Teaching with Blogs: A Case Study of Technologically Mediated Literacy

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Keywords
digital literacy
blogs
multimodal literacy
pedagogy

Abstract

The mismatch between the print-based literacy focus of most classrooms and the lived electronic lives of teenagers prompted our case study of educational blogging. We conducted classroom observations in an eighth- and a ninth-grade English class over a two-month period and conducted thematic analyses of blogs created by the teacher and 28 eighth-grade students. We observed that the students were engaged in their class and eager to read and write online and to collaborate with their peers. They demonstrated hybrid literacies that met academic, social, and personal goals. We found that digital literacy as taught in this class comprised three aspects. First was proficiency in decoding and comprehending the symbols of print text (reading), as well as encoding (writing) these symbols and integrating them digitally with other expressive modes, such as images. Second was technological proficiency in the use of digital media, or digital fluency. Third was dynamic engagement in the interactive construction of meaning in a socially appropriate way. We propose that these aspects may serve to guide teachers in implementing digital literacy pedagogy.

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Introduction

Multiliteracies, multimodal literacy, new literacy, media and information literacy: All of these terms describe attempts over the last decade to theorize the expanding nature of literacy in an increasingly digital world. The widespread uptake of technologically mediated communication has democratized access to global knowledge, transformed the nature of literacy, and led educational researchers to question traditional approaches to schooling (Weigel, James, and Gardner 2009). Researchers have pointed to a mismatch between the traditional print-based literacy focus of most classrooms and the quotidian electronic lives of many of today's teenagers. The research literature abounds with visionary and anecdotal accounts of the potential that digital media hold for collaborative multimodal learning, yet few studies document attempts to implement technologically mediated multimodal literacy instruction in typical classrooms.

In this article, we present a case study of educational blogging in two junior high school English classrooms. Our study explores how the teacher employed blogs within his daily instruction and describes the technologically mediated literacy teaching and learning that occurred. We were specifically interested in documenting the hybrid traditional/digital curriculum in these classrooms and describing the characteristics of multimodal literacy evident in the teacher's and students' blogs and practices.

Background to the Study

The advent of a globally networked world, combined with the recent rapid uptake of technologically mediated communication, has affected the nature of everyday literacy. Literacies as commonly practiced by many youth worldwide have become multimodal (Jewitt 2006) and digital (Lankshear and Knobel 2008), and the need to update literacy pedagogy is pressing (Vasudevan and Hill 2008). Yet despite a plethora of reports detailing leading-edge innovations in digital literacy, few researchers have provided descriptions of the day-to-day practices and change processes of real teachers and students in typical classrooms as schools inch forward into the digital age.

Multimodal Communication in a Technologically Mediated World

Because of the rapid diffusion of personal computers and the birth of the World Wide Web and Web 2.0 (O'Reilly 2005), the integration of image, text, and sound in interactive multimedia presentations has become a common alternative to linear text and the static page. Increased ease of composing and publishing content to the Web through the use of multimodal publishing tools in the last five years has transformed the World Wide Web from a place primarily used for information consumption to a true collaborative medium (Schackman 2009; Richardson 2010). Most literate people with Internet access, regardless of where they live in the world, now have the possibility of reading online and writing to a global audience with ease. This transformation is evident in the current explosion of blogs, wikis, podcasts, and social networking sites, all of which facilitate community maintenance and formation and reduce geographic constraints (Lapadat 2008; Vasudevan and Hill 2008).

Blogs, or weblogs, are individual or group websites that can be easily created, customized, updated, and edited using free software such as Blogger (owned by Google; http://www.blogger.com/). A blog consists of a series of archived posts in reverse chronological order. Blogs typically contain text, hyperlinks to other Internet sites, photos, and other multimedia content, and most blogs are interactive in that they allow for audience comments (Nardi, Schiano, and Gumbrecht 2004; Richardson 2010; Schmidt 2007). Blogging software allows technically unsophisticated users to post with little or no knowledge of HTML code, an important contribution to the rapid diffusion of the innovation. Downes describes blogs as "the core of what has come to be called *personal publishing*" (Downes 2004, p. 18).

All blogs together form the blogosphere, an online network of texts that are interconnected. Online blogging communities have developed around topics of mutual interest, such as writing or educational technology. In contrast to the first wave of the World Wide Web, which offered limited interactivity, both the social practices and the technological affordances of social networking environments are dynamically shaped by users (Schmidt 2007). The phenomenon of blogging represents a fascinating context for observing participatory processes in action.

Technologically mediated communication is changing the way literacy is conceptualized (Bolter 2001; Clifford 2004; Merchant 2007; Thomas 2007; Williams 2008). No longer predominantly print-based, texts read and written digitally are multimodal; they incorporate and combine spoken, visual, auditory,

and written modes (Gee 2003; Jewitt 2006; Kress 2005; Kress and Jewitt 2003). Users create unique paths through an almost infinite set of possibilities for viewing, reading, hearing, constructing, and sending texts (Lapadat, Atkinson, and Brown 2010). The ease of digital interaction using Web 2.0 and its participatory ethos appears to be leading to a new forum for mass literacy and engagement in collaborative knowledge construction (Gee 2001, 2003). To be literate in the digital world is to be multiliterate; that is, able to interact across genres and technologies within a variety of online and offline communities to accomplish a range of work-related, educational, personal, recreational, and social purposes (New London Group 1996).

For many young people today, online computer-mediated communication is a seamless or even banal (Herring 2008) part of their lives. "For children who are immersed in media from their earliest memories, life on the screen is an everyday natural practice—they know no other way of being" (Thomas 2007, p. 167).

The Need for an Updated Pedagogy

Schools, however, have been slow to change. There is an increasing mismatch between the print-based literacy focus of classrooms and the lived electronic lives of teenagers (Merchant 2007). Out of school, young people might spend a great deal of time reading and viewing multimodal texts that relate to their interests and quests for knowledge. They might write online in their blogging communities, construct their own websites, and participate in chat rooms, instant messaging, text messaging, or interactive online games (Lapadat, Atkinson, and Brown 2009). Yet the form of literacy that typically is taught and valued in classrooms emphasizes reading over writing and remains predominantly print-based, individualistic, and focused on fiction and expository genres.

As teachers and schools cling to a traditional curriculum (e.g., an unchanging literary canon, the five-paragraph essay), old conceptions of literacy (e.g., print texts, teacher as audience), outdated pedagogies (e.g., transmission teaching, test-driven instruction, drill and practice), and obsolete technologies (e.g., the overhead projector), the gap between school practices and students' lives widens. The solution is not simply a matter of purchasing computers and putting them in schools. Although

most North American schools are stocked with computers that have Internet connections, these technologies typically are underaccessed and used in narrow, teacher-controlled ways for predefined ends (Fletcher 2006). What is required is a paradigm shift—an extensive overhaul of educational conceptions of both literacy and pedagogical practice (Amiel 2006; Pearson and Somekh 2006; Weigel, James, and Gardner 2009).

Paradigm shifts are hard to accomplish because teachers' long-standing personal philosophies of teaching and learning, their routine daily practices, and interwoven systemic administration procedures are self-sustaining and resistant to change. In our time, educators' moves toward incorporating technologically mediated literacies and practices have been hampered by the rapid pace of technological change, limited support for teachers' professional development, slow-to-change teacher education programs, demographic domination of less technologically fluent older teachers, media-fueled fears about student safety ("moral panics"), and top-down political agendas that impose accountability approaches and impede creative adaptation (Amiel 2006; Fletcher 2006; Gee 2003, 2009; Herring 2008; Merchant 2007).

Yet the costs of not changing our pedagogies to close the gap are huge. Potential consequences include the disaffection of teens as signaled by lack of effort, low school motivation, low achievement, and dropout (Cruickshank 2004); public perception of schools as ineffective, irrelevant, and obsolete (Weigel, James, and Gardner 2009); high school graduates unprepared for participation in a global digital economy; and teens who pursue online engagement on their own, outside the purview of knowledgeable, caring adults. A decade ago, Beavis (1999) called for the technological reconstruction of classrooms in order to enfranchise all students. This is beginning to happen, but the progress is slow.

Educational Applications of Blogging

Some teachers have taken up the new technologies (Downes 2004; Richardson 2009) and in the process have experienced transformations in their philosophy of education and their praxis (Kitchenham 2008). While most teacher blogs are *about* teaching or *about* educational applications of technology or are used for unidirectional delivery of content to students, some teachers have involved students in blogging as a learning activity. These teachers report that blogging

engages students, transforms teachers, and reconceptualizes learning and instruction (Richardson 2010). Students can express themselves through blogs as active producers of knowledge. Blogging offers access to primary sources of information along with multiple interpretations of complex events. By reading others' blogs, students benefit from their peers' reflections and have the opportunity to see emerging ideas rather than only final, polished compositions (Downes 2004; Huffaker 2005; Oravec 2002).

Despite the emergence of educational blogging and its popularization via "how-to" books for teachers (most notably, Richardson's widely acclaimed *Blogs, Wikis, Podcasts, and Other Powerful Web Tools for Classrooms*, 2010, now in its third edition), few researchers have formally studied classroom blogging practices. Harper (2005) studied blogging with adult learners and reports that his approach led to deeper thinking, more self-disclosure, and stronger interpersonal relationships. Brown and McGregor (2006) implemented blogging iteratively in several university education courses and used their observations to design more-effective blog assignments.

Although empirical studies of blogging in K-12 classrooms are rare, the few that have been conducted tend to focus on the role of blogging in identity development and expression (a topic that is beyond the scope of this paper; for more, see Buckingham 2008) and as a component of literacy instruction. As an example of the latter, West (2008) analyzed the weekly literary-response blog entries that students produced in her 11th-grade literature course, assessing the entries for meaning, use of social language, discourse model, and performance of situated identities. She describes student blogs as a hybrid genre that combines traditional academic critique with the playfulness and jargon characteristic of online messaging. Inspired by a student's prolific out-of-school creative writing in a blog—which was in marked contrast to her nonengagement in school writing assignments—Witte (2007) attempted to implement blogs in middle school literature circles. Despite achieving high levels of student engagement, she reports that she experienced such a lack of administrative and technology support in the school that she discontinued the use of blogging. Walsh (2007) had great success using website authoring to teach literacy and multimodal design to students enrolled in English as a second language classes. He reports that his students' fluency in digital literacy and visual modalities supported their development of literacy in English and their confidence as learners.

However, most accounts of classroom blogging and its relation to literacy are speculative or anecdotal. We have not been able to locate detailed case studies of classroom blogging that describe and analyze teaching strategies or students' learning processes and how these relate to the curriculum as well as to components of digital fluency. Our purpose here is to present such a case study. Case analyses are imperative if we are to move from idealized rhetoric about the possibilities of the electronic age to a map of how to implement new tools and pedagogies in practice and thus reshape praxis despite a myriad of barriers to change.

Methods

We studied two junior secondary English classes, grades eight and nine, taught by the same teacher during the winter semester, February to June. The school was located in a mixed middle- and working-class suburb of a small Canadian city. The students within the school's catchment area—a mostly middle-class neighborhood—owned computers, iPods, and cell phones. However, some students had less access to technology. For example, one student told us that he did not have a computer at home and would not be getting one, because he was "a poor Native."

Our study employed classroom observation, interviews with the teacher, and textual analysis of the teacher's and students' blogs to document emerging practices in technologically mediated literacy instruction. The research team consisted of three university researchers, Judith, Willow, and Catherine; the classroom teacher, Glen; and a graduate research assistant, Lucy. Glen introduced the students, ages 13–15, to blogging early in the semester, and by May and June, when the other researchers visited, each of the students had produced individual blogs relating to classroom assignments. The research team spent approximately 20 hours over a six-week period observing students blogging. We invited students to show us their blogs and to describe their responses to the blogging assignments as well as their experiences with technology at home. Field notes from these visits were complemented by casual and recorded dialogue with Glen. Subsequently, we completed a textual analysis of the full set of archived blogs of the eighth-grade class.

A number of contextual factors affected the study. The data were collected nearly five years ago when

the "blog explosion" was beginning. In the nonurbanized school district where the research took place, few teachers had heard of educational blogging, and next to none were using blogs in their pedagogy. Glen's teaching practices were seen as extremely innovative and were supported by a principal who was proud of Glen's reputation as a technological innovator. Thus, a healthy level of trust contributed to his ability to choose a nontraditional instructional approach and to solve problems without fear of administrative repercussions.

In recent years, secondary schools in the district we studied have made gradual moves to incorporate new technologies into pedagogy. For example, one middle school has structured its elective coursework so that all students use a mobile computing lab to learn how to conduct Web searches, evaluate websites, and design a webpage (Kitchenham 2008). A secondary school nearby broadcasts upper-level science courses to a distant rural school via videoconference and offers a few online elective courses, such as a film and media course. Nevertheless, as of 2010, in most secondary classrooms in the district, instructional approaches remain highly traditional and nontechnological, much as they were at the time we collected data for this study. Only a handful of teachers have incorporated social networking technologies such as blogging or collaborative online writing into their pedagogy. Conversely, a higher proportion of the students today are net savvy than was the case five years ago.

All of the ethics requirements of the University of Northern British Columbia Research Ethics Board, as well as the research approval process of the school district, were met prior to beginning the classroom observations and data collection. The research guidelines of both institutions were adhered to throughout the study.

Results and Discussion

Our analysis has four components. For each we present a description of the analytical approach, findings, and a discussion. Drawing on field notes from our classroom observations and interviews, we describe the teacher (Glen) and the instructional approach and curriculum used in the computer lab portion of English 8 and English 9. Next, we present the results of our qualitative textual analysis of the archived English 8 blogs, first analyzing the teach-

er's blog and then examining the students' blogs.[1] Findings relating to the teacher's blog include the pedagogical functions of his blog posts, the enactment of curricular expectations, and his approach to teaching digital fluency. The textual analysis of the 28 students' blogs yielded evidence of how they met curricular expectations, indicators of productivity, and patterns of social interactivity and multimodal practice. Finally, by again drawing on our record of classroom observations in both classes, we considered the students' situated blogging practices.

Teacher, Instruction, and Curriculum

Members of the research team spent many hours in Glen's English 8 and English 9 classes observing the instructional approach and discussing his praxis with him. This summary of observations addresses the teacher's philosophical approach, instructional activities, and the curriculum, especially as they related to blogging activities in the two courses.

The Classroom Teacher

Glen taught social studies, English, planning, and other courses at the secondary level. He describes himself as having embraced technology in his personal life and in his teaching. He has maintained a personal blog (http://thielmann.blogspot.com/) since 2004, linking it to his class blogs, webpage, and Flickr (http://www.flickr.com/) albums. On it, he shares elements of his identity and personal life, such as reviews of what he is reading or viewing, images of his family, images of himself involved in outdoor activities, and opinion pieces about current events, education, and technology. He has continued to use course blogs in courses he has taught since the two English courses we report on here.

Glen describes his teaching approach as constructivist. For example, when given English 8 and 9 as new teaching assignments, in true constructivist fashion he brought his existing set of skills and practices to the task. As an experienced social studies teacher he valued community knowledge and action, and as a technological innovator he saw the potential of the read/write Web (Richardson 2010) for building connections and teaching literacy. He collected a series of novels and other high-interest reading materials and emphasized writing, creating, and responding by assigning about 20% of his class periods to the computer lab.

Instructional Processes

Glen said that he explained new assignments in the regular classroom rather than in the lab because he felt that computers would be a distraction as students attended to the screen and their own blogs rather than to instructions. He handed out paper copies of assignments in class and also described the assignments in entries on his class blog, which students could access at any time. He designed assignments as open-ended WebQuests (inquiry-oriented activities in which some or all of the information that learners retrieve comes from resources on the Internet; Dodge 1997; see also http://webquest.org), inviting students to construct their own responses or select visual representations to demonstrate learning. For example, students were asked to search for and present appropriate images to represent the cast of characters in Hinton's (1967) novel *The Outsiders*. And in a biography assignment for Zindel's (1968) novel *The Pigman*, Glen began with an activity sheet suggesting a variety of media to use for the assignment, including film, writing, and slides. The corresponding computer lab period consisted of an open block of time during which students were free to work on the biography assignment or on any other assignment they chose.

In the lab, students engaged in a variety of student-directed activities. The teacher's role was that of facilitator and technical problem solver. Technology was made available and modeled, but for the most part applications were not specifically taught until students required help constructing a new component of their blogs, such as including an animation, video clip, or background music. Such assistance was as likely to be provided by a fellow student as it was by the teacher. Teacher management of off-task student behavior occurred as needed, which was rarely.

Glen often used multimedia presentations in his teaching. With a data projector, he introduced blogs and the practice of blogging to the class by guiding students through preselected examples of blogs. In another instance, he introduced a biography assignment by having students derive attributes of good biographies using inspiration software and a data projector. As students contributed their appraisals of good biographies, Glen added them to the screen by typing the labels on his computer and linking them with the mind-mapping software tools. The resultant concept web was then translated into the criteria for quality that were provided to students for their assignments.

Although the students were aware that their blog entries constituted a required part of their coursework, Glen's aim was to create a safe space for self-expression. He believed that a sense of freedom was necessary and would be hindered by the imposition of rigid criteria or explicit rubrics. Our own blogging experience with teacher candidates in university classes confirms this intuition. When we set grading criteria for blogs late in the term, we found that students' creativity suddenly dropped and their blogs lost their diversity and dynamic qualities of self-expression (Brown and McGregor 2006).

The Curriculum

In response to our query, "What is the curriculum in this class?" Glen stated an explicit goal of teaching the formal curriculum for English as mandated by the provincial curriculum document, the *Integrated Resource Package* (*IRP*) (British Columbia Ministry of Education 1996b).[2] Not unlike other English classes, he assigned novels and short stories to read—reading materials that can be found on curriculum resource lists for these grade levels across the continent. Writing assignments included genres such as literary response, biography, and poetry.

In addition to the explicit formal curriculum, we observed an additional incidental curriculum in action. Because of the use of a technological medium for teaching the curriculum, the processes of reading, writing, and learning looked different and incorporated different affordances than in traditional print-based classrooms. For example, the open-ended nature of the learning tasks offered the opportunity to learn additional skills such as collaborative project management, personal time management, production techniques, and interpersonal communication. Despite this being an English class, when students were asked what they were learning, several of them said they were learning about how to use technology, how to edit videos, or how to use HTML codes. The use of classroom blogs was an implicit curricular decision made by a technologically savvy teacher who had embraced digital technologies and saw their empowering possibilities for creativity and personal development.

The Teacher's Course Blog

In conducting a textual analysis of the teacher's blog (http://eng8.blogspot.com/), we followed several steps. We began by closely reading Glen's blog posts

and making marginal notes. Based on this preliminary assessment, we decided to focus on three aspects for analysis: the functions served by the teacher's blog; the curricular expectations encoded in the blog, both as guided by the prescribed learning outcomes of the provincial curriculum and implicit in a multimodal conception of literacy; and the elements of technological fluency explicitly being taught and modeled. We used both bottom-up and top-down approaches to thematic analysis (Boyatzis 1998; Lapadat 2010) to address these three aspects.

Pedagogical Functions of Blog Posts

We wondered how Glen was using the course blog and what functions his blog served. We descriptively coded the course blog text using a bottom-up approach. During the coding process, we attended to blog images and formatting (MacQuarrie 2010) as well as to text.

We found that the teacher's posts served a number of functions, including modeling blogging and appropriate content for posts, modeling technical skills and procedures, suggesting stimulating topics about which to blog, modeling the construction of multimodal texts, encouraging students' blogging efforts, prompting interactivity, and stating curricular expectations. Several of these functions are apparent in the teacher's post from March 9, for example, as shown in fig. 1. Embedded within many of the teacher's posts are explicit statements about entries that he expected students to post in their own blogs as course learning activities. Often these expectations are expressed as suggestions and include multiple options.

In all, Glen required nine posts from each student. He describes these requirements in his own blog entries. The first four student blog requirements were: (1) to produce a self-introduction, (2) to write a paragraph response to a specific short story from their anthology textbook, (3) to write a paragraph response to a second short story (optionally comparing it to the previous story), and (4) to post a blog entry of their own choice. As the semester proceeded, the teacher's expectations for multimodality and digital fluency increased. The fifth posting requirement (shown in fig. 1) was to produce profiles of five characters in the novel *The Outsiders*, using photos obtained from the Internet and annotating them with written descriptions and quotes from the book. Glen's blog post models what he expected.

As students became more proficient bloggers, Glen offered them more freedom in their blog posts. For

example, in their sixth post, they had the choice of either producing a response to the book *Anne Frank: The Diary of a Young Girl* (Frank 1993), recording their plans for the autobiography they were writing as a nonblog assignment in the course, or posting a description of what they were currently reading from the library. For their seventh post, they were asked to produce an entry relating to the unit on myth and were given three suggestions of possibilities. In their eighth post, which was to relate to the unit on poetry, Glen also gave three suggestions, one of which was to write a poem and post it. The ninth required post was to be an entry of their own choice. Glen provided seven suggestions for this, such as inviting the students to choose an interesting issue and present both sides of the argument in a debate format. Glen routinely encouraged students to search the Internet for information and images to use in their posts.

When we viewed the teacher's posts across the semester, we could clearly see that they scaffolded students' developmental progression. The tasks he required and the examples he modeled moved from narrow and structured to more open-ended, from the familiar to the more exploratory, from print-based to multimodal, and from requiring little fluency with digital environments to embracing the affordances of the medium.

Match with Curricular Expectations

To examine the extent to which the students' blogging assignments matched the expectations of the provincial curriculum, we used a top-down coding strategy in our thematic analysis. We coded posts to find each match to learning outcome statements in the "IRP: Appendix A" (British Columbia Ministry of Education 1996a). We found that the blog entries Glen required of the students met many of the provincial curricular expectations for eighth-grade English while also providing students with a wide range of choices.

The provincial curriculum documents state that students are expected to develop specific comprehension strategies and skills; to improve their comprehension abilities; to personally engage with materials that they read, listen to, or view; and to employ critical analysis (British Columbia Ministry of Education 1996). Early in the semester, Glen posed the following task for a short story his students had read: "In a well-organized paragraph or so, give a personal response to the story" (Thielmann 2005c, n.p.). This task, reminiscent of traditional English class assignments, meets the learning outcome of incorporating engagement

Figure 1 Screenshot of an entry posted on the teacher's English 8 class blog.

and personal response as core elements of students' comprehension—to "identify and explain connections between new ideas and information and their previous beliefs, values, and experiences" (British Columbia Ministry of Education 1996a, n.p.).

As another example of how blogging activities in this class were designed to meet learning outcomes for comprehension, midway through the semester, Glen suggested, "Find and read a myth from a library book or other source and 'review' it on your blog (as if you were conducting a book review for a newspaper or something similar)" (Thielmann 2005a, n.p.). This is an example of a write-to-read comprehension strategy that might help students "anticipate, predict, and confirm meaning while reading, viewing, and listening." Specifically, it might help them "organize details and

information about material they have read, heard, or viewed using a variety of written or graphic forms" (British Columbia Ministry of Education 1996a, n.p.).

Glen encouraged the students to write analytical blog entries. For example, near the end of the course, he suggested writing "an opinion piece: pick an issue that is important to you and offer a few views on the topic before offering your own opinion" (Thielmann 2005b, n.p.). This task is consistent with the curricular learning outcome for critical analysis: "It is expected that students will draw reasoned conclusions from information found in various written, spoken, or visual communications and defend their conclusions rationally" (British Columbia Ministry of Education 1996a, n.p.).

As well as meeting curricular guidelines for comprehension, the teacher's blogging requirements aligned well with the mandated curricular goals for expressive communication. For example, in composing and creating blog entries, he encouraged students to use "a variety of effective processes and strategies, including the use of electronic technology, to generate, gather, and organize information and ideas" (British Columbia Ministry of Education 1996a, n.p.). Students were encouraged to produce "works of communication on a wide variety of topics" (British Columbia Ministry of Education 1996a, n.p.), ranging from responses to the novels and short fiction they were reading, to writing poetry or interpreting poetry found in WebQuests, to writing their opinions about current events, to reflecting on topics of personal interest. Students were also prompted to "organize and structure information in a variety of literary, expository, persuasive, and other forms" (British Columbia Ministry of Education 1996a, n.p.), including book review, debate, personal response, annotated photo, character sketch, poem, and argumentative essay. Throughout the semester, Glen reminded students to read and respond to one another's blogs. He encouraged them to experiment with language and to use the cultural forms on the Internet as a resource.

Curricular goals relating to personal awareness, working together, and building community (British Columbia Ministry of Education 1996a, n.p.) were less visible as explicit prompts in Glen's blog entries but were clearly apparent in the day-to-day learning practices observed in the classroom and in the students' blog entries. Students worked closely together as they learned to blog, they individualized their blogs to highlight aspects of their personal identity, and they commented on one another's blogs and modeled design features after one another's work. Glen guided the students in this aspect of the curriculum not so much by setting specific tasks as by creating an environment that facilitated collaborative work and individual creativity.

This portion of the analysis revealed that the teacher was using the student blogging assignments to teach the provincially mandated English curriculum. Although the technological mediation of literacy through blogging was novel and supplementary (the computer lab constituted only 20 percent of class time), the blogging activities that Glen assigned were strongly congruent with provincial curriculum learning-outcome statements.

Approach to Teaching Digital Literacy

Lankshear and Knobel define *digital literacy* as "the myriad social practices and conceptions of engaging in meaning making mediated by texts that are produced, received, distributed, etc., via digital codification" (2008, p. 5). Extending this definition, we propose that digital literacy comprises three aspects. First is proficiency in decoding and comprehending the symbols of print text (reading), as well as encoding (writing) these symbols in a digital medium integrated with expressive modes such as font choices, visual images, and music. The second aspect is technological proficiency in the use of digital tools and media, or *digital fluency*. The third aspect is dynamic engagement in the social construction of meaning, which includes using new expressive registers, such as synchronous chat, in a socially appropriate way.

To explore how the teacher taught technological proficiencies, we recoded Glen's course blog, again using a descriptive bottom-up approach, to identify and record each instance or token pertaining to digital fluency. We also drew on our field notes for specific examples. We found that, in addition to teaching literacy as defined by curriculum guidelines and extended to encompass multimodal literacies, Glen also taught the technical skills, norms, and values of digital communication and modeled net etiquette and digital fluency. Glen explicitly taught the following technical digital fluency skills: how to create a blog, how to create a profile, how to write a blog post, how to find images on the Internet and insert them into a blog, how to insert links into a blog, how to access others' blogs, how to comment on others' blogs, and how to draft text in a word processor and paste it into a blog.

Glen also taught digital communication norms and aspects of net etiquette. For example, he taught

students to provide an appropriate self-introduction employing a nonidentifying alias and to avoid revealing uniquely identifying information such as geographical location or birth date in their entries. In keeping with blogging norms, students learned to select a template and customize it (layout, colors, fonts, background, and so forth) and to use the elements of typical blog genres (e.g., a profile, dated entries incorporating text and images, and links). The classroom blogs were presented as a dynamic, interactive medium. Students were expected to provide links to information imported from or referenced on the Internet. They were encouraged to comment appropriately on one another's blogs and were shown how to remove inappropriate comments.

Through the teaching of multimodal literacy, blogging, digital fluency skills, and communication norms, Glen imparted digital literacy values, both explicitly and implicitly. Internet-based communication broadly, and blogging specifically, were presented as valued means to express oneself and explore identity. As a nonhierarchical medium, blogs allowed student agency. Glen promoted this flattened hierarchy by, for example, inviting students to comment on the design of his personal website. By explaining how to delete unwanted comments, he encouraged student agency, giving power to the individual blogger and establishing a sense of communal responsibility to monitor social appropriateness.

Within these classes, the Internet was presented as a useful source of information. Reading (e.g., others' blogs, library books, Internet texts) and writing (e.g., blogs and various literary genres such as literary responses, poetry, and argumentative essays) were presented as valued activities. For instance, Glen posted on his personal blog a reflection on a book that he was currently reading, thus modeling reading and the sharing of thoughts about reading as appropriate activities. Multimodal texts, which form the literacy context for many teens, were valued, not discounted. Students wrote to a broad audience of peers and beyond, not just for the teacher, and therefore practiced meaningful communication and social construction of knowledge. When responding to what they read in class or online, Glen encouraged them to write critically and constructively. Although teachers often disparage the tendency of adolescents to spend more time socializing than focusing on academic work, in these classes social interaction via online communication was encouraged as a literate activity rather than seen as a detriment or diversion. Examples of student social interaction that were encouraged include writing personal profiles on their blogs, contributing "nice" comments on one another's blogs, and working collaboratively in the computer lab.

The Students' Blogs

We examined the 28 blogs produced by the eighth-grade students to assess how the students approached the curricular learning tasks within the multimodal technologically mediated environment.[3] We considered their level of productivity, the blogs as a medium for social interactivity, and the multimodal aspects of literacy reflected in their blogs. In contrast with our analysis of the teacher's course blog, our analysis of the eighth-grade students' blogs was more exploratory because of the quantity and diversity of the data. We conducted an emergent thematic analysis, coding for dominant themes and identifying patterns.

Curricular Requirements

In his course blog, the teacher expressed explicit requirements for the students' blogs. When we assessed the types and degree of technological fluency apparent in the students' blogs, we found that most of them had met, or nearly met, the teacher's stated minimal expectations for form. That is, they had included the basic elements of a blog: personalized template, self-introduction, images, links, and the requisite nine posts. In examining how students met curricular expectations in their blog entries, we found that the range of work mirrored what one would expect to see in a nontechnologically mediated English 8 classroom. Length of entries, quality of written English composition, depth of analysis, awareness of audience perspective, and so forth ranged from not or only minimally meeting expectations to exceeding expectations. However, consistent with the relaxed dynamics in the computer lab, few students closely edited their work for spelling, punctuation, and style.

Students' posts of paragraph-length responses to short stories that they had read most closely resembled the work typically submitted in a traditional eighth-grade English class. Written on their blogs early in the semester, these text-based reading responses were scaffolded by questions that the teacher had provided. Therefore, students were prompted to go beyond surface descriptions to consideration of characters' motives, moral implications, and the author's intent.

For example, in response to the story "To Build a Fire," Talis wrote the following about the main

character's response to impending death: "The 'new-found peace' the man had I think was because he realized there is no way he could have been saved, I think he felt like he knew what was going to happen so he might just as well not fight it."[4] About this same turning point in the story, Adriane wrote, "I thinik the turning point is when the guy was trying to survive and finnaly gave up. . . . His wild idea was to kill the dog and after when he couldn't he just wanted to sleep and die." About the author's point of view, Talis wrote, "I think the author sympathizes the dog more because it was so innocent and didn't have a choice to be there or not and like it was there only to help, I think he was trying to say that humans are really selfish and show that they will do anything if it benifits for themselves." Devin wrote, "When the dog part happened i think he should have treated the dog nicer so the dog would help him." Although the quality of writing varied, each student's response probed beneath the surface events of the story.

An example of an assignment that particularly engaged the students while closely aligning with curricular objectives was the required post for the poetry unit. Students posted poems they had found through WebQuests, poems they had written, and their analyses of poems. Sam, a student who used the alias "drunken_kangaroo" and whose other blog entries test the boundaries of acceptability by using humor with a racist or sexist edge, uncharacteristically included a series of several poems that he had written. For example:

> *a computer*
> There was a computer and it was super
> it had mouse for a hand and keyboard for feet
> it would make movies with one blooper
> and it had no mouth so it couldnt gleet

Devin, another boy in the class, wrote,

> My favorite english 8 assignment in this term was the poetry assignment. I liked it because i never really do that much poetry but this really made me challenge myself and think hard of what to write down. It took me a long time but i enjoyed the challenge and made some good poetry in the process.

The students' blog entries for this unit, which took place late in the semester, indicate greater familiarity both with using the Internet as a resource and with multimodal composition. For example, Slava cited her sources (in the form of URLs) for two poems she found on the Internet. In posts written earlier in the term, students seldom cited Internet sources. For two poems, both about animals, that Slava wrote herself and posted on her blog, she located and included an illustrative photograph. For example, she wrote this haiku, posting it with a thumbnail photo of a giraffe:

> *Giraffe*
> Tall and graceful
> Swiftly moves through the Savana
> In search of fresh green leaves

Productivity

Overall, we found that students used their blogs to produce work that helped them master objectives of the English 8 curriculum. But they went beyond this, embracing the medium and producing work, an outcome that is not always easy to accomplish with 13-year-olds in their first year of junior high school. All the students posted on their blogs, some a great deal. Two girls, Sydney and Talis, posted 17 and 23 entries, respectively. Most of the students completed nine posts, the number the teacher required, although some students' posts (especially the free-choice ones) show little relevance to the English curriculum.

Students with low print literacy also posted, relying on pictures and other scaffolds when composing. For example, Marc posted to his blog 10 times. All of his posts relate to his interests—paintball, cars, comics, animated television shows, movies, basketball, and video games. A typical entry for Marc includes a title, an imported graphic image, and some brief descriptive text, such as for his entry "south park": "i love the show south park it's hilarouse kenny looks cool in this picture lol." Although Marc's entries do not align with stated objectives of the English 8 curriculum, he was proactively engaged in the class and he was writing. We have observed in more-traditional eighth-grade classes that students with low literacy often respond by tuning out, giving up, or acting out. Therefore, we wonder about the potential of multimodal literacy environments to engage and support low-literacy learners. This topic requires further exploration.

Social Interactivity and Multimodality

What we find particularly interesting in the students' blogs is not so much how their posts reflect traditional curriculum objectives as how they reveal

evidence of the students' agency in embracing the digital nature of the medium. Representation of their self-identity and the elicitation and display of social affiliations were important for these students. They took care to personalize their blogs, to comment on and link to friends' blogs, and to socialize one another to topics that were cool and those that were not. For academic achievers and rebels alike, the English 8 blogs became a medium to extend their social world. With respect to social function, structure, and genre, these students' blogs bear a startling resemblance to the out-of-school blogs produced by two similarly aged friendship circles of Canadian youth reported on by Weber and Mitchell (2008). We are in the process of writing more extensively on these identity aspects.

As a technologically mediated literacy environment, the blogs allowed students to capitalize on multiple modalities in retrieving and interpreting information, in expressive composition, and in constructing a social identity. They used WebQuests to find examples of poetry and myths to post to their blogs. They located photographs, other graphic images, and video clips to use for the character profiles they wrote about *The Outsiders'* gang members, to illustrate poems and myths, and especially for their free-choice blog posts. By the end of the semester, many of the students were fluidly integrating retrieved information, marking the transition between it and their own point of view, and citing their sources or providing links. They used digital images to augment, anchor, or even to replace writing. Our impression is that the functions served by images might have a complex relationship with the degree of students' literacy sophistication, as illustrated by the examples of Slava's and Marc's blog entries. This observation also calls for further investigation.

The written text in these students' blogs represents a merger of oral language forms; new interactive written forms derived from instant messaging, chat, and text messaging; and formal written (academic) registers (Lapadat 2002; West 2008). As is typical of the new interactive written chat forms, many students omitted punctuation and capitalization, used spelling abbreviations, and included jargon such as *lol* (laughing out loud), as seen in Marc's "south park" entry. For some students, the structure and pragmatic intent of their blog writing derives from conversational oral language. For example, Brandon expounded on the topic of the day among Canadian boys—the NHL hockey lockout: "This NHL lock out is

crazy y did they have to shut down the nhl ???????? I no y because of the NHL players wat more money y do they want to be paid more?????" In addition to the conversational tone, note also the chat short forms, like "y" for "why" and "no" for "know." This contrasts with the academic style of composition and argumentation that the students typically used in their short story responses.

The students exhibited a range of digital fluency. Some students, like Devin, produced blogs that are primarily text-based, lack links, avoid chat jargon, and lack Internet references. Others, like Sydney, capably integrated images, video clips, animations, external links, and a blog roll of links to her friends' blogs. Sydney's writing style is a hybrid of chat style and formal written academic style.

These eighth-grade students considered it cool to be technologically savvy. Therefore, most of them used their blogs to showcase their digital knowledge by referencing role-playing games and video gaming culture, using chat conventions, deploying technical skills such as linking, and importing pictures and animations. Digital fluency was used to further curricular learning, as well as to accumulate or display social capital. Sydney, self-described as an honor roll student, demonstrated both aims in her blog. Similarly, Talis embraced blogging, posting frequently and adopting the personal diary style common to many blogs. Figure 2 is a screenshot of her post for *The Outsiders* character sketch assignment. Her work is a close match to the teacher's example, even including, without quotation marks, the same sentence: "He has a finely drawn, sensitive face that somehow manages to be reckless and thoughtful at the same time." The list of previous posts in the sidebar provides a glimpse of the personal-academic hybrid that Talis's blog represents.

The students frequently commented on one another's blogs, showing that they spent time reading one another's poems, written entries, short stories, and character profiles. We believe this is not a common practice for most students, who, in our experience, write assignments, hand them in to the teacher, and think little more about them beyond the grades they receive. In this classroom, reading and commenting on one another's work appeared to be a socially valued act. That said, for these students social appropriateness (or the coolness factor) appeared paramount. Their comments do not much resemble a formal style of literary critique. For example, Robyn commented on Claudia's *Outsiders* character sketch: "Wow! Claudia! This is the most

beautiful blog I have ever seen *tear* it's just so great. They're aren't even words to describe it. There! I posted on your blog. Happy? Lol." Kaylee's *Outsiders* character sketch attracted a series of comments, written by an American teen living in Vietnam, comparing the book and the movie. The English 8 students' blog posts fulfilled the teacher's assignment requirements, yet many of the students also appeared to be writing for their classmates, and potentially their audience was global.

It is clear that students embraced blogging as a social medium. As a final post, Talis wrote a 600-word rant about the school dress code, eliciting many comments from classmates. Several students wrote lengthy posts advising incoming students on how to succeed in junior high school.

One fundamental goal of the English curriculum is to improve written communication. To the extent that blogging increased the English 8 students' quantity of reading and writing and led them to develop a positive attitude toward writing, this goal was achieved. Over the semester, these eighth-grade students showed increasing proficiency in navigating a digital medium, finding and interpreting information, and using multimodal literacy to achieve social aims.
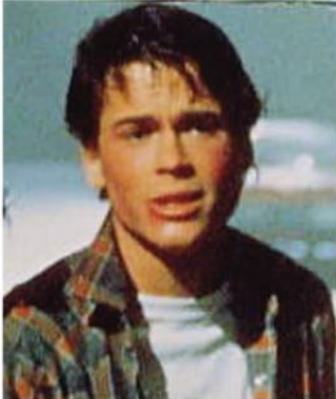
Situated Blogging Practices

Our observational field notes support the findings we derived from the textual analysis of the students'

Figure 2 Screenshot from Talis's blog.

blogs. As we observed the grade 8 and grade 9 students in dialogue with one another through their blogs, we saw that social languages-in-use were mixed with the more formal strategies of written expression usually taught in classrooms, yielding hybrid texts. Students incorporated Internet chat jargon and code names into their blog entries and comments as an insider identification practice. In a typical classroom such colloquial language might be discouraged, but in this multimodal classroom students were allowed to express themselves in a manner appropriate to the medium. Despite the casual registers employed, students took care with their compositions, sometimes revising them and correcting errors days after the initial post.

In observing these students at work, we noted the ease with which they shifted from mode to mode, between various technologies, and from one form of text to another. For example, as she wrote an assignment, Katie referred to a novel beside her. She had several windows open on her screen so she could check against assignment criteria posted on the teacher's blog, insert HTML text from a sample site, write up her assignment using word processing software, and cut and paste the required parts into her own blog. At the same time, she had an iPod earphone in her ear, enjoying tunes as she worked. As needed, Katie turned to other students to access their expertise.

The teacher was not viewed as the expert or key resource person. Rather, the students depended on one another's knowledge. For example, when Trent needed to know how to upload a file, his seatmate referred him to Jeff, who referred him to Justine: "Look at how Justine's doing this; it's a cool shortcut." The developing network of expertise created a climate of collaboration and shared accomplishment. Even a student without digital expertise like Trent was accorded value for his knowledge in poetry composition. The English 8 and English 9 classes, taught using the tools and democratic norms of Internet communication, seem to have yielded an ethos of shared performance that is unlike the typical climate in a junior secondary English classroom.

Students in these classes described blogging as "cool" and "fun." We believe they took an interest in completing the work because the work gave them opportunities to link class requirements to their own means of self expression, often in the form of music and images that reflect their taste in music, television, film, or icons of popular culture. Several students displayed prominent images of artists or musicians on their blog as markers of their own identity. They posted songs that reflected their personal tastes and represented social issues of importance to them.

Conclusion

Our study of one teacher's use of blogging in two junior high school English classes provides a case example of the implementation of digital literacy pedagogy. We found that formal curricular outcomes were addressed through technologically mediated learning activities, and we identified ways in which literacy was taught multimodally, along with the skills, norms, and values of digital literacy. Students in the two classrooms we observed were engaged rather than alienated. Their interests aligned with curricular objectives and were valued rather than ignored, denigrated, or banned from the classroom. We found that the teacher built on the students' desire for social collaboration as supported by the social affordances of the World Wide Web and that he taught within a constructivist perspective in which learning was both collaborative and socially situated.

The success of the teacher's innovative and technology-rich practice was rooted in his own digital literacies. Glen arrived in the electronic landscape early in his career and wholeheartedly embraced the new language and culture. When confronted with questions about what guiding parameters to provide for students, such as whether students should be required to leave a comment after visiting another student's blog, he reflected on his own experience in the digital world for an answer that made sense. Fully engaged in digital media in his private and recreational life, Glen taught from his identity, sharing who he is as a creative designer and reflective learner with as much instructional power as he shared his knowledge of curriculum content. Modeling the use of technology-mediated responses to literature allowed him seamlessly to integrate technology as a teaching and learning tool rather than teaching its use separately as an isolated subject.

Today's students have digital literacies that they use on a daily basis outside of school (Lapadat, Atkinson, and Brown 2009, 2010; Weber and Mitchell 2008). Adolescents can achieve cultural and social acceptance in many ways. Proficiency in digital media has become one such way. In addition to the formal written and spoken literacies of the English classroom, digital literacies have become necessary for participation in democratic society and therefore require a central place in classroom learning.

Multimodal literacy, digital fluency, and knowledge of sociocultural Internet protocols and ethical practices are the literacies needed for navigating the new cultural spaces of the World Wide Web.

Our conclusions are consistent with many claims that have been made in the research literature over the past decade. Yet a large gulf remains between the potential of technologically mediated multimodal literacies, as modeled by leading-edge researchers and educators, and the daily contexts of most high school classrooms, where the curriculum and instructional approaches have changed little in the past 40 years. A confluence of factors presents real barriers to change: the demographic domination of older, less technologically fluent teachers; a pace of change that is so rapid that by the time a teacher learns a new technology it is already obsolete; and a culture of scholarship that celebrates leading-edge innovation while providing few supports to implementation that can be applied by educators who are systemically enmeshed within traditional schooling practices.

New methods of analysis suited to multimodal texts are needed (Crichton 2010; MacQuarrie 2010; Wissman 2008), as are detailed case studies that describe teachers' innovative practices incorporating multimodal and technologically mediated literacies in actual classrooms. Such case examples can provide a model and a bridge. Although we believe the research described in the present article provides one such model, much additional work is needed to develop a strategic framework for a pedagogy of digital literacy. Change processes that bring educational praxis into the digital era are necessary if schools are to retain their role as relevant social institutions.

Appendix: Supplementary Resources

Institutional Educational Technology Sites

Edublogs (http://www.edublogs.org/). This site hosts blogs for educators, either via the Edublogs site or in the school's own domain, and provides easy templates, tools, and tips for creating educational blogs.
EDUCAUSE (http://www.educause.edu/). "A nonprofit association whose mission is to advance higher education by promoting the intelligent use of information technology." ERIC, the Education Resources Information Center (http://www.eric.ed.gov/). "An online digital library of education research and information." Sponsored by the U.S. Department of Education.

MIT OpenCourseWare (http://ocw.mit.edu/OcwWeb/web/home/home/index.htm). "A web-based publication of virtually all MIT course content."
Online Education Database (http://oedb.org/). This site provides information about online colleges, continuing education, and distance learning.

Teacher-Created Blogs about Education

Blog of Proximal Development (http://www.teachandlearn.ca/blog/). This blog by Konrad Glogowski provides a useful archive of material on the Vygotskian underpinnings of blogging communities in education.
Digital Writing, Digital Teaching (http://hickstro.org/). This blog written by Troy Hicks "explores the variety of issues related to teaching writing with new media for K-12 teachers and teacher educators."
The Rapid E-learning Blog (http://www.articulate.com/rapid-elearning/). This blog developed by Tom Kuhlmann is focused on e-learning course design and building communities of practice.

Classroom and School Blogs

Mr. Maxwell's Lessons (http://neilmaxwell.edublogs.org/). The blog of Neil Maxwell, an English teacher living in Hong Kong, is described as "a site for all my students of English Language and Literature (and teachers) to facilitate the teaching and learning of English."
S Team News (http://steamnews.edublogs.org/). This multiteacher, multisubject blog is actively used by the sixth-grade teachers at a middle school in Alaska for day-to-day teacher-to-student communication.
Storylines (http://storylines.edublogs.org/). This blog supports the senior school literature program at an independent boys' school in Sydney, Australia: "Year 7 and 8 boys are introduced to stories, real and imagined, and challenged to be both story makers and readers."

Acknowledgments

Notes

1. A textual analysis of all of the blogs from both classes would have been overwhelming. In narrowing the focus, we chose students' blogs from the eighth-grade class because one of the researchers had just finished conducting a multiclass observational literacy study in eighth-grade English at another school in the city and was thus familiar with the curriculum and characteristic instructional approaches.

2. The grade 8 language arts curriculum documents in use in 2005 are collected are online at http://www.bced.gov.bc.ca/irp/ela810/elatoc.htm. These are the documents used in our analysis. In 2007, an updated version was adopted.

3. Thirty students had enrolled in the eighth-grade class, but one student's blog had disappeared from the archive, and another had created a blog but never posted to it, which left 28 student blogs to be analyzed.

4. Quotations from the blogs are verbatim, with no changes to spelling or punctuation.

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