27. Language Arts Online: Technological Literacy in the Secondary Language Arts Classroom

Michael Day

> Good oral and written communications are considered by ABET to be a necessary achievement of a college graduate. Technically trained individuals should not be considered educated regardless of the depth of their technical capability if they cannot communicate, both orally and in writing, their technical findings, thoughts, and philosophy to others around them…. Course work in English composition, including both written and oral presentation, literature, and especially technical writing, is appropriate for meeting the quantitative requirement. (Criteria for Accrediting Engineering Technology Programs, I.C.5.a)

Background: Technology and the Language Arts

With the advent of the personal computer in the 1970s, writers were among the first to realize the potential of the computer as something more than a glorified electronic calculator. Using early word processing programs, writers recognized that the computer, with its ability to outline, format, and display revisions immediately, would revolutionize the process of bringing thoughts into print form. By the 1980s, teachers of writing also began to recognize that the computer would become the standard writing tool of the future. And by 1993, many teachers were aware of the educational research of such scholars as Papert, whose *The Children's Machine: Rethinking School in the Age of the Computer* showed the potential for computers in the schools to change educational dynamics by empowering young students to take more control of their own learning. Teachers and scholars were already publishing articles and books that demonstrated that while computers do not necessarily improve writing, they help students write more, revise more, develop community, and publish their writing for real audiences more often. At this juncture, 1993, the Web jumped into the popular consciousness, and teachers of writing, many of whom had already found success in having students share writing with others over the pre-Web Internet, were quick to see the potential for students to share not just writing but also multimedia compositions including graphics and sound over the Web.

Sadly, although many colleges, universities, and resource-rich schools have been able to invest in hardware, software, and faculty development to help teachers learn how to integrate technology in their classes, the resource-poor schools in general have not been given reliable access to computer technologies. Foundations and corporations have given generously to schools, but without software, training, and funds for repair and replacement, the computers have just as often as not ended up as fancy doorstops.

Our Project

The PI of the NSF-funded project in Rockford recognized the importance of communication skills for middle and secondary students who might go on to become technicians, technologists, or scientists. The grant proposal included funding for the training of middle and high school language arts teachers and for its potential to provide evidence of learning through written and spoken communication. I was among a group of English professors asked to join an ongoing initiative establishing connections between university and community college faculty and school teachers. We were supposedly experts with much to offer the teachers, but in fact much of our job, especially in the first year, involved listening to their stories and gathering enough information to make what we offered them count.

Identifying and Prioritizing Needs

In January 2000, we attended the first meeting. Representing more than half a dozen disciplines, we were scattered about the room, one at each roundtable, prepped with handouts of questions about what makes strong and weak teaching and learning environments. We shared our answers with those at our tables and began to recognize that though we had many common values about teaching, the secondary school teachers had to confront at least two problems that we did not. First, they had to face daily disciplinary problems, and second, their access to computers was much more limited than ours, and the machines were often unusable because of broken hardware, the wrong software, and limited training for teachers. Thus we decided to focus the workshops on training.

During the first year, we met as a large group for articulation. Neither the professors nor the district teachers had a very concrete idea of what was meant by articulation or what could be gained from it. We spent a lot of time defining it and attempting to answer a series of questions to identify common concerns about teaching and learning language arts. We made little progress, at first, because the answers were so wide-ranging and diffuse, but soon we realized that just having these conversations and identifying common concerns was the point of the entire process.

Among other things, the professors learned a great deal about the day-to-day strictures that the district school teachers face. When they described their standards for each grade, we were surprised both at how detailed these standards were and at how much had to be covered in a single year. We were also disappointed to hear about how much time the teachers spent drilling the students to prepare them for standardized tests. In turn, the district teachers expressed some envy when they heard about our teaching loads and our relative freedom to teach language, literature, and composition.

The first articulation session modeled a communication approach by creating Web pages for the project's sessions and workshops. The articulation page can be found at www.engl.niu.edu/mday/web/artic.html. For all three articulation sessions over the past three years, we were able to secure a computer lab to display and explain the links. The professors had to learn about the 6-12 standards and course designs through discussions with the teachers and references to paper handouts, while the secondary teachers were able to learn about our courses and expectations through a combination of discussion and resources on the Web.

Educational Pathways to Careers Workshops

For the career workshop day, we prepared information about the required core competency composition sequence in the English Department, as well as information about minimum high school English requirements for admission. We decided that since so much career research now happens on the Web, we should have them do something on the Web to learn about careers for English majors. Then we gave them a very quick lesson on creating a website with Netscape Composer, and they made rudimentary but functional career sites for their students in a few minutes. This process went very well. Many of these teachers had not previously looked at the wide range of career resources on the Web, so they were making discoveries and excitedly reporting them to one another.

Reading and Writing across the Curriculum Workshop

This workshop is described in the CAC chapter (Chapter 15); therefore, I will discuss aspects related to working with resources that facilitate reading and writing. We showed the teachers how to use an online discussion tool, the bulletin board or webbed discussion board, to begin to understand how written online discussions on almost any subject can help students engage with one another and the subject matter. Those who study online discussion groups often use social construction theory to demonstrate how, when students are involved in written conversations, they are learning by collaboratively constructing a world of discourse that demonstrates and embodies their learning process. Many of the teachers successfully used WebBoard software to post messages and respond to each other.

The second half of the session focused on information literacy. Before the Internet and Web, the process of bringing a work to print had the effect of filtering out many unreliable sources (the review process) and making others extremely easy to identify (tabloids and poorly mimeographed documents). However, on the Web, anyone can be a publisher, which has led to a sticky problem of unreliable pages that can trap the unwary visitor. Teachers need to help students become critical users of the information they find. We viewed a site created for my college writing classes, "Evaluating Web Sources for Research" (www.engl.niu.edu/mday/web/wmc.html), with the intention that the teachers could replicate it with their classes. The teachers gained a better sense of how misleading Web pages can be, and that the URL itself, the design, or technical sounding language can fool many viewers into believing that the site is credible. Another key problem discussed was "appropriate and credible for whom, and for what purpose?" We used the example of "Your Gross and Cool Body" to show how pages, like this one, that are appropriate for younger audiences are not appropriate for high school or college research. Our comments turned into a list of criteria for credible research sources.

Technical Writing Workshop

The challenge for a full-day workshop was to find activities that would be interesting and relevant to the secondary teachers, while introducing them to elements of technical writing that might help them think of activities for their students. We planned a series of five modules.

The first module was to brainstorm answers to questions about what technical writing is and how it fits into the academic and work worlds. We split them into groups of three or four people that collaborated on answering the questions. They emailed their answers for posting on the workshop website. Once we had focused them on general technical writing categories, in the second module we asked them to try a simple exercise to get a sense of the difficulties of writing detailed instructions. We used a webbed exercise for an NIU technical writing course that asked them to write instructions for baiting a mousetrap or for snapping their fingers. The third module had the teachers brainstorm the most common technologies used in technical writing, which led them to exchange ideas about what kinds of software and machines their students might eventually need to use in the workplace. In the fourth module, we asked them to critique examples of technical documents on the Web.

To give a more practical application to the ideas and activities we had introduced in the last module, we asked the teachers individually to write a short description of a lesson plan using some aspect of technical writing. The most innovative and appropriate of the lessons plans were:

1. An art teacher asks students to describe artwork up for auction to potential bidders.
2. A mathematics teacher invites students to write instructions to other students for completing a problem.
3. An interdisciplinary team asks students to write detailed instructions on how to investigate a crime scene without destroying crucial evidence.
4. A science teacher asks students to write instructions for using a GPS unit to map the school.
5. Two business teachers have students write a car-buying guide of the sort one might find in *Consumer Reports.*
6. Several teachers want students to create brochures about fictitious countries, planets, or businesses.

Discipline Updates

During the first year of discipline updates (2002), we planned a series of workshops for three groups: level-one high school and middle school teachers, level-two middle school teachers, and level-two high school teachers. The middle and high school teachers in level one only had one discipline update together, while the level-two high school and middle school groups had two days each, in separate sessions for more in-depth work.

We tried to bring the teachers relatively new and important areas in language arts instruction. In earlier workshops, we incorporated writing across the curriculum and portfolio learning, but the technological areas were more popular with the teachers and perhaps more in keeping with the theme of the original NSF grant, so we modified the focus to include mostly computer and Internet-based activities.

We usually began with computer-based activities for invention; that is, for brainstorming and generating ideas. For level-one teachers, especially middle school teachers, we showed how to download free software, such as Rosemary West's Poetry Generator and Electric Mind. We showed how they might let the computer help them generate new ways of thinking through the process sometimes called synectics, ("bringing different things into unified connection"). We

then demonstrated how to download a free demonstration copy of the Inspiration software, a handy tool for making graphical organization charts that are helpful for moving from notes to more formal structures in planning their work. We also discussed research techniques, especially for the Web, since part of the problem with students using poor Web sources for research projects is that they are not able to use search engines and other search techniques effectively.

The teachers were impressed when we showed them how to make productive use of standard features of Microsoft Word, which has become the default word-processing program in many schools and workplaces. Since secondary school is often where students first use word-processing for school assignments, the teachers agreed with us that they should know more about built-in functions such as the grammar checker, track changes/compare documents, and comment. We also introduced the topic of multi-draft essays, which are common in both college writing classes and the workplace, and showed how students and teachers alike could use the compare documents feature to illustrate revision between successive drafts. Throughout these sessions, we were careful to frame the activities in two ways. First, we introduced each activity by explaining which part of the writing process it would support, and second, we had them actually perform the activity on their own computers.

To give the Rockford teachers ideas for how they might enrich and extend their own class discourse, we had each group log into WebBoard, set up an account, and experiment with the program by answering prompt questions and then responding to each other. After they tried out the program, we led them on a tour of some of my students' thesis workshops and peer-response postings on the course WebBoard. Once the teachers saw the level of engagement, collaborative idea generation, helpful response, and community building in the posts, many of them were enthusiastic about trying out WebBoard, or a similar discussion program, with their classes.

Professional development needs to be part of any workshop on using the Internet. Usually near the end of each discipline update, we included a session on Internet resources for language arts with links on the workshop Web page. This shows online help in a variety of forms, including idea repositories such as the ReadWriteThink project, a joint effort of the National Council of Teachers of English (NCTE) and the International Reading Association that archives hundreds of lessons available to language arts teachers. Online resources are not limited to static Web pages. We introduced participants to email discussion groups sponsored by NCTE, where they found teachers with similar interests.

We were initially worried that the eight-hour workshops looked imposingly long. Yet we soon realized that these teachers, though overworked and underpaid, craved the attention that we could give them in the workshops. The Rockford teachers, in their evaluations, indicated that they appreciated the individualized, hands-on approach.

Classroom Visits

During the first year, each of us was paired with a district teacher who had expressed interest in our special subfield or skills. The coordinators assumed that the university faculty would first visit the class of the participating teacher and then plan a module to teach in that class. Two teachers were interested in partnering with me, so I volunteered to work with both. I had seldom been inside a secondary classroom since graduating from high school in 1974. Of course I was startled, but I learned a great deal about the realities of instruction and student behavior.

When I arrived at the school on a March morning, there had just been a fight, so the police were hauling bleeding and screaming students into the office, where I waited for one of my teachers to meet me. As we walked to her classroom, she explained that she had two classes of sixth graders in her room that day to watch and respond to Spike Lee's *The Four Girls*, a documentary on the 1963 murder of four young black girls in the racist bombing of a church. She wanted the students to write about their feelings as they watched the film, so she wrote appropriate questions on the board and stopped the video at appropriate times to allow them to jot down their feelings or draw pictures. Since the subject of the film was so emotionally charged, the students were obviously affected. At the end of class, she gave them more time to write and draw and encouraged them. Most of them were writing, but even the ones who were talking were talking about the film. On the way out, she proudly showed me a bank of computers lining the walls of the hallway, and we made plans for a module to create Web pages for her class.

My next visit that morning found me sitting in an old-style chair with desk attached – the kind that still has an inkwell – near the back of the senior English class. The topic was Shaw's *Pygmalion*. The teacher was showing scenes from two movie versions, an older black and white version of *Pygmalion* and *My Fair Lady*. He discussed the endings and tried to get the students to talk about why they are different, but he had to keep hushing them to allow the few interested students to hear the film. The two nearest me were talking about their jobs, not watching or listening at all. As if the noise were not enough, other faculty and staff kept interrupting too: once to drop off a box of career handouts and once to give the teacher a notice that he later told me was his pink slip ? he had been fired while in the middle of teaching! Even with the interruptions, he was persistent and got the class to watch a scene from *Trading Places* that made a good connection to the story of the "person created for a bet" in *Pygmalion*. I admired his tenacity.

His next class was similar; the students would not be quiet and would not even sit down in their seats for quite a while. During the film, the girl in front of me slept. After the movie, he generated interesting discussion with some of the class members before they bolted out the door for lunch. But there was a surprise: one of his star students wanted to share a paper with me and get a college professor's response. His writing was pretty good, and he seemed genuinely interested in making it better. The teacher and I had discussed a Web page creation module, but we decided to work on an electronic exchange of writing between his students and tutors at a college writing center. This would eventually become the successful exchange between his students and my teacher certification students described below. We were both committed to finding ways to use appropriate technologies to help secondary students become more engaged, excited, and involved in their own educational experiences. Since computer networks can connect student writers to each other and to the outside world, we reasoned that the modules would need to involve the Internet or Web in some way.

Online College-High School Connection

Our project had originally involved an exchange between senior English students and tutors in the university's writing center, but then we realized that this would be an appropriate learning experience for the English 300C Advanced Composition for Teacher Certification class. We

thought that the university students would benefit from an assignment that would ask them to respond to writing from the sort of students they might eventually encounter in their teaching assignments. Crucial to this module, in the eyes of the project coordinators, was my attention to district standards, so I was careful to explain how the exchange would help students meet a standard requiring them to "apply acquired information, concepts, and ideas to communicate in a variety of formats." I was also mindful of a now generally accepted principle that computer networks allow students to contact and communicate with outside audiences whose very presence may change their commitment and attention to their writing because that writing is now truly public. This exchange offered the potential to influence the attitudes of students toward writing by giving them a readership other than their teacher.

However, the school district would not allow students, even seniors, to have email accounts that they could use at school. So, that first semester, the teacher collected copies of his students' essays on *Beowulf* and emailed them to me along with questions from the students about how to improve their essays. The university students, upon seeing the level of work from the senior English students, expressed shock because they had expected lengthier papers with more coherence and mechanical correctness. We coached the university students on how to respond with a few model comments and some suggestions for the kinds of phrases that might be the most encouraging to their high school counterparts. For the most part, they replied to their high school counterparts with candor, specific advice, and a great deal of encouragement.

Since I was giving my students credit for responding to the high school students, they copied their messages to me. I was impressed by the detail of their advice and the comradeship they displayed toward their counterparts. They faithfully answered the sometimes vague questions that the students sent along with their essays, always included encouraging words, and often ended their messages with a friendly closing such as "Your NIU buddy."

The second semester of the exchange, we managed to streamline the process by having the teacher send the drafts directly to my teacher certification students. My students then sent their comments to him, and he distributed them to his students. Of course, everything was also copied to me so that I could help them with problem cases and give my students credit for their work. This time, we were able to get the paper assignment to show my students beforehand, so they knew approximately what to expect and how to coach the students to meet expectations. Because we had learned from our mistakes, the entire process ran a bit more smoothly, with better results from all involved. Unfortunately, late in the semester the teacher failed about half of the papers because of plagiarism.

We would have continued this exchange in following semesters, but other commitments interfered; therefore, it became part of NIU's Teaching of Writing classes in the upcoming academic year. At this point, we discovered a much more efficient method of having students from both groups share their work and comments online. As mentioned above, the NIU English Department uses commercial software called WebBoard to give all English classes online discussion spaces. Luckily, even with Bess protective software filtering connections, students at the participating secondary school could access our WebBoards, so it was easy to create a new WebBoard solely for the exchange.

This plan required the NIU students to ask the teacher questions and him to provide a rubric for evaluating his students' work along with the assignment itself. Because the class was

for more advanced teacher certification students and focused on the teaching of writing (not just advanced writing itself), we expected that the responses to the students would be both helpful and detailed. However, for several reasons, including the fact that the students did not have time to evaluate such long drafts of research papers and the fact that the high school and college semester schedules did not mesh very well, the results were mixed.

The secondary school students appreciated the feedback, but the less accomplished writers had difficulty following the advice because they did not always understand the concepts and terminology used by my students. Still, many students did revise according to the comments sent to them, thus improving their papers. But most importantly, they received *attention* to their writing from helpers far removed from the immediate context of their educational setting.

We would like to expand these exchanges to other high schools and other teacher certification programs, and we have had at least a dozen inquiries from high school teachers who would like to have outside readers for their students' work. The problem is in finding certification faculty who can find time for such activities. We plan to regroup and explore this possibility with the director of the University Writing Center.

Who Learned What?

The past few years have filled me with memories of moments when learning was palpable: teachers were going to be able to *use* what they learned in our workshops and maybe even apply it in their own teaching. But even if they never use some of the software and hardware solutions we introduced them to, they are informed and more critical users of the various computer and Internet technologies for writing and communication. They will be able to help their students think about best practices for using computers, and they will reach out on the Internet to other teachers of language arts. In the end, changing attitudes about the possibilities of connecting with others through technology is the best we can expect from workshops like these.

The experience of working with the teachers has changed me in important ways. The workshops enabled my colleagues and me to put aside the assumptions about *who secondary school teachers were* and *what would concern them.* Instead, we could *listen* to their actual concerns and aspirations. The initiative provided for extended time and space for dialogue to take place among the teachers and professors, so that if we listened to each other well enough, we could develop activities that would be of value to our students and address difficult problems (often related to discipline and motivation among the secondary students) in a creative, collaborative manner.

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