INVITED COMMENTARY:
NEW TOOLS FOR TEACHING WRITING

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Less than two decades ago, new forms of socially constructed multimedia were believed to be devaluing writing, marginalizing the essay, and contributing to a postmodern death of the author (e.g., Faigley, 1997; Landow, 1992). But today, writing is more important than ever before (National Commission on Writing, 2003), mastery of the essay remains critical to academic success (Intersegmental Committee of the Academic Senates, 2002), and, as Chesher (2005, para. 1) has noted, "the author is alive and well, and has a blog."

Writing is especially important for the instruction of second language learners for three reasons. First, writing well is a vital skill for academic or occupational success (National Commission on Writing, 2004), but one that is especially difficult for second language learners to master. Second, writing can be an effective tool for the development of academic language proficiency as learners more readily explore advanced lexical or syntactic expression in their written work (e.g., Warschauer, 1996; Weissberg, 1999). Third, writing across the curriculum can be invaluable for mastering diverse subject matter, as written expression allows learners to raise their awareness of knowledge gaps, abstract problem-specific knowledge into schemas that can be applied to other relevant cases, and elaborate mental representations of knowledge that can be more easily retrieved, while simultaneously allowing teachers to better understand the students' state of knowledge and thinking process and thus adjust instruction as necessary (see discussion in Reeves, 2002).

New digital media have played an important role in the teaching of writing, through both the cognitive era that began in the 1980s, in which word processing was emphasized as a tool for revision (Pennington, 1993), and the sociocognitive era that began in the 1990s, in which computer-mediated communication was emphasized as a tool of social construction of meaning (Kern & Warschauer, 2000). Over the last decade, though, important new tools have emerged for the teaching and learning of writing. In the remainder of this essay, I briefly review four such tools: blogs, wikis, automated writing evaluation, and open-source netbook computers. Most of what I write about will focus on English language learners, as that is the target of my most recent research; some of it may be applicable to teaching other languages as well.

BLOGS

The development and free online availability of blogging software has helped transform the Web from a place principally used to access information to one where vast numbers of people publish their own work, with hundreds of millions of blogs launched in the past decade. The potential role of blogs in education, and in second language learning in particular, is revealed through an analysis of the medium's affordances. The value of online communication in second language learning has been attributed to how it combines the interactivity of speech with the permanence of writing (Warschauer, 1997). Yet different types of online communication achieve this combination in different ways. An analysis by Herring and colleagues demonstrates how blogs serve as a bridging genre between more highly interactive forms of asynchronous computer-mediated communication (CMC) and standard published HTML documents (see Figure 1). Blogs are more frequently updated (in terms of adding new content or comments), include more exchange among people, and have a higher percentage of text (as opposed to multimedia) than standard Webpages. But the exchanges on them tend to be more asymmetric (i.e., dominated by main authors) and less frequently updated than CMC sites such as newsgroups. If online communication represents an intermediate space between speech and writing, blogs can thus be characterized as

occupying an intermediate space among online media. Blogs thus represent a particularly effective tool to combine the publishing and discussion of student writing in a single medium.
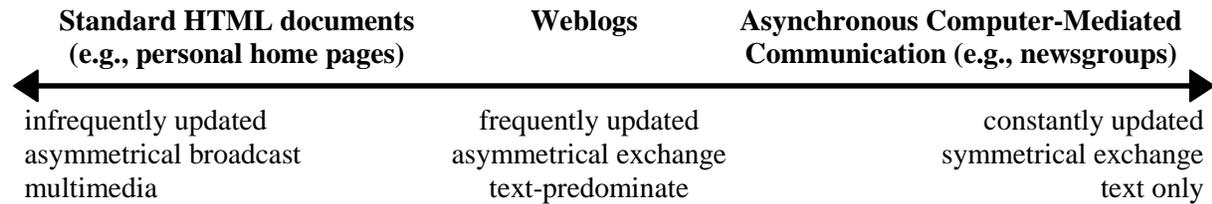
Standard HTML documents (e.g., personal home pages)	Weblogs	Asynchronous Computer-Mediated Communication (e.g., newsgroups)
infrequently updated	frequently updated	constantly updated
asymmetrical broadcast	asymmetrical exchange	symmetrical exchange
multimedia	text-predominate	text only

Figure 1. Weblogs as a bridging genre. Adapted from Herring, Scheidt, Bonus, & Wright (2005).

Blogs have revived the importance of authorship, and indeed created more authors than probably any other medium in human history. Yet they have also changed the nature of authorship, with writers on public blogs needing to be concerned about both their immediate audience of intended readers and an essentially unlimited audience of anyone with a Web browser who could accidentally or intentionally come across a blog posting (such as a future employer). Blogging can thus be used to help students write for a social audience and hone their words in response to others, while becoming sensitive to both the benefits and risks of expressing themselves online.

Second language educators are exploiting the affordances of blogs to good effect. The ease of writing and publishing on blogs makes them an appealing medium to students and thus has been found to help increase the quantity of student writing as well as its lexical sophistication (Fellner & Apple, 2006). Having students write on blogs can help learners transition from a more colloquial to an academic writing style, develop a sense of voice, learn to participate in a community of writers, and gain an important new literacy in its own right by becoming contributors to and not just consumers of online content (Bloch, 2007; Rezaee & Oladi, 2008).

WIKIS

Parallel to the rapid growth of blogs over the last decade has been similar growth among wikis. The most prominent wiki, Wikipedia, ranks sixth among most visited Websites in the world, and features 14 million articles written in more than 200 languages. Lesser known wikis exist on a large array of topics, and free software is available for teachers to start their own wikis.

Much of the discussion regarding the role of wikis in education has focused on the suitability of Wikipedia as a source for student research. The founder of Wikipedia, Jim Wales, provides the most commonsense answer to this, suggesting that although Wikipedia can help provide an overview of issues and a starting point for identifying primary sources, students are better off using primary sources as definitive sources in their research. "For God's sake, you're in college; don't cite the encyclopedia," Wales told one college student (Young, 2006, para. 2).

A more interesting question is how writing for wikis in language, composition, and other courses can affect the learning process. The potential of wikis for teaching and learning is hinted at by Ward Cunningham, inventor of the wiki, who commented, "The blogosphere is a community that might produce a work, whereas a wiki is a work that might produce a community." Cunningham's statement illuminates a central contradiction of CMC since its inception: it has served as a powerful medium for exploring identity, expressing one's voice, airing diverse views, and developing community, yet has proven a very unsuitable medium for accomplishing many kinds of collaborative work due to the inherent difficult of arriving at decisions in groups dispersed by space and time (see meta-analysis comparing face-to-face and computer-mediated decision-making by Baltes, Dickson, Sherman, Bauer, & LaGanke, 2002).

Wikis turn traditional CMC activity around. Whereas e-mail and chat facilitate informal, author-centric, personal exchange, writing on a wiki facilitates more formal, topic-centric, depersonalized exchange. Each edit makes a concrete contribution to a collaborative written product. A log of edits and their authors is relegated to a separate page, which a teacher can use to confirm who contributed what to a joint student product. Wikis are thus an especially powerful digital tool for collaborative writing and collective knowledge development.

Initial reports of the use of wikis for collaborative writing assignments in second language learning suggest that participating students increase their quantity of writing, develop more confidence in their writing, and find such assignments motivating (Mak & Coniam, 2008; Kovacic, Bubas, & Zlatovic, 2007). There is no published research yet on projects involving students writing for Wikipedia, but the existence of a Simple English Wikipedia targeted at English language learners could facilitate such projects.

AUTOMATED WRITING EVALUATION

Automated essay scoring has been under development since the 1960s, when researchers first created programs that could assign essays a numerical rating based on their similarity in machine-countable lexical and syntactic features to essays on the same topic previously scored by human raters (for an overview, see Warschauer & Ware, 2006). In the last decade, though, broader automated writing evaluation (AWE) programs have been developed that combine automated essay scoring software with a range of other tools for classroom use, such as model essays, scoring rubrics, graphic organizers, word banks, dictionaries, thesauri, and spelling/grammar/usage checkers.

Upon first consideration, the use of machine scoring appears to conflict with the goals of a sociocognitive approach to writing, and, indeed, automated essay scoring has been widely criticized within the composition community (e.g., Cheville, 2004). However, my research (e.g., Grimes & Warschauer, in press) and that of others (e.g., Chen & Cheng, 2008) suggests that the impact of such software depends to a large effect on how it is used. When AWE is used to replace writing for a teacher or other audience, students are dissatisfied (Chen & Cheng, 2008). However, when AWE is used as part of a social writing process—in which, for example, students write earlier drafts for review by the software, and later drafts to be submitted to the teacher or published online for peers—results are more positive (Grimes & Warschauer, in press). Such use provides students a range of tools (e.g., word banks, scoring rubrics) and rapid feedback (both on overall score and on language mechanics) to encourage and motivate autonomous writing and revision. And while students are working autonomously, teachers can individually help students most in need, while still reviewing all students' final drafts (Warschauer & Grimes, 2008). Finally, AWE software programs also include tools for teachers to comment on student drafts, and my most recent research project (see description below) suggests that some teachers use these tools to increase the amount of instructor feedback to students.

OPEN-SOURCE NETBOOKS

The use of technology for teaching writing is most effective when students have daily access to an individual computer (see studies by Russell, Bebell, & Higgins, 2004; Warschauer, 2006). Until recently, such access was very expensive to provide. However, new hardware/software combinations now make possible much more sustainable one-computer-per-student initiatives.

Netbook computers—laptops that are optimized for low weight and low cost—first emerged in late 2007. Most current models have 9-10 inch screens, weigh 2-3 pounds, and have sufficient capacity for most educational applications other than video editing (which could be carried out as needed on a small number of more powerful shared computers rather than on individual computers). Though netbooks can run on Windows, Linux-based open source operating systems maximize their effectiveness, since they place

fewer demands on the computers' limited capacity, and the use of other open source software (e.g., for word processing) further reduces the educational cost. More recent hardware developments, such as the use of very power- and cost-efficient ARM-based processors in new kinds of laptops that are sometimes referred to as smartbooks, may further remove barriers to widespread use of educational computers for the teaching of writing.

With funding from the Haynes Foundation and Google Research, I am currently carrying out a study in two U.S. school districts that have substantial numbers of English language learners and that have recently implemented district-wide student writing programs involving individual use of open-source networks combined with district-wide blog and wiki media. The total cost of hardware and software for the program in each district is approximately $300 per student; one of the districts also uses an AWE program at an additional cost of about $20 per student per year. In that latter district, students first write their essays using the AWE software, and then are encouraged to post their final essays on the school-community blog for comments from other students, teachers, or parents. The quantity of student writing appears to have gone up substantially in both districts, and students also receive much more feedback on their writing, whether it be from blog comments by peers, online comments from teachers, or software-generated scoring or error feedback. Initial test score analysis suggests substantial benefits in writing outcomes, including for English language learners.

CONCLUSION

The diffusion of new technologies, and the development of the knowledge economy that these technologies have contributed to, have made the teaching and learning of writing more important than ever before. Fortunately, these same new technologies can also aid the teaching of second language writing. Blogs, wikis, automated essay scoring, and open-source netbooks are four important tools that can assist writing instruction. As with other educational tools, none of these will bring positive results merely from their presence. However, thoughtful use of these tools can enhance effective instructional approaches that emphasize writing for meaningful social purposes, mastery of relevant genres, and development of students' academic language proficiency.

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