1999

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Recommended Citation

Tucker, Nancy S. (1999) "Choosin' and Cruisin' the Info Superhighway: Using Technology to Teach Research Writing," *Language Arts Journal of Michigan*: Vol. 15: Iss. 1, Article 8.
Available at: <https://doi.org/10.9707/2168-149X.1399>

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Choosin' and Cruisin' the Info Superhighway: Using Technology to Teach Research Writing

Nancy S. Tucker

It was 9:15 a.m. on a Tuesday late in August, 1997, and I was about to hold the initial meeting with my first-year composition class at UM-Flint. I'd done this all before; it was pretty much a standard second-term, first-year composition class, the one in which they would write a research paper. The difference this time was that this class had a special title and a special charge. Patterned after a similar class in Ann Arbor but adapted for UM-Flint, it was called "Writing the Information SuperHighway."¹ Its charge was to explore what had become an important cultural phenomenon, the Internet and the World Wide Web, and to then write about the findings and use those resources for research. Our stated goal, as outlined in the syllabus, was to "learn about and explore the 'information superhighway' so that we may use it as an instrument for critical reading, writing, and research."

The computer-supported writing classroom (also known as the CWC) at UM-Flint is a fairly new environment, having been installed in 1995. It features 25 student stations—all equipped with Macintosh computers—organized in pods (five groups of workstations with five stations to a group) arranged in a horseshoe around the room and generally facing the center's oval work table. Beyond the oval table is the teacher station with an LCD panel, which enables the teacher's screen to be displayed to the whole class. The CWC boasts its own server which has the Daedalus Integrated Writing Environment® (DIWE) software², connections to Microsoft Word® through the campus network, and Internet (including World Wide Web) access. All students at UM-Flint have e-mail addresses.

In addition to this hardware and software, the CWC (through the English Department) employs techno-tutors—students with special computer expertise and some knowledge of and interest in writing—who support the work of students and teachers in the CWC. The somewhat non-traditional arrangement of furniture allows easy access to all computers and facilitates the idea of collaboration in a comfortable workspace. The class met twice a week in the CWC with its ready access to all this hardware, software, networks, and support. In addition, the classroom was open at other times when classes were not being held so that students could use the computers and take advantage of Internet access.

And So We Began

By 9:35, students had settled into chairs at the computers. After the handing out of syllabi and the basic confirmation that they were indeed in an English composition class, we had a few minutes of talk about goals, requirements, and expectations. Then we started community-building through some get-acquainted activities. Although class members provided interesting and funny comments about themselves, the context of the computer-supported writing classroom gave a different cast to their comments. Many of them insisted on talking about their interest in or lack of experience with computers. Several of them were nervous, but others were happy to be working in a computer-supported environment. By the end of the first day, everyone had turned on the hardware and was attempting, with my help and the help of classmates and techno-tutors, to learn to work with computers in a networked classroom.

¹ "Writing the Information SuperHighway" was originally conceived and developed at the University of Michigan, Ann Arbor by Wayne Butler and William Condon and also taught and modified by Rebecca Rickly. I adapted the class for our situation at UM-Flint.

² The Daedalus Integrated Writing Environment® is an integrated software package designed for writing classes. It includes software for invention and response prompts, an in-class electronic mail system, a basic word processing system, bibliographic citation software and Interchange®, a synchronous discussion forum, somewhat like a chat room.

Over the next few days, we explored—an extremely necessary activity for new users and even for those with some experience. It allowed them the opportunity to get their bearings, ask questions, and begin to contemplate the potential of the technology available. These explorations were structured, but also flexible as we tried to take advantage of the experience and understanding students brought with them to the class. They explored the hardware, looked at software, tried out e-mail and subscribed to our own on-line discussion list, went on the Internet, made World Wide Web connections, and began to look around. They tried out various search engines and compared them. They located our library (Frances Willson Thompson Library at UM-Flint) and found out what research tools were available through it. By means of this initial exploration, the students established themselves as a community of learners and situated themselves as technology users within that community. In short, they began the work that would eventually lead them to research.

Projects, Papers, Writing

In this course, I referred to student work as “projects/papers.” There were two reasons for this. First, the term “projects” seemed to be a more encompassing term for the units we tackled. It included both informal and formal writing as well as the work with technology and the conversations about topics, about writing, and about technology that permeated the course. Second, while most of the students chose to present their final work for a given unit as a paper, they could have chosen non-print methods of presentation—such as a multimedia or hypertext format or the developing of a website to show their work. I wanted to leave this option open by leaving the language about the work as open as possible.

Throughout this course, students wrote both formally and informally. They used the writing process of brainstorming, sharing of ideas, drafts, peer group response, revising, editing, polishing and final sharing to write four formal papers, which culminated each project unit. They also wrote informally every day in class. Through the DIWE, via e-mail both to me and to their classmates, we held on-line discussions of material we had read from a list I established to provide a forum. Some of those informal writings found their way into more formalized work. At the very least, the informal discussion gave students food for thought, and the computer environment made a large quantity of communication possible.

The four units we pursued covered the following topics:

- personal technology experiences
- a critical evaluation/comparison of websites, either as potential sources for their eventual research work or as sources for something else they were interested in exploring
- a response to/position statement on/exploration of one issue

related to technology, chosen from the numerous issues discussed in class

- a research project/paper, which took a critical stance and/or argued a position on an issue.

My goal was to make each of these projects and the papers or work that developed from them apply, as much as possible, to the research project/paper that was the culmination of the course. The course divided into two roughly equal parts: project/papers #1, #2, and #3 comprised the first 8-9 weeks of the course. During this time, students were also learning to negotiate the Internet and the WWW as they wrote papers and talked about issues. From week 9 to the end of the course, students concentrated on research and on the writing and sharing of findings. For the research project, I encouraged them to use issues related to computer technology; however, they had the option of either writing about a topic related to technology or simply using technology as a tool for doing research on a critical issue that I had approved.

Details of the Projects/Papers

Project/Paper #1. *Tales of Cyberspace.* The first paper, which took approximately two weeks, provided students with the opportunity to talk and write about their experience with technology. Over the preceding three years, I had noticed a definite change in the character of the first-year class. Unlike previous classes I had taught, many more of my students had prior technology experience. Some had computers at home; others had worked with computers in other classes. More of them had given at least some thought to using technology, which I saw as fertile ground for discussing the changes they found themselves facing as computer and electronic networking came to be more important.

For the first paper, students wrote about some experience they had had with computers and the lesson they had drawn from it. Before they turned in their polished final papers, I asked if anyone would volunteer to read part of his or her work. We had several people volunteer. They read interesting stories that, as I pointed out to them, actually began to raise issues about Cyberspace. The students who wrote about their difficulty in using technology pointed to issues of access and education. Those who wrote about their first use of computers and how far they had come since pointed to issues of learning and experience. By far the most riveting were the stories of three female students who talked about being harassed and even stalked as a result of their Internet connections. By the end of that class period, three things had happened: 1) students had taken a great step toward being a community, 2) they knew each other as resources for information about experiences, and 3) their own experiences and those of others were becoming a catalyst for research.

Project/Paper #2. *Comparison/Analysis/Evaluation of Websites.* The second project took about two

weeks and was a critical description/analysis/evaluation of websites that students either found personally useful or found useful for their research. I consider this a central idea in regard to research: to pay critical attention to the usefulness and credibility of one's sources, whether they be print texts or audio, video, or electronic sources. Students had already been on the Web testing a few search engines and "cruising." We initially discussed what makes a good website and brainstormed a list of what qualities make a source or a site useful. Discussion also included how to tell if a print source is useful or credible. It became clear that most of these students take the reliability of print sources for granted; however, they are not nearly as gullible about on-line sources. They know that, even if accurate, some types of Web material are more valuable than others. A list of things to look for in a website and several on-line sources of material about how to evaluate a website are in the appendix.

For the second project/paper, the students described and evaluated sites. They chose sites that were related to a research topic of interest to them, or they picked a site of some personal value to them. Their evaluations required them to explain that value and how the site fulfilled or did not fulfill its promise in regard to the value. The first time I taught the course, I asked students to evaluate only one site. The second time, I asked for a comparison of two sites on the same topic or two sites that had some kind of connection. The comparison was a more effective approach; students could much more easily see differences and value when there was more than one site. More of the students were able to make the switch from pure description of a site to description with evaluation when they had two sites to explore.

After they had completed their evaluations, each student showed the class one of the sites they had evaluated. This seemed like a pretty successful assignment. Students in turn came up to the teacher station and connected with their website while a scribe (usually me) wrote the address on the board so that other students could also connect. The student in charge spent about five minutes pointing out strengths and weaknesses of his chosen site. Through this project, students 1) gained experience in critically analyzing websites, 2) shared information with a group, with all the considerations of audience that experience brings, and 3) shared web addresses and evaluations among themselves, which was helpful to students working on similar projects or with similar interests. In addition, everyone had an extensive list of websites to explore. One side benefit was that students learned to critically evaluate, not just on-line sources but also print and articles, television resources, videos, and personal interviews. By insisting that they look carefully at the value of on-line sources, we established an approach that extended to off-line sources as well.

Project/Paper #3. Issues Paper. This assignment was more confusing and difficult because at this point, we began working in earnest from our reader. For three weeks, students read their assigned or self-chosen articles. Topics included censorship and civil rights; differences of gender, race, class, and age in computer and Internet use; and education and the Internet. Students responded to these articles, either on paper or on our discussion list, using DIWE, which operates somewhat like an academic chatroom where written responses can be saved for future reference, or in face-to-face format around the classroom discussion table. I encouraged people to think about what issues seemed the most interesting or pertinent to them and which they might like to continue to explore. At the close of this discussion period, each picked an issue or topic we had discussed or at least touched on in class and analyzed the positions around this issue. The reason I chose this approach rather than have them write a standard argumentative paper was twofold. First, I hoped this would give them a chance to think about the various positions a person might take on an issue, whether those positions came from partial knowledge, prejudice or bias, or might be positions an educated, thoughtful person might take. Second, I felt that a strong grounding in opposing evidence and positions would be useful as they began their research.

Some students could argue very cogently a particular position that they themselves held, but they had difficulty analyzing their own arguments, and found it particularly difficult to analyze an opposing argument. However, most did a credible job of this work, learning, I believe, much in the process of the struggle. One student worked on censorship as his project, using as the model for the analysis of positions a website he had previously evaluated. It pulled together sources pro and con and provided a balance this student found helpful in presenting the various positions and an analysis of them. We did not share information as a group at the end because we had done so much sharing in discussion over the course of the project.

Project/Paper #4. The Research Project. At this point in the term, most students had identified a topic or question they were interested in working with for the next several weeks. For most of them, it was a variation of the earlier topics. The project requirements included: 1) using a variety of sources—electronic, print, and others, 2) identifying an issue, then exploring it, taking a position, and supporting the position through research, 3) a research proposal and annotated bibliography, 4) a 2,000-3,000 word paper, including proper documentation and a Works Cited page in proper format. Alternately, a student could choose to present the work in hypertext (for example, website) format. In regard to sources, students were required to use a minimum of six sources and at least three different types of sources (for example, books,

articles, on-line articles, conversations or interviews with knowledgeable sources, videos, audiotapes, TV, and radio).

Students began by restating their research question/thesis and then writing a zero (discovery) draft that included everything they knew about the topic at that moment. Those who had already done this by means of earlier papers wrote down all the questions or areas they still needed to explore. They exchanged papers and responded to their peers' writing with helpful comments and suggestions. One class switched seats and responded on screen.

The research project took seven weeks. Once students had formally assigned themselves a topic or questions to pursue, they continued to explore on-line libraries, databases, and other sources of information. We accessed our own library from the CWC and did on-line searches of its resources. They turned in proposals, developed from their discovery drafts, and preliminary annotated bibliographies of print, non-print, and electronic sources. Certain days were set aside for peer group response, meaning some sort of draft was due. On in-class work days, students had four basic choices: 1) to work on the Web, 2) to access the library or a database, 3) to write, revise, or edit, 4) to consult with me, one or more of their classmates, or a techno-tutor. My role in this, beyond the structuring and setting of deadlines, was primarily consultative at this point. One of the ways I developed this role beyond waiting for students to ask questions was to share information about pertinent questions with the whole class, so when one student discovered something or asked a questions that seemed to be relevant to other people, I stopped everything and shared that idea with the group. Toward the end of the term, we set aside a day for talking about internal documentation and works cited.

The Last Day

On final exam day, in lieu of a test, the class met in the CWC to share one interesting piece of the work each had done. The topics included censorship on the internet, first amendment rights in cyberspace, stalking in cyberspace, net addiction, educational opportunities for elementary school age children, professional development for teachers who wanted to integrate technology into their classrooms, distance education, music and art on-line, music and art education on-line, and community in cyberspace. Several students took us on-line to show interesting sites they had located. Two did their papers in hypertext format, one of which was published on-line. Most simply talked about the work they had done and what they had learned.

Several things about this final meeting amazed me. First of all, the students were all fairly relaxed in their presentations. They knew their material and were comfortable talking about it. Second, when I asked for volunteers, the class spontaneously presented their respective topics thematically. When one

student finished, another would say, "My topic is related to that," or "I used the same topic but have a completely different viewpoint on it." They chose speaker order themselves and made those choices in the way a community of scholars (or friends) might do. Third, and related to the second point, is I knew that one of my first goals had been realized: the class had functioned as a community of writers and researchers. Many students had freely shared information and web addresses. Some sent references to each other outside class. Several students who had not known each other before this class had shared ideas and insights to the point that they even interviewed each other about their experiences. This came to light as they were talking about their projects: "Kim gave me this idea," or "I interviewed Melissa about this because she had so much personal knowledge about it." Finally, they were proud of what they had learned and the work they had done, both in relation to their chosen topics and to the technical knowledge and critical skills they had gained in regard to the Internet and the World Wide Web.

Final Thoughts

The students' final evaluations, final reflections, and the comments made by some as they walked out the door on the last day indicated that they had learned some important things, and that they had found the class different from their expectations, mostly in good ways. For the initially reluctant, a recurring theme was finding the work worthwhile, the Web exciting, and the computers not as intimidating as they had first thought they might be. For those with more computer experience, this was a chance to use what they knew about the Internet and the Web in a classroom setting.

Of course, there were difficulties. The downside included the usual technology glitches—servers going down; disks sticking in drives; files lost after being improperly saved; compatibility issues between classroom equipment and the students' home machines, and occasionally sluggish or non-existent Web access. Two students dropped the class, I suspect because they didn't want to cope with the technology. Also, some looseness in class structure contributed to a few instances of students reading e-mail or non-class related surfing when they were supposedly doing research.

The upside? Structuring the class this way kept students' interest, involved them more effectively in their own learning, and allowed the teacher to take a more consultative role. Using computers and the World Wide Web was a good reason to come to class. They learned to use technology, to read about current issues in our society related to technology, to do research both on-line and through traditional means, and to write. They developed a stronger sense of ownership in their work and the ability to structure it more effectively themselves. They developed an effective community of writers and thinkers, and a

critical community of technology users. I was impressed with the effort they exhibited as they worked, and with the quality I found in their papers, projects, and hypertexts. I judge this as a successful experiment. Not only did the students learn, I learned a lot. Would I do it again? Absolutely, in a heartbeat.

Note: Those who may want more help with terminology related to computers can turn to *A Glossary of Computer Terms You May Need to Know*. <<http://mason.gmu.edu/~epiphany/docs/fgglossary.html>>

APPENDIX

COMPARISON/ANALYSIS OF WEB SITES

At the beginning of your report, I would like you to list the URL address of each site and include a brief summary of the **content** of that site. In the report itself, here are the types of questions you should address:

Note: There is nothing magic about these questions. You may find that Grassian and Harris have other questions that work better for you, or that you can devise your own questions that more adequately address the issues. If so, use them.

1. What is the theme of the Website?
2. What are the various categories of information listed under that Web address?
3. What are the hypertext links on that Web? How do the various links relate to the main "page"?
4. What kinds of graphics are on that site? Describe them in detail. How do they relate to the topic? What, if anything, do the graphics add to hold your attention? Do the graphics provide useful information—in what way? Do the graphics support text information or do they stand alone? Who is the audience for these graphics?
5. Who is the audience for this website? Who might benefit the most from it?
6. Discuss the credibility/authority of the sites. While you may not be familiar with the institutions, organizations, or individuals connected with the sites, what clues do you have about the credibility of the sites and information? From what institutions or organizations do the sites originate? Are they the products of a recognized institution and/or individual with credibility in that particular field, or are they products of individuals whose authority you do not know? (This may include some analysis of the content of the site.)
7. Make some general observations about what you learned exploring these sites. On the day your papers are due, please be prepared to show one of your sites to the class and point out at least one significant feature of the site.

WEBSITES ON EVALUATING WEBSITES

Evaluating Websites: <http://www.library.cornell.edu/okuref/research/webaval.html>

Exploring and Critiquing Websites: <http://mason.gmu.edu/~montecin/web101.html>

Thinking Critically about Websites: <http://www.library.ucla.edu/libraries/college/instruct/critical.html>

About the author

Nancy Tucker spent three years at the University of Michigan-Flint where she helped organize and implement the initial establishment of the Marian E. Wright Computer Writing Classroom in 1995. She is currently teaching English at Michigan State University where she is working with pre-service teachers and graduate students and developing a website about computers in English teaching.