Sánchez, P., & Salazar, M. (2012). Transnational computer use in urban Latino immigrant communities: Implications for schooling. *Urban Education*, *47*(1), 90–116. doi:10.1177/0042085911427740

Smith, N. (1993). Homeless/global: Scaling places. In J. Bird, B. Curtis, T. Putnam, G. Robertson, & L. Tickner (Eds.), *Mapping the futures: Local cultures, global change* (pp. 87–119). London, England: Routledge.

Vertovec, S. (2007). Super-diversity and its implications. *Ethnic and Racial Studies*, *30*, 1024–1054. doi:10.1080/01419870701599465

Yi, Y. (2009). Adolescent literacy and identity construction among 1.5 generation students from a transnational perspective. *Journal of Asia Pacific Communication*, *19*(1), 100–129. doi:10.1075/japc.19.1.06yi

New Ways of Connecting Reading and Writing

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■ Over the last few decades, writing for academic, business, and professional purposes has moved almost entirely from paper to screen. Throughout the developed world and in much of the developing world, there is little serious writing that is not done digitally. The transition to digital reading has come a bit more slowly. Although Web-based reading has been gradually expanding for the last 20 years, it is only with the advent of smartphones, tablets, and e-readers that magazine and book reading has gravitated to digital media. A preference for digital reading is especially prevalent among the young, who also tend to be the principal audience of English as a second or foreign language programs around the world. Though digital literacy can be broadly defined, in this contribution we will focus particularly on the skills and practices of reading and writing, and how those are transformed in the digital environment. In doing so, we make reference to several of our recent research projects at the University of California, Irvine, each of which indicates important connections between digital reading and writing.

SCAFFOLDED E-READING AND COLLABORATIVE WRITING

Researchers and educators in the field of TESOL have been among the earliest to explore scaffolded reading on computers, investigating
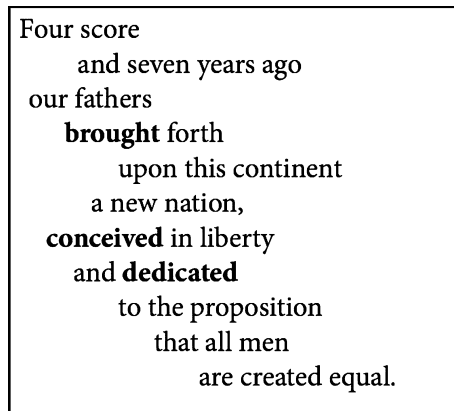
the effect of features such as first and second language vocabulary glosses; visual, audio, and audiovisual supports; advance organizers; highlighting of words; and text-to-speech (Chun, 2011). The broad transition of reading from page to screen allows many more opportunities for digitally supporting reading. Anderson-Inman and Horney (2007) provide an excellent review and categorization of the ways that this can occur (see Table 1). Our research team in the Digital Learning Lab at the University of California has been investigating two of these ways, the presentational and the collaborative.

As for the presentational, we are studying the use of visual-syntactic text formatting (VSTF; Walker, Schloss, Fletcher, Vogel, & Walker, 2005) for reading. VSTF uses a cascaded form of organization that better matches the human eye span and highlights the syntactic meaning of texts (see Figure 1). Earlier studies suggested a wide range of literacy benefits for students, and especially for English learners (Warschauer, Park, & Walker, 2011). Our most recent research confirmed these benefits in a study of 23 sixth-grade classrooms with large numbers of English as a second language (ESL) students in southern California (Park, Warschauer, Collins, Hwang, & Vogel, 2013). The random-assignment experimental study found that students who read with VSTF for a school year had significantly greater improvement on the English Language Arts California Standards Test, as well as on its Word Analysis, Writing Strategies, and Writing Conventions subtests.

TABLE 1
Typology of Resources for Supported Text

Resource	Description
Presentational	Enables text and graphics to be presented in customizable ways.
Navigational	Provides tools that allow reader to move within or between documents.
Translational	Provides a simplified version of a word, phrase, paragraph, or document in same or different modality that is more accessible.
Explanatory	Provides information that seeks to clarify the what, where, how, or why of some concept, object, process, or event.
Illustrative	Provides a visual representation or example of something in the text.
Summarizing	Provides a condensation of the document.
Enrichment	Provides supplementary information that adds to the reader's appreciation or understanding of importance or historical context.
Instructional	Provides prompts, questions, strategies, or instruction to teach some aspect of the text or how to read and interpret the text.
Notational	Provides tools for marking or taking notes on the text.
Collaborative	Provides tools for working or sharing with other readers, the author, or some other audience.
Evaluational	Provides materials, prompts, and assignments designed to assess student learning from the text.

Note. Adapted from Anderson-Inman and Horney (2007).

Four score
    and seven years ago
 our fathers
   brought forth
     upon this continent
  a new nation,
 conceived in liberty
 and **dedicated**
   to the proposition
   that all men
    are created equal.

FIGURE 1. **Visual-syntactic text formatting.**

As for the collaborative, we have been investigating the effects of live blogging among diverse learners as they discussed passages that teachers read aloud to them. We examined the impact on learning processes and outcomes among two classes of fifth-grade students that had a majority of ESL learners (Zheng & Warschauer, 2012) and who participated in these live blogging sessions on a weekly basis for a school year. Students in the two classes came together in one room for the activity. As one teacher read a story aloud, the students could respond by either raising their hand or writing on a microblog system called CoveritLive. Written comments could be directed to either the teacher, individual students, or the whole group, but all students could read and respond to any comments. As one teacher read aloud, the second teacher participated in the online discussion, constantly probing students to dig deeper in their questions and comments.

Our analysis of student posting over a school year showed that students increased their participation in the online discussions over time, with ESL students increasing the fastest. Learners who participated the most in these discussions improved the most in writing achievement from the previous year. What is more, students interacted more with each other over the course of the year, relying less on the teacher to direct their communication, and demonstrated broader use of advanced cognitive skills. Finally, the linguistic complexity of students' computer-mediated texts increased substantially over the course of the year. The study supported previous findings that computer-mediated communication can benefit the language and literacy development of ESL students.

Both of the above studies show the close relationship between digital reading and writing. While they were part of interventions designed to increase students' reading ability, they actually ended up improving writing test scores. A third recent study we conducted shows that the effect goes the other way too.

In this third study, we investigated the impact on literacy and learning in a culturally and linguistically diverse school district in which all the students had laptop computers and carried out their writing with Google Docs (Warschauer & Zheng, 2013). In an earlier study in the same district, we had found that use of laptops for writing decreased the gaps in test scores between at-risk learners (i.e., Hispanics and low socioeconomic status students) and their peers (Zheng, Warschauer, & Farkas, 2013). By downloading and analyzing tens of thousands of Google Docs written by students, we were able to more precisely analyze the relationship between composing, editing, and test score outcomes. Not surprisingly, the more students wrote on Google Docs during the course of the year, the greater their literacy test score outcomes improved from the year before. Interestingly, the greatest improvement was in their reading rather than in their writing scores. We also noted an interesting array of collaborative writing patterns in the project, including shared authorship (in which two or more authors shared responsibility as writers); reader-writer collaboration (in which the main author received input from a team but retained authority over the document); and tutor-tutee collaboration (in which a more proficient peer provided advice and directives on grammar and mechanics). We are currently investigating the relationships between these kinds of collaborative patterns and changes in student writing, both within a document and over the course of the year.

CONCLUSIONS

One takeaway from these studies is that reading and writing are more connected than ever in the digital era. Whereas reading was previously often a solo and passive activity, students now have many more opportunities to write about what they read. At the same time, the increased amount of written interaction that young people participate in throughout the day, through texting, chatting, forum postings, and blogging, also enhances their engagement with the reading of texts. Finally, new digital text formats can help students understand the structure of English, and thus further benefit their writing. We often discuss the valuable new literacies that students gain from digital reading and writing. Our recent research suggests that students improve in

so-called traditional literacies as well; that is, how to comprehend what they read and how to write well-structured essays. Practitioners and researchers in TESOL who seek to exploit and understand the potential of digital media for learning will want to keep these reading–writing connections in mind.

THE AUTHORS

Mark Warschauer is a professor and Associate Dean of Education at the University of California, Irvine, and a founding editor of the journal *Language Learning and Technology*. He has previously taught or conducted research in the Czech Republic, Russia, Egypt, Japan, China, Singapore, Brazil, and India. His most recent book is *Learning in the Cloud: How (and Why) to Transform Schools with Digital Media*.

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REFERENCES

Anderson-Inman, L., & Horney, M. A. (2007). Supported eText: Assistive technology through text transformations. *Reading Research Quarterly*, *42*, 153–160. doi:10.1598/RRQ.42.1.8

Chun, D. (2011). CALL technologies for L2 reading post Web 2.0. In L. Ducate & N. Arnold (Eds.), *Calling on CALL: Theory and research to new directions in foreign language teaching* (2nd ed., pp. 131–170). San Marcos, TX: CALICO.

Park, Y., Warschauer, M., Collins, P., Hwang, J. K., & Vogel, C. (2013). Building awareness of language structures with visual-syntactic text formatting. In K. E. Pytash & R. E. Ferdig (Eds.), *Exploring technology for writing and writing instruction* (pp. 21–36). Hershey, PA: IGI Global.

Walker, S., Schloss, P., Fletcher, C. R., Vogel, C. A., & Walker, R. C. (2005). Visual-syntactic text formatting: A new method to enhance online reading. *Reading Online*, *8*(6). Retrieved May 27, 2013, from http://www.readingonline.org/

Warschauer, M., Park, Y., & Walker, R. (2011). Transforming digital reading with visual-syntactic text formatting. *JALT CALL Journal*, *7*, 255–270.

Warschauer, M., & Zheng, B. (2013, May). *Collaborative writing in the cloud*. Paper presented at the meeting of the American Educational Research Association, San Francisco, CA.

Zheng, B., & Warschauer, M. (2012, April). *Blogging to learn: Participation and literacy among linguistically diverse fifth-grade students*. Paper presented at the meeting of the American Educational Research Association, Vancouver, Canada.

Zheng, B., Warschauer, M., & Farkas, G. (2013). Digital writing and diversity: The effects of school laptop programs on literacy processes and outcomes. *Journal of Educational Computing Research, 48*, 267–299. doi:10.2190/EC.48.3.a

Digital Composition in a Second or Foreign Language

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◾ In the 50 years or so since the invention of the microchip, we have witnessed dramatic changes in technologies for writing. These changes challenge our very conception of what writing is, as well as how it should be taught to speakers of a second or foreign language. At this juncture it is therefore important for researchers and practitioners in the field of TESOL to consider the issues arising out of these developments in information and communication technologies. What are the characteristic features of composition in the age of digital media? What are the implications of such digital composition practices for pedagogies of writing in TESOL?

Work on *digital literacies* provides a useful starting point in thinking about these questions. One way of looking at digital literacies is as the sets of skills and abilities that are necessary to accomplish socially situated reading and writing tasks, drawing on a range of digital tools—in other words, reading and writing with digital media. The concept goes beyond mere technical skills and abilities to encompass a wide range of social practices that people engage in when they use digital media. Elsewhere, we have characterized digital literacies as "the practices of communicating, relating, thinking and 'being' associated with digital media" (Jones & Hafner, 2012, p. 13). On the one hand, reading and writing in the digital age involve a kind of technical mastery, for example being able to operate digital tools like computers and smartphones. On the other hand, they also involve a higher level of conceptual mastery, understanding how to engage in digital practices, which often involves using language in combination with other semiotic resources for communication, entering into relationships with new kinds of audiences, constructing new kinds of identities, and participating in new kinds of online spaces.