (2002). Games, motivation, and learning: A research and practice model. *Simulation & Gaming, 33*(4), 441–467. Retrieved from http://dx.doi.org/10.1177/1046878102238607

Goodman, K. (1984). Unity in reading. In A. Purves & O. Niles (Eds.), *Becoming readers in a complex society: 83rd yearbook of the National Society for the Study of Education* (pp. 79–114). Chicago: University of Chicago Press.

Hartman, D. K. (1995). Eight readers reading: The intertextual links of proficient readers reading multiple passages. *Reading Research Quarterly, 30*(3), 520–561. Retrieved from http://dx.doi.org/10.2307/747631

Heller, R. S. (1990). The role of hypermedia in education: A look at the research issues. *Journal of Research on Computing in Education, 22*(4), 431–441. Retrieved from http://dx.doi.org/10.1080/08886504.1990.10781932

Hsieh, P., & Dwyer, F. (2009). The instructional effect of online reading strategies and learning styles on student academic achievement. *Educational Technology & Society, 12*(2), 36–50.

Huang, H. (2013). Online reading strategies at work: What teachers think and what students do. *ReCALL, 25*(3), 340–358. Retrieved from http://dx.doi.org/10.1017/S0958344013000153

Huang, H., Chern, C., & Lin, C. (2009). EFL learners' use of online reading strategies and comprehension of texts: An exploratory study. *Computers & Education, 52*(1), 13–26. Retrieved from http://dx.doi.org/10.1016/j.compedu.2008.06.003

Jacobs, G. M., Dufon, P., & Hong, C. H. (1994). L1 and L2 vocabulary glosses in L2 reading passages: Their effectiveness for increasing comprehension and vocabulary knowledge. *Journal of Research in Reading, 17*(1), 19–28. Retrieved from http://dx.doi.org/10.1111/j.1467-9817.1994.tb00049.x

Kellner, D. (2001). New technologies/new literacies: Reconstructing education for the new millennium. *Teaching Education, 11*(3), 245–265. Retrieved from http://dx.doi.org/10.1080/713698975

Kim, D. (2011). Dialogic meaning construction and emergent reading domains among four young English language learners in second-language reading. *Multilingual Education, 1*, Article 2. Retrieved from http://dx.doi.org/10.1186/2191-5059-1-2

Kohl, G. O., Lengua, L. J., & McMahon, R. J. (2000). Parental involvement in school: Conceptualizing multiple dimensions and their relations with family and demographic risk factors. *Journal of School Psychology, 38*(6), 501–523. Retrieved from http://dx.doi.org/10.1016/S0022-4405(00)00050-9

Kommers, P. A. M., Grabinger, S., & Dunlap, J. C. (1996). *Hypermedia learning environments: Instructional design and integration.* Hillsdale, NJ: Lawrence Erlbaum.

Kuiper, E., Volman, M., & Terwel, J. (2005). The web as an information resource in K–12 education: Strategies for supporting students in searching and processing information. *Review of Educational Research, 75*(3), 285–328. Retrieved from http://dx.doi.org/10.3102/00346543075003285

Lau, K. (2006). Reading strategy use between Chinese good and poor readers: A think-aloud study. *Journal of Research in Reading, 29*(4), 383–399. Retrieved from http://dx.doi.org/10.1111/j.1467-9817.2006.00302.x

Lawson, M. A. (2003). School–family relations in context: Parent and teacher perceptions of parent involvement. *Urban Education, 38*(1), 77–133. Retrieved from http://dx.doi.org/10.1177/0042085902238687

Lee, J. (2006). Exploring the relationship between electronic literacy and heritage language maintenance. *Language Learning & Technology, 10*(2), 93–113.

Lee, O., & Buxton, C. A. (2010). *Diversity and equity in science education: Research, policy, and practice.* New York, NY: Teachers College Press.

Lee, S., & Chae, Y. (2007). Children's Internet use in a family context: Influence on family relationships and parental mediation. *CyberPsychology & Behavior, 10*(5), 640–644. Retrieved from http://dx.doi.org/10.1089/cpb.2007.9975

Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Thousand Oaks, CA: Sage.

Liu, M., Navarrete, C. C., & Wivagg, J. (2014). Potentials of mobile technology for K–12 education: An investigation of iPod touch use for English language learners in the United States. *Educational Technology & Society, 17*(2), 115–126.

Livingstone, S., & Bober, M. (2004). UK children go online: Surveying the experiences of young people and their parents. *LSE Research Online*. Retrieved from http://eprints.lse.ac.uk/395/

Loeb, M. (2002). *Literacy marriage: A study of intertextuality in a series of short stories by Joyce Carol Oates.* Bern, Switzerland: Peter Lang.

Martin, E. J., & Hagan-Burke, S. (2002). Establishing a home–school connection: Strengthening the partnership between families and schools. *Preventing School Failure, 46*(2), 62–65. Retrieved from http://dx.doi.org/10.1080/10459880209603347

McKnight, C., Dillon, A., & Richardson, J. (1996). User-centered design of hypertext/hypermedia for education. In D. H. Jonassen (Ed.), *Handbook of research for educational communications and technology* (pp. 622–633). New York, NY: Macmillan Library Reference.

McNabb, M., Hassel, B., & Steiner, L. (2002). Literacy learning on the Net: An exploratory study. *Reading Online*. Retrieved from http://www.readingonline.org/articles/art_index.asp?HREF=mcnabb/index.html

McPherson, K. (2005). Reading the Internet. *Teacher Librarian, 32*(5), 60–61.

Merriam, S. B. (1998). *Qualitative research and case study applications in education: Revised and expanded from case study research in education*. San Francisco, CA: Jossey-Bass.

Merriam, S. B. (2009). *Qualitative research: A guide to design and implementation*. San Francisco, CA: Jossey-Bass.

Myers, D. (1990). Computer game genres. *Play & Culture, 3*, 286–301.

Nation, I. S. P. (2001). *Learning vocabulary in another language*. Cambridge, England: Cambridge University Press. Retrieved from http://dx.doi.org/10.1017/CBO9781139524759

Oakhill, J., & Cain, K. (2007). Issues of causality in children's reading comprehension. In D. S. McNamara (Ed.), *Reading comprehension strategies: Theories, interventions, and technologies* (pp. 47–71), New York, NY: Lawrence Erlbaum.

O'Malley, J. M., & Chamot, A. U. (1990). *Learning strategies in second language acquisition*. New York, NY: Cambridge University Press. Retrieved from http://dx.doi.org/10.1017/CBO9781139524490

Oxford, R. L. (1990). *Language learning strategies: What every teacher should know*. New York, NY: Newbury House.

Oxford, R. L., & Crookall, D. (1989). Research on language learning strategies: Methods, findings, and instructional issues. *Modern Language Journal, 73*(4), 404–419. Retrieved from http://dx.doi.org/10.1111/j.1540-4781.1989.tb05321.x

Park, H.-R. (2012). *Four English language learners' experiences and strategy use in learning environments of multiliteracies* (Unpublished doctoral dissertation). University of South Florida, FL.

Park, H.-R., & Helsel, C. (2008). Differences between reading electronic and book-based text: Suggestions and implications for literacy teachers and literacy teacher educators. *Journal of Reading Education, 33*(3), 28–31.

Park, H.-R., & Kim, D. (2011). Reading-strategy use by English as a second language learners in online reading tasks. *Computers & Education, 57*(3), 2156–2166. Retrieved from http://dx.doi.org/10.1016/j.compedu.2011.05.014

Patton, M. Q. (2002). *Qualitative research and evaluation methods*. Thousand Oaks, CA: Sage.

Perez, B. (1998). *Sociocultural contexts of language and literacy.* Mahwah, NJ: Erlbaum.

Pintrich, P. R. (2004). A conceptual framework for assessing motivation and self-regulated learning in college students. *Educational Psychology Review, 16*(4), 385–407. Retrieved from http://dx.doi.org/10.1007/s10648-004-0006-x

Richards, J. C., & Anderson, N. A. (2003). How do you know? A strategy to help emergent readers make inferences. *The Reading Teacher, 57*(3), 290–294.

Rogers, R. R. H., & Wright, V. H. (2008). Assessing technology's role in communication between parents and middle schools. *Electronic Journal for the Integration of Technology in Education, 7*, 36–58.

Roschelle, J. M., Pea, R. D., Hoadley, C. M., Gordin, D. N., & Means, B. M. (2000). Changing how and what children learn in school with computer-based technologies. *The Future of Children, 10*(2), 76–101. Retrieved from http://dx.doi.org/10.2307/1602690

Rosenblatt, L. M. (1978). *The reader, the text, the poem: The transactional theory of the literary work*. Carbondale, IL: Southern Illinois University Press.

Rosenblatt, L. M. (1982). The literacy transaction: Evocation and response. *Theory into Practice, 21*(4), 268–277. Retrieved from http://dx.doi.org/10.1080/00405848209543018

Rosenblatt, L. M. (1986). The aesthetic transaction. *The Journal of Aesthetic Education, 20*(4), 122–128. Retrieved from http://dx.doi.org/10.2307/3332615

Rosenshine, B., Meister, C., & Chapman, S. (1996). Teaching students to generate questions: A review of the intervention studies. *Review of Educational Research, 66*(2), 181–221. Retrieved from http://dx.doi.org/10.3102/00346543066002181

Rosenthal, D. M., & Sawyers, J. Y. (1996). Building successful home/school partnerships: Strategies for parent support and involvement. *Childhood Education, 72*(4), 194–200. Retrieved from http://dx.doi.org/10.1080/00094056.1996.10522652

Rossing, J. P., Miller, W. M., Cecil, A. K., & Stamper, S. E. (2012). iLearning: The future of higher education? Student perceptions on learning with mobile tablets. *Journal of the Scholarship of Teaching and Learning, 12*(2), 1–26.

Rossman, G. B., & Rallis, S. F. (2012). *Learning in the field: An introduction to qualitative research* (3rd ed.). Thousand Oaks, CA: Sage.

Rumelhart, D. E. (1980). Schemata: The building blocks of cognition. In R. J. Spiro, B. C. Bruce, & W. F. Brewer (Eds.), *Theoretical issues in reading comprehension: Perspectives from cognitive psychology, linguistics, artificial intelligence, and education* (pp. 33–58). Hillsdale, NJ: Lawrence Erlbaum.

Sandberg, K. E. (2013). Hypertext: Its nature and challenges for college students. *Journal of College Reading and Learning, 44*(1), 51–71. Retrieved from http://dx.doi.org/10.1080/10790195.2013.10850372

Scheiter, K., Gerjets, P., & Heise, E. (2014). Distraction during learning with hypermedia: Difficult tasks help to keep task goals on track. *Frontiers in Psychology, 5*, 1–12. Retrived from http://dx.doi.org/10.3389/fpsyg.2014.00268

Serafini, F. (2010). Reading multimodal texts: Perceptual, structural and ideological perspectives. *Children's Literature in Education, 41*(2), 85–104. Retrieved from http://dx.doi.org/10.1007/s10583-010-9100-5

Serafini, F. (2012). Reading multimodal texts in the 21st century. *Research in the Schools, 19*(1), 26–32.

Shamir, A., & Korat, O. (2007). Developing an educational e-book for fostering kindergarten children's emergent literacy. *Computers in the Schools, 24*(1/2), 125–143. Retrieved from http://dx.doi.org/10.1300/J025v24n01_09

Shang, H.-F., & Chang-Chien, I.-J. (2010). The effect of self-questioning strategy on EFL learners' reading comprehension development. *International Journal of Learning, 17*(2), 41–54.

Simpson, J. (2005). Learning electronic literacy skills in an online language learning community. *Computer Assisted Language Learning, 18*(4), 327–435.

Solomon, G., & Schrum, L. (2010). *Web 2.0: How-to for educators*. Eugene, OR: International Society for Technology in Education.

Stewart, R. A., & Cross, T. L. (1991). The effect of marginal glosses on reading comprehension and retention. *Journal of Reading, 35*, 4–12.

Thomas, P. (2014). A case study of using a hypermedia pedagogy in a secondary English classroom. *English in Australia, 49*(1), 53–62.

Topping, K. J. (1997). *Electronic literacy in school and home: A look into the future*. Retrieved from http://files.eric.ed.gov/fulltext/ED416437.pdf

Tsai, Y.-R., Ernst, C., & Talley, P. C. (2010). L1 and L2 strategy use in reading comprehension of Chinese EFL readers. *Reading Psychology, 31*(1), 1–29. Retrieved from http://dx.doi.org/10.1080/02702710802412081

Türk, E., & Erçetin, G. (2014). Effects of interactive versus simultaneous display of multimedia glosses on L2 reading comprehension and incidental vocabulary learning. *Computer Assisted Language Learning, 27*(1), 1–25. Retrieved from http://dx.doi.org/10.1080/09588221.2012.692384

Van den Bulck, J., & Van den Bergh, B. (2000). The influence of perceived parental guidance patterns on children's media use: Gender differences and media displacement. *Journal of Broadcasting & Electronic Media, 44*(3), 329–348. Retrieved from http://dx.doi.org/10.1207/s15506878jobem4403_1

Wallace, R. M., Kupperman, J., Krajcik, J., & Soloway, E. (2000). Science on the web: Students online in a sixth-grade classroom. *Journal of the Learning Sciences, 9*(1), 75–104. Retrieved from http://dx.doi.org/10.1207/s15327809jls0901_5

Warschauer, M. (1999). *Electronic literacies: Language, culture, and power in online education.* Mahwah, NJ: Lawrence Erlbaum.

Warschauer, M. (2002). A developmental perspective on technology in language education. *TESOL Quarterly, 36*(3), 453–475. Retrieved from http://dx.doi.org/10.2307/3588421

Warschauer, M., & Matuchniak, T. (2010). New technology and digital worlds: Analyzing evidence of equity in access, use, and outcomes. *Review of Research in Education, 34*(1), 179–225. Retrieved from http://dx.doi.org/10.3102/0091732X09349791

Wilson, N. S., & Smetana, L. (2011). Questioning as thinking: A metacognitive framework to improve comprehension of expository text. *Literacy, 45*(2), 84–90. Retrieved from http://dx.doi.org/10.1111/j.1741-4369.2011.00584.x

Windschitl, M., & Sahl, K. (2002). Tracing teachers' use of technology in a laptop computer school: The interplay of teacher beliefs, social dynamics, and institutional culture. *American Educational Research Journal, 39*(1), 165–205. Retrieved from http://dx.doi.org/10.3102/00028312039001165

Zenotz, V. (2012). Awareness development for online reading. *Language Awareness, 21*(1/2), 85–100. Retrieved from http://dx.doi.org/10.1080/09658416.2011.639893

Zhang, M. (2013). Supporting middle school students' online reading of scientific resources: Moving beyond cursory, fragmented, and opportunistic reading. *Journal of Computer Assisted Learning, 29*(2), 138–152. Retrieved from http://dx.doi.org/10.1111/j.1365-2729.2012.00478.x

Zimmerman, B. J., & Schunk, D. H. (2011). Self-regulated learning and performance: An introduction and an overview. In B. J. Zimmerman & D. H. Schunk (Eds.), *Handbook of self-regulation of learning and performance* (pp. 1–12). New York, NY: Routledge.