Infusing Multimodal Tools and Digital Literacies into an English Education Program

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Any envisionment of a future English curriculum needs to recognize a major shift in how adolescents are communicating with each other through IM'ing, MySpace, Facebook, YouTube, Flickr, blogs, and other virtual interactive tools (Knobel & Lankshear, 2007; Lenhart, Madden, & Hitlin, 2005). In using these tools, adolescents are moving beyond using the web to simply access information to using what are described as Web 2.0 tools to be active communicators on the "Read/Write Web" (Richardson, 2006, p. 3) involving both reading *and* composing on the web, both understanding *and* producing multimodal digital texts.

Web 2.0 refers to the next generation of Internet services such as blogs, wikis, social networking sites, and technologies currently under development that will change how individuals collaborate and interact online. A primary appeal of these Web 2.0 tools is that adolescents can easily compose multimodal texts for sharing with both local and worldwide audiences. Within the classroom, rather than simply creating multimodal texts for the teacher, they are highly motivated to participate in social, online communities as "affinity spaces" (Gee, 2004) organized around shared interests and knowledge. In these "participatory cultures," their contributions as new members are valued by other members in a supportive community (Jenkins, 2006a). For example, members of sites such as fanfiction.com contribute narrative writing and receive feedback from veteran members (Black, 2005).

Given this ready access to these broader, even world-wide audiences, adolescents must then know how to go beyond simply creating multimodal texts to knowing how to design these texts using visual rhetoric to effectively attract, engage, and influence their audiences. Students learn how to

employ visual design through using icons, images, words, buttons, and interfaces and determining audiences' reactions to them (Hocks, 2003; Wysocki & Jasken, 2004). It also requires an understanding of how Web 2.0 tools such as blogs and wikis function to foster constructivist, inquiry-based learning related to fostering critical thinking and deep reading practices.

Such awareness requires that English language arts teachers acquire some familiarity with media tools so that they can model their uses. Preservice teachers need to know how to help students learn to employ interactive Web 2.0 tools and to create social contexts that foster effective use of these tools. They also need to know how to integrate these tools into reading and writing instruction in ways that make the tools part of larger inquiry-based projects. Rather than teaching "reading" or "writing" themselves as what Brian Street (2001) characterizes as autonomous literacies, preservice teachers learn to develop activities using these tools to foster engagement with and critical analysis of ideas and social issues (Beach & Myers, 2001). For example, they can use chat, IM'ing, blogs, or wikis as interactive online tools to foster not only thoughtful analysis and reflection on ideas and social issues but also use of multimodal links to images and texts as part of these discussions. All of this has major implications for our own English methods courses in which we ourselves model the very tools we want our preservice teachers to model for their students. Thus, in this article we stress the importance of using these tools within methods courses and practicum sites by reflexively noting how and why these tools function to achieve certain rhetorical purposes and foster constructivist learning.

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Redefining the English Curriculum

The shift to active use of multimodal, interactive Web 2.0 tools suggests the need to redefine notions of reading, composing, and performing processes to infuse digital literacies that students use daily into English language arts curriculum. For example, while traditional print-based reading instruction focused on inferring the "main point" or idea—based on linear processing of information, in reading and producing digital texts, adolescents need to know how to select certain links on a page that will provide them with needed relevant information (Kress, 2003). Internet reading also requires knowledge about how tools like search engines work, knowledge about how infor-

mation is organized on web pages, and requires higher levels of inferencing across linked texts and more careful comprehension monitoring in order to stay on task (Coiro, 2005). Rather than processing information on Web sites in a linear, left-to-right manner, they learn to attend to links on a page that trigger selecting appropriate options.

Similarly, in composing digital texts, adolescents need to think both multimodally and semiotically—that is, they need to think about which media and modality best represent their ideas and how to format their pages in ways that invite their readers to select those links leading readers to relevant information. The composing plan involves not only what one wants to say, but *how* one wants to say it, and knowing how to strategically place links that lead to the intertext. They must also anticipate options that readers might take in reading and constructing/reconstructing meaning using different modes of representation (print, pictures, video, audio, combinations of these). For example, in posting material on MySpace or blogs, adolescents draw on visual design and rhetoric to both engage audiences as well as to change their beliefs and attitudes. And, as critical readers in these virtual spaces, they then assess how visual design functions rhetorically through developing "visual arguments" that are evaluated in terms of their impact, coherence, visual salience, and organization (Selfe, 2005; Wysocki, 2004). They also need to critique the ideological agendas shaping visual arguments they encounter on a daily basis ranging from an advertisement telling us to buy a product or a billboard urging us to believe in an ideological position, critiques that they draw on in framing their own arguments.

The use of Web 2.0 tools has also resulted in an increased emphasis on multimodal digital communication in allowing adolescents to readily mix images, video, music, and print texts. These experiences afford them new ways of understanding and producing digital texts. Adolescents are accustomed to experiencing the same content portrayed across different media—for example, the spoofing of TV political ads using Photoshop that end up on YouTube. Henry Jenkins (2006b) argues that this media convergence is not a function of the availability of technological tools, but involves the active, bottom-up participation by media creators operating collaboratively. Adolescents learn to portray or morph the same ideas, stories, people, or characters in different ways across different media (Kress, 2003). In his book on "convergence culture," Jenkins (2006b) argues that adolescents operate in online communities as a form of "collective intelligence" (p. 4):

> None of us can know everything; each of us knows something; and we can put the pieces together if we pool our resources and combine our skills.

> Collective intelligence can be seen as an alternative source of media power. We are learning how to use that power through our day-to-day interactions within convergence culture.

Jenkins (2006a) cites the example of a New Media Literacies Project (www.projectnml.org) that asks adolescents to construct the same story across different media, for example, creating dialogue in IM'ing, a storyboard in PowerPoint, images from online photo sites, and performance of the story in digital video. Or, adolescents in this project recreate characters within *The Sims 2*. In a virtual role-play activity, adolescents engage these characters in interactions on a screen to explore issues of interpersonal conflicts (www.mylenecatel.com).

Jeff Rice (2006) has argued that this emphasis of digital multimodal production requires a redefinition of English around the idea of connectivity through digital social networks:

> When I participate in an online service like LiveJournal, Facebook, or MySpace, I engage with a series of interconnected encounters at the level of personality, writing, interest, politics, and taste. The moment I view an advertisement on TV, in the movie theater, or on the Web, and that ad calls to me (purchase this product/identify with it), I enter into an economic and emotional connection with new media production . . . .What I call the network are these spaces—literal or figurative—of connectivity. They are ideological as well as technological spaces generated by various forms of new media that allow information, people, places, and other items to establish a variety of relationships that previous space or ideologies of space (print being the dominant model) did not allow (p. 128).

The ability to create these connections through what Jenkins (2006a) describes as "transmedia navigation" (p. 10) requires adolescents to know how to design multimodal texts in ways that best exploit the affordances of different media tools. For example, in using digital storytelling to construct multimodal autobiographical narratives, adolescents need to know how to mesh images, music, popular culture texts, and their own autobiographical writing. In describing the digital video productions in the DUSTY ("Digital Underground Storytelling for Youth") community project program in Oakland, California, Glynda Hull (2003) found that participants in that program drew heavily on popular culture texts. She describes one meeting in the program:

> They had gathered to watch the digital stories created by young people from the community—three-to-five minute multi-media compositions consisting of a narrative recorded in the author's voice accompanied by photographs, video, and music. The event began with a story by Randy, "Lyfe-

> n-Rhyme." "Mama's only son is mama's only gun with a guillotine tongue," rang one rhythmic powerful line, as images of Randy and his mother morphed into photographs of the county jail, while the music of Miles Davis floated in the background. So proceeded Randy's social critique and commentary on life and opportunity, or the lack thereof, in his city and country. (Hull, 2003, p. 229).

Dan Perkel (2006), drawing on diSessa (2000), argues that mixing and remixing these different digital media entails different ways of thinking about certain topics: "Different media have different expressive properties, or affordances, and facilitate new ways of thinking. How we think when we write can differ with how we think when we talk, draw, paint, or write software" (p. 4), ways of thinking that are constituted by technological tools. Understanding and using these tools are linked to social participation through genres as patterned uses of language as social activity. He cites the example of the construction of MySpace profiles in which members import images, video, and audio that entails knowledge of genre practices specific to MySpace. Perkel calls the ability to copy and paste images, videos, and audio into their profiles as well as remixing "a collective technical practice." To adapt diSessa's vocabulary, one could see remixing as a sign of a new, "networked material intelligence" (p. 12). Thus, the Web 2.0 tools allow adolescents to tap in a virtual "collective intelligence" (Jenkins, 2006b), via collaborative online writing tools such as wikis or Google Docs, or social photo sharing sites such as Flickr in which "affinity groups" (Gee, 2004) organize around shared interests in certain topics.

Adolescents, therefore, draw on both social and genre knowledge to move across different digital modes. In our own research with middle school students, we found that they drew upon prototypical narrative patterns in constructing projects (O'Brien, Beach, & Scharber, 2007). For example, in creating comic-book characters and storylines using Comic Life™, students applied their knowledge of narrative patterns and characters derived from video games. One 8th grade student, David, created a comic book entitled, "Die," derived from his experience playing the Mortal Combat™ and Dragon Ball Z™ games. He drew on experiences of one player teaming up with another player to beat opponents as an idea for creating a similar storyline in which the "good guys" team up to overcome their opponents.

Adolescents can also use Web 2.0 tools to alter or remix texts to engage in critical inquiry (Beach & O'Brien, 2005; Myers & Beach, 2004). By engaging in "culture-jamming," (Lankshear & Knobel, 2003) evident in *Adbuster* parodies, they are learning to critique ideological media messages by recontextualizing the meaning of images and texts from their original to an-

other, more subversive context that, in turn, leads to interrogation of the meanings operating in the original context. For example, they may critique an ad with the image of an SUV in a rugged, backwoods setting and transport that same SUV to sitting stuck in traffic in a smog-filled city. Recontextualizing the original positive meaning of the image to a negative one serves to interrogate the consumer ideology of the SUV as a necessary vehicle for life in the backwoods, an ideology that masks issues of gas consumption and pollution (Beach & O'Brien, 2005; Beach & Thein, 2006).

Implications for English Education: The University of Minnesota English Education Program

We now turn to a discussion of how in our own program, we have infused the multimodal digital tools into our methods courses. The English education program at the University of Minnesota is a one-year post-bac program in which students take separate literature, composition, reading, media-studies, and English curriculum theory methods courses in conjunction with practicum experiences. While these are separate courses, we attempt to integrate these experiences as much as possible, particularly the instructional technology component (Dexter, Doering, & Riedel, 2006; Hughes & Scharber, in press). During the summer months, English and learning technologies faculty design their syllabi to facilitate an approach where preservice teachers (PTs) are encouraged to understand the application of their learning. To illustrate this integration, we describe some projects in our program, as well as research we have conducted on the value of these projects.

A Middle School Practicum Context

Given the focus on interactive use of tools, all of our courses employ either a WebCT or a Tappedin.org course site that allows students to continually share their multimodal texts with their peers as audiences (see also Scherff & Paulus, 2006). PT's engage in a Fall practicum program in a local magnet middle school that serves students from grades 6 to 10 from a wide range of socioeconomic backgrounds. The school uses a cart-on-wheels approach to technology integration where the labs are checked out by the teachers and are distributed throughout the class with each student receiving their own computer. Our faculty and the middle school faculty have worked together for six years designing, developing, and delivering projects that connect the English preservice teachers with the middle school students. During the summer months, our faculty plan their syllabi in conjunction with the middle

school teachers to design the experience. Then, throughout the fall semester the projects are deployed where the PTs spend, on average, one day a week in the middle school working with the students.

We have also employed numerous communication technologies such as TappedIn and instant messaging to set up interactions with middle school practicum students to create another, alternative audience, interactions that address the problem of lack of time for face-to-face interactions in the school. This means that the middle school students are actively involved with an online experience with the PTs, ranging from sharing of online content through wikis to instant messaging, email, and discussion boards, depending on the project. The technologies employed varied according to year and goals that were developed during the summer months. For example, the PTs' media studies class was organized around blog writing and creating a media studies wikibook, tools that allow for easy importing of visual images. Organizing instruction around these sites serves to model ways for PTs to foster online sharing of digital, multimodal texts during their practicum as well as their student teaching experiences. Below, we discuss numerous projects that have taken place over the past years that have involved the collaboration between PTs and middle school students.

Multimodal/Genre Writing: Hypertextual Links

A central aspect of multimodal digital writing is the use of hypertextual links between texts, linking afforded through the use of tools such as Inspiration mapping tools or Storyspace™ (Bolter, Smith, & Joyce, 1990). In one project, our twenty-seven English PTs collaborated with the middle school students using asynchronous web discussion to develop hypermedia projects that fostered and promoted the use of technology as a tool (Doering & Beach, 2002). The PTs and students developed a multi-genre project where they wrote a biographical sketch, a newspaper report, and a fictional narrative about a famous person. Within the PTs' instructional technology class, they utilized Storyspace (Bolter, Smith, & Joyce, 1990) as a tool to develop and link multimedia material as they developed hypermedia versions of their multi-genre writing project.

The preservice and middle schools students were continually interacting online about their project work. For example, in writing about Princess Diana, a student posted the following message:

> Last night I went on the Internet and found alot of stuff like her will, and her divorce papers and some poems some people wrote about her. I also found some pictures of when she was younger.

And the preservice teacher responded:

> Last night I bought a couple of books about Princess Diana that were on sale at the bookstore. One contains a bunch of short little memories of her written by all sorts of people that knew her in her lifetime. I will also print at least 2 articles from the Internet that will be helpful (not too long) for us to think about what we want to write about. See you Wednesday. (Doering & Beach, 2002, p. 1).

The PTs used Storyspace™ to create links between images representing different thematic aspects of their biographical subjects. For example, in a multimodal portrait of Martin Luther King, Jr., one student linked a picture of King with four links to "Enemies and Resistance," "Awards and Supporters," "Biographical Information," and "Civil Rights Efforts" (Doering & Beach, 2002). Then, each of these topics is linked to further images—the "Civil Rights Efforts" is linked to images of "Sit-in Demonstrations," "Passive Resistance," "Montgomery Bus Boycott," "Writings," and "Marches and Speeches." And, the "Montgomery Bus Boycott" is linked to a video clip of the boycott.

In working with their middle school students, the PTs could then use their projects to model ways of using links to create multimodal texts. They also used the online exchanges to pose questions and scaffold ways of thinking to assist the middle school students as they were creating their multimodal texts.

Digital Mapping Tools

The PTs also employed digital mapping tools such as Inspiration to define links between images and texts for creating multimodal texts as part of learning to employ a range of digital writing tools (Beach, Anson, Breuch, & Swiss, 2008; see also http://digitalwriting.pbwiki.com). In Inspiration, students can create links to visual icons or symbols, import material from their own digital files that they may have downloaded from home or from an extensive collection of symbols, pictures, images, and digital clips including QuickTime movies and MP3 files. PTs developed concept maps that showcased how they would employ the technology within their future classrooms. That is, they developed an example of using mapping in multimodal ways to encourage their future students to use the tool in this manner. For example, Jon noted how he would use mapping with the teaching of Shakespeare and his plays (Figure 1). In the development of his map, Jon mapped the genres of the plays of Shakespeare including comedies, histories, and tragedies. Each genre was subdivided with hyperlinks to the Internet to further explain them. Jon

also linked videos to the plays to encourage his future students to use a multimodal approach to learning Shakespeare.

Then, when they are working with their middle school students, PTs mutually employed digital mapping as both an exploratory, prewriting tool for thinking about different aspects of a topic and as final reports of their work. These digital mapping tools were also employed in projects such as the Urban Neighborhood Project where we are situating the PTs and middle school students in urban neighborhoods to dissect the many issues it is confronting using various tools.

Using Tools for Critical Inquiry: The Urban Neighborhood Project

It is also important that PTs learn to frame the use of tools within the larger context of critical inquiry instruction (Beach & Myers, 2001; Myers, 2004). In another project, PTs engaged in an inquiry-based project with middle school students as they studied issues facing an urban neighborhood—issues of poverty, housing, employment, pollution, gentrification, law enforcement, etc. (Beach & Thein, 2006; O'Brien & Beach, 2003). For each of the three years, the new cohort of PTs worked with the new middle school students

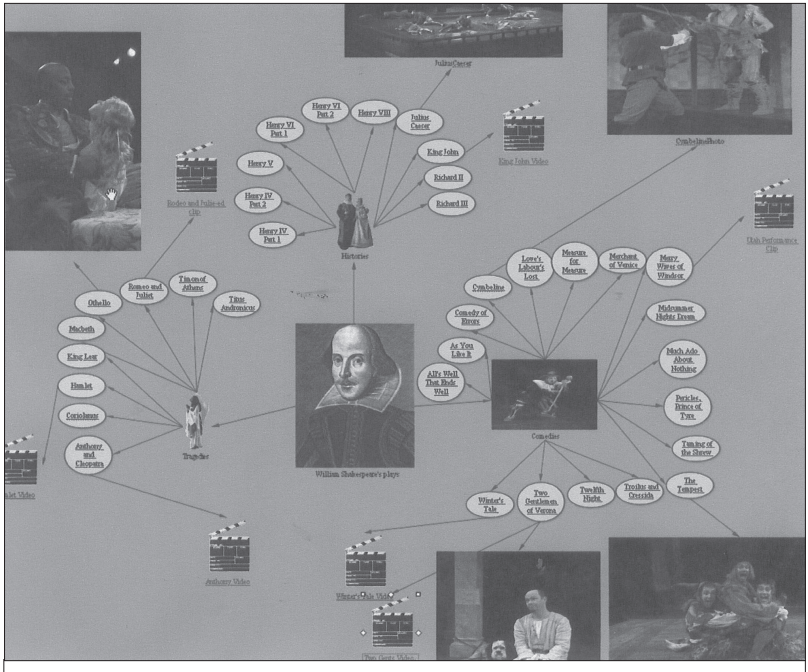

Figure 1. Concept Mapping as a Multimodal Tool

where they worked with two to three students which they met twice a week, and communicated via IM and/or WebCT at minimum once a week. Both PTs and students formulated perceptions of issues based on background reading of texts and websites, discussed issues common to urban neighborhoods, defined questions related to these issues, and engaged in interviews with neighborhood residents, business people, and community-development officials. They took field notes and captured and communicated their experiences using a wide range of technology tools, including digital photos and video. They also wrote reports about the nature of the issue facing the neighborhood and possible solutions.

A central aspect of critical inquiry instruction involves going beyond studying issues to acting on those issues. In this project, students employed digital multimodal texts as posters or websites to share what they perceived to be the issues facing the neighborhood to peers, local residents, business people, and community development officials. From this experience, both the PTs and students learned the importance of visual rhetoric associated with combining images, video clips, and texts to engage their audiences.

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The PTs developed websites that showcased the issues the neighborhoods were facing. For example, Sara studied "Bloom Lake," an area of the neighborhood she described as a "very distinct contrast between thriving businesses and dreary deserted storefronts" (Figure 2). Within her website, Sara used hyperlinks to web sites that assisted in describing the region; aerial maps she incorporated to make the location more clear to a reader; a concept map to provide an overview of the businesses, issues, and influences within the Bloom Lake area; and a PowerPoint presentation and an iMovie that showcased a restaurant within this neighborhood.

The PTs and middle school students then worked together to develop material for multimodal poster-session presentations to share in a poster fair for the entire school and community members portraying images and their writing. In constructing these posters, the PTs and students had to consider how to combine images and texts in ways that best illustrated their analysis of the particular issues facing the neighborhood.

In the reading methods course, the PTs constructed case studies of middle school students' engagement in various aspects of the critical inquiry project and gleaned the middle school students' perceptions of themselves as readers and writers. Case study data included the middle school student artifacts created as part of their projects (e.g., maps, descriptions of

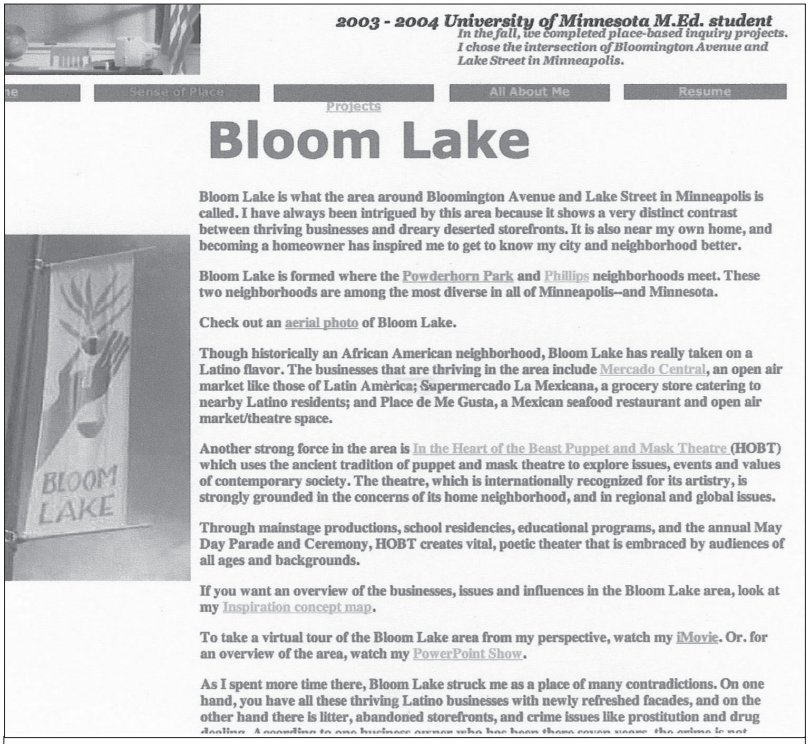

Figure 2. Bloom Lake; Multimodal Web site

neighborhood sites, photographs, interviews with neighborhood business owners or civic officials); assessments of their reading, including both oral reading of print texts and thinkalouds/talkalouds about their understanding of their evolving digital multimodal texts; and audio-recorded and transcribed interviews about how the middle students viewed their literate competencies as the projects evolved. The case studies were presented as part of a final cross-case analysis in which teams of PTs compared their cases and generated themes common across the cases. The PTs presented their cases multimodally so that they could preserve the middle school students' project work while presenting the critique of the work.

Place-Based Ethnography Projects

As the PTs were working with the middle school students on their urban neighborhood inquiry project, the PTs conducted their own inquiry-based ethnographic study of a particular site—a workplace, community organization, institution, etc.—which they shared with each other and their middle

school students. For example, one PT conducted a study of the YMCA in which he works as a swimming instructor. Another PT conducted a study of the music club in which his band performs. The PTs then shared their research experiences with students to model or illustrate various methods of studying a site.

They employed Inspiration as a tool for creating visual maps of different aspects of their writing and links between these aspects. QuickTime Virtual Realities (QTVRs) and movies were also created for their locations under investigation. Furthermore, the maps, movies, QTVRs and writings were posted online on a web site the PTs developed in their technology course. The web sites enabled fluid hypertextual linking from interviews to movies and QTVRs that emphasized their message. They captured the "place" that was most meaningful to them and subsequently dialogued about it online with other PTs and their middle school students.

To discuss the project with the middle school students when they were not face-to-face, PTs utilized the course management system, WebCT. PTs were asked by the course instructor to make at least one posting a week to their middle school students. They were encouraged to discuss topics or issues in the course discussions, readings, or practicum experiences, as well as other topics that they were encountering outside of the formal class where the discussion was taking place. It was hoped that these exchanges would enhance PTs' relationships with their students outside of limited face-to-face time (Doering & Beach, 2002; Shoorman, 2002). For the online community of PTs, the exchanges can facilitate shared reflections about practicum experiences (Mitchell, 2003), in a non-evaluative setting (Edens & Gallini, 2000), and foster an appreciation of the social aspects of learning (Blanton, Simmons, & Warner, 2001).

We then conducted surveys of PTs' perceptions of the value of participating in the urban neighborhood and sense-of-place projects through open-ended surveys (O'Brien & Beach, 2003). The PTs indicated that the following areas were valuable: (1) The opportunity to collaborate with students in studying a neighborhood that was typical of many of their urban students' home neighborhoods helped them understand some of the economic and cultural factors influencing their students' learning, as well as some of the rich "funds of knowledge" (Gonzalez, Moll, & Amanti, 2005) these students bring to school. (2) They valued the opportunity to investigate issues impacting the lives of neighborhood residents—work that may provide possible explanations for and solutions to problems related to housing, community development, employment, and recycling. (3) They learned how to prepare,

collect, and analyze data related to an issue and possible solutions, in addition to data analysis involved in completing case-study analyses of their students' performance on complete project tasks related to engagement, interest, ability, and social skills. (4) They found that the technology tools employed in the project, such as digital photography as a tool for documenting and displaying concrete evidence associated with analysis of an issue, and the use of WebCT exchange with students as a tool, helped them maintain on-line relationships. As an example, Darla developed a website on an intersection within Minneapolis she called the "Longfellow Intersection." Darla incorporated PowerPoint, iMovie, concept mapping, aerial maps, and narratives to describe this place in a multimodal approach.

At the same time the PTs noted wide variations in students' engagement with the issues they studied as well as the students' willingness to contribute to collaborative projects, we also found that the PTs themselves varied in their willingness to cope with these challenges—with some PTs having difficulty accepting some of the logistical and time constraints influencing the project (Burant & Kirby, 2002). They also recognized the need to build on students' own preferences and interests in creating multimodal texts. As one PT noted:

> I asked my students about their school preferences, activities with friends and family, passions, and preoccupations . . . asking about 'favorites' often unleashed opinions (favorite movies, hangouts, CDs, or types of music). Following up with open-ended questions, such as "What do you like (or think) about . . . ?" spurred my students to use their language skills to support their opinions . . . I strongly encouraged the girls to read and enter the experience and perspective of others, including all fiction genres: horror stories, fantasy, science fiction, or romance.

PTs also experienced tensions between their own ideas for creating the final report and the fact that their middle school students were reluctant to do more than the minimum work:

> I had no idea how fast somebody would finish something and a lot of them just cut and pasted—that's how they do things now off the Internet like "Okay, here is my report!" There it is with pictures, and it looks great, but they were done in an entire day and I had an entire day that I had to fill with other stuff that I hadn't planned on. And that was hard. And also I thought that they loved getting their picture taken and loved doing this kind of stuff because my other students (from the Co-Inquiry project) did but these kids did not want to make the TV commercials—they didn't want to do anything that I planned for them. They were completely just at odds with what I wanted them to do.

At the same time, the PTs did perceive the value in engaging in an inquiry-based project that involved a different notion of a literacy curriculum based on practices acquired through qualitative fieldwork:

> I do think it is important in projects, which is what I did like about the neighborhood study, to look at literacy in a lot of different ways other than reading one text—like interviewing people and knowing how to talk to people in interviews, researching articles, things like that . . . I had one student who really became good at asking questions. So once they got into the actual interview . . . any student could ask a question and she was very. . . like she was able to ask a lot of questions that I didn't prompt her with and we didn't have written down or anything like that and we did a practice run of it and she learned a lot from that.

The literacy the PTs learned from these projects points to the importance of collaborative online communication as central to the success of working collaboratively with middle school students on these multimodal projects. This was particularly true given the lack of face-to-face interaction between the PTs and their middle school students over the semester.

Instant Messaging Communication

Based upon our numerous previous experiences, we launched another project in 2005 in which the PTs and middle school students utilized instant messaging (IM) (American Online Messenger and Yahoo Messenger) to share perceptions and reflect on the use of multimodal tools middle school students used in their creation of characters for a fictitious town (Doering, Lewis, Veletsianos, & Nichols, 2006; Lewis, 2007). During a typical semester week, the PTs would spend one day face-to-face with the middle school students and another day where they conversed via IM.

Through the IM communication between the PTs and middle school students, the middle school students produced character sketches and town maps of a fictitious town.

Concomitantly, the PTs created multimodal projects that in some way communicated what they learned through the experience of working with the middle school students in face-to-face weekly meetings, IM, and intercession. The multimodal products represented their learning in a variety of ways. Some PTs created blogs with case studies of individual students and links to photos, movies, and concept maps; some created newspapers, iMovies, and QTVRs they incorporated into their websites; and one created a CD of music that represented his emotional tenor as he moved his way through the semester-long experience. Another PT highlighted IM clips to

demonstrate what he was able to learn about the middle school students through the IM conversation. The multimodal products were most often supplemented by the PTs' writing through which they discussed what they learned in relation to course readings as well as their experiences and observations at the middle school. These middle school students benefited from this experience as their fictitious towns were a resounding success as evaluated by their instructor.

We then continued to use IMing during the fall semester of 2006. PTs and middle school students used IMing specifically to discuss the literature they were reading within the middle school classroom. Again, concomitantly, the PTs developed teaching units that they implemented during semester intercession. As the PTs develop the teaching unit and discussed with the middle school students via IM, they utilized wikis, blogs, web sites, and movies to reflect on their learning experience.

The use of IM facilitated the PTs' uses of multimodal tools that included concept mapping, movies, Quicktime virtual reality (QTVR), and PowerPoint. The introduction of an everyday technology into the classroom was initially uncomfortable for the students. They felt it was "strange" that something they were using to converse daily with their friends was now required by their teacher to use in a formal environment. However, after weeks of integration using a range of multimodal tools, PTs noted a reduction in barriers, such as the willingness to use technology tools for academic purposes, which helped facilitate the development of the project.

Critical Analysis of and Production of Media Images and Video

Another important component of our program involves learning how to engage in critical analysis of media images and video. In their media studies methods course, PTs learn to critically analyze aesthetic and rhetorical aspects of image composition, video technique, and visual rhetoric, applying semiotic, Marxist, feminist, post-structuralist, postmodern, critical discourse analysis and postcolonial critical perspectives to analyze media representations. In this course, PTs study Beach's text (2007) that is linked to a resource site: Teachingmedialiteracy.com. PTs select film clips and describe what happens in the scene, the uses of camera shots/angle technique; use of close-ups, long shots, medium shots, high/low angles, wide-angle, panning, tracking, slow-motion, lighting, and music to portray the meaning, relationships, narrative development, and representations in a particular scene. They also describe the use of editing techniques offered in iMovie.

For one assignment, PTs created collages of images by searching Google

Images, Yahoo Images, or Flickr for media representations of a certain phenomena portrayed in the media: teachers, men, women, nature, "the city," the elderly, crime, adolescents, "vacations," schools, love, religion, sex, sports, etc. Then, in class, they tore out images from magazines and created collages on poster board displays related to these and other types of media representations. For another assignment, they selected a film or television genre and created a PowerPoint presentation that included images from films or programs reflecting prototypical roles, settings, language/discourses, storyline features, and value assumptions.

In this course, PTs conducted their own mini-media ethnography studies in which they examined how the meaning of media texts depended on audiences' construction of that meaning. Such analyses helped them further understand the visual rhetoric of media texts. For example, PTs studied their friends' or family members' responses to media texts such as fan websites, TV programs, video games, social-networking sites such as Flickr, etc. Others studied how peers engage in video-game play, and how the meaning of the images in a game is constructed through the social transaction between game players and the visual rhetoric operating in the game. Or, they studied how fans of online rock music group sites attend to the way in which images on these sites appeal to audiences who define themselves as members of a local music "scene" that values certain kinds of music or performances portrayed in these images (Bennett & Peterson, 2004). PTs then posted these and other media analyses on their personal blogs, and developed a class wikibook devoted to teaching media literacy (http://teachingmedialiteracy.pbwiki.com). Their use of blogs and wikis encouraged multimodal embedding of images and video clips that supported their analyses.

These blogs and the wikibook were also used to encourage collaborative writing mediated by digital writing tools (Beach, Anson, Breuch, & Swiss, 2008). In the class, PTs used blogs to share their analysis of images and video clips with their "blog partners." These blog partners then worked collaboratively to contribute teaching ideas and "chapters" on the wikibook related to different aspects of media literacy. PTs in future sections of the course as well as public audiences then added new information to this wikibook. Knowing that they are writing for several audiences and that others may use their material served to motivate their writing.

In this course, PTs also applied their critical analysis of media images to better understand how their own beliefs and identities are mediated by media representations. For example, two students in the course, Betsy and Lorraine, set off on a road trip with a video camera to examine representa-

tions of their home state, South Dakota, with which they had a strong attachment. They wanted to study questions about what it meant to be a South Dakotan, what beliefs are associated with this identity, and wondered if their audiences would have any interest in what they assumed to be a less than dramatic topic. In addition, they intended to examine what they perceived to be issues facing a rural state with a declining family-farm economy.

Betsy described how their exploration of the relationship between identities and place was mediated by their use of multimodal tools:

> As Lorraine and I gathered materials that represented public versions of South Dakota identities: images, maps, articles, interviews, questionnaires and our filmed road-trip across the state, we began to realize that our project was more about the process than about any kind of polished, final statement on who South Dakotans are. The truth was, others might not care about our particular identities, but the process of exploring these identities and even re-creating them through film was essential to understanding how we work within the figured worlds of regional identity.

In observing the tackiness of the tourist roadstop images and souvenirs in shops, they noted that "South Dakota tend[ed] to position itself through self-deprecation." This lead to the question, "Is this a reflection of how we create our own South Dakota identities?" At the same time, they considered the ways in which South Dakotans reject outsiders' positioning of them: "We saw that there tend[ed] to be little sense of personal agency in how South Dakotan identities are created and presented, but there is also little desire to pander to 'outsider' perspectives any more than is needed for the absolute minimum economic growth."

As part of their project, they explored stereotypical notions of their state, especially about how media represent South Dakota as the "wild west." They included clips from Hollywood films such as *Dances with Wolves* and the HBO television series, *Deadwood*, in their final DVD presentation, along with reflections on how these media stereotypes shaped others' perceptions of them as South Dakotans. Betsy and Lorraine shared their work with their colleagues to model the processes of multimodal production and the visual rhetoric practices involved in conveying their perceptions of place through these productions.

Summary

Our English education program integrates uses of interactive Web. 2.0 tools throughout the program to encourage multimodal uses of technology in the public school and university classrooms. Rather than perceiving technol-

ogy as an additional, but peripheral tack-on, PTs may perceive English as constituted by understanding and producing texts through interactive Web 2.0 tools. Rather then employ these tools for their own sake, they learn to embed the use of these tools within inquiry-based activities while active participants in their university courses, and as teachers in their middle school settings. And, through their own engagement in use of these tools in their classes, they then recognize the importance of using their tools to engage their own students.

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