

15 Weaving Guilford's Web

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*There is no Final Word. There can be no final version, no last thought.
There is always a new view, a new idea, a new interpretation.*

—Theodor H. Nelson, inventor of the term *hypertext*

Introduction: Student Empowerment and Responsibility

About the time that the World Wide Web exploded out of its original niche in the scientific research community, the business community, the general academic community, and many individual users realized its power for the provision and acquisition of information. Like many institutions, Guilford College recognized the need to have a presence on the Web in order to provide information to its diverse audience: current and prospective students, their parents, alumni, donors, and other friends of the college. However, like many small colleges, the human resources that could be devoted to the development of a site were limited. How then could Guilford create a presence that would truly reflect the college, its students, staff, and faculty?

The answer lay in the collaborative, hands-on approach to learning and the tradition of student empowerment that is characteristic of the college, and here we perceived a rare opportunity. In January 1995, we proposed a course which would have as one of its goals the complete creation of the Guilford College Web site. The students would work with the administration, the faculty, and other students to develop the site, from top to bottom. Even given the unlikely nature of this class—an English professor and a chemistry professor collaborate to teach a course on communicating with computers and ask that the students in that class be given full responsibility for the image the college presents on the World Wide Web—the administration (president, provost, academic dean,

dean of admissions, head of computer services, etc.) accepted this idea not just willingly, but enthusiastically. So in August 1995, twenty-three students and one librarian came together in our course, "Communicating with Computers: Spinning the Web." In the ensuing four months, they would construct a site for Guilford College (<http://www.guilford.edu>) that surpassed what we thought was possible. And they would do a lot more in the process.

In the following chapter we first describe the history of this project. We then discuss the class itself and how the discussion of the broader, interdisciplinary issues of electronic media studies, especially as they encompass new technologies such as the World Wide Web, ended up being reflected in the site that the students produced. We also explore the implications of courses such as this that exploit the potential of the Internet for communication across the curriculum (CAC). Finally, we look to the future and how we intend to continue this project as we adapt to developing technologies. Throughout this process we were mindful of the dynamic influence of electronic media on the traditional classroom environment, and tended to agree with George Landow's claim that

Electronic text processing marks the next major shift in information technology after the development of the printed book. It promises (or threatens) to produce effects on our culture, particularly on our literature, education, criticism and scholarship, just as radical as those produced by Gutenberg's movable type. (1992, 19)

From Campus Community to Virtual Community

One of the many strengths of Guilford College in the real world has always been its sense of community. That community crosses many of the natural boundaries that often separate students, faculty, and administration, and is reflected in our tradition of students and faculty being deeply involved in all facets of the college's operation, from curricular policy to hiring a new president. Guilford has always sought not just to create such a community here, but to find practical applications on a larger scale for its values orientation and mode of teaching as well—thus its rich history of social involvement. As we began to examine how to take Guilford into the virtual world of the World Wide Web, we wanted that sense of community and student empowerment reflected in the Guilford College Web site. After all, as more and more students do research for prospective colleges online, a Web presence becomes one of the most ubiquitous and dynamic ways an educational institution can present itself. But the course and project that we describe here is not just about teaching HTML or surfing the Web for credit. Throughout, our goal was to help our students examine what it meant to be communicating and providing information in the face of rapidly changing rules: where the control of the time and means of access to information is shifting from the provider to the consumer. Certainly any course that

utilizes hands-on content production for the Web can explore this, but in this instance we perceived a chance to channel the interests of an entire community through the activities of a class. What we hoped to accomplish was to make this class become the dynamic interface between traditional liberal arts learning, interdisciplinary project-based education, and real-time inquiry into computer-supported communications (CSC) and how it is changing the world. We therefore had a unique opportunity: we would work with our students to construct the official presence of Guilford College on the World Wide Web. The result of a semester of hard work was a site that represents much of what makes Guilford a unique institution. But it was also a site that belonged to the entire community—not to the administration, not to the Information Technology and Services department, not just to a limited group of faculty.

The Course: A Shaping Influence

From the beginning, we were adamant that the students study what these new methods of CSC meant and not just the mechanics of doing it. To that end, we designed a rigorous semester reading list based on the theme of the role of visionaries and the problems inherent with the implementation of new technological ideas.¹

Our first task was to quickly provide the students with the context for the World Wide Web. Our readings in this area were three-pronged. First, articles from *Internet World* and *Wired* provided a history of the Internet and the World Wide Web. Second, Nicholas Negroponte's *Being Digital*, by exploring the implications of digitizing information, allowed the students to see a vision of where this medium might go.² We wanted the students to realize from the outset that our focus on making information accessible through the Web was merely an illustration of much deeper and more comprehensive issues involving digital forms of communication. As Negroponte points out,

Being digital will change the nature of media from a process of pushing bits at people to one of allowing people (or their computers) to pull at them. This is a radical change, because our entire concept of media is one of successive layers of filterings which reduce information and entertainment to a collection of "top stories" or "best sellers" to be thrown at different "audiences." (1995, 84)

Finally, we traced back through the history of hypertext and communication using the writings of Vannevar Bush ("As We May Think") and Ted Nelson ("As We Will Think"). The historical readings were important both to our students who were quite familiar with the Web, as they needed to see that the underlying ideas are ones that have been around for fifty years or more, and to our students who were just beginning to explore the medium and needed to see

that the Web represents a natural continuation of a line of inquiry into better ways of accessing and providing information. For example, we introduced our students to the notion that the footnote or endnote is an example of hypertext since it is a link which the reader follows to another part of the text to find information whose relevance may be high or merely tangential.³

We then turned to the question of why the World Wide Web was so effective and became so popular while previous attempts to improve the accessibility of information, such as gopher, were only adopted by the cognoscenti. One area to which we paid particular attention was the ease of use of the Web. The interface is, for the most part, highly obvious. Click on some blue text and you go to someplace new. Our readings in this area took us to the discipline of the psychology of industrial design, as explored by Donald Norman's *The Design of Everyday Things* (1990). Again, the Web becomes a single illustration of a much larger issue in this field: how do we achieve our stated goals? If we want people to be able to access our information, how can we design our site to make that access efficient and painless—even enjoyable? The lessons learned from Norman's work and from putting his concepts into practice will be used by our students repeatedly no matter what field they pursue. In fact, the epithet "bad design" became quite common during late-night work sessions. Negotiating this complex matrix of purposes and multiple audience needs became a rhetorical exercise that is one of the benefits of project-based education. Students are all-too-accustomed to satisfying the expectations of a teacher, but when you add to the mix the responsibility of fulfilling the needs of a bevy of administrators and peers and a true audience of global dimension, you raise the rhetorical stakes immensely. As WAC programs have known for years, having students "publish" for an external audience raises student investment and improves writing. The Web lowers the bar (financially and technologically) to publishing, and the electronic audience offered is both broader and often more impressive for students—communicating to the global village.

In an age where electronic media constantly bathe us in a wash of information, teachers often find that students have a much greater facility with media technology than educators do. However, these same students often lack the critical tools and training for analyzing such media and their pervasive influence. Still, many may question the pedagogical value of reading Marshall McLuhan today. By the time of McLuhan's death in 1980, the transformation of human life by media, especially television, was taken for granted, and McLuhan's often quirky and incoherent writings had lost their influence.

Now, however, the explosion of the Internet and World Wide Web, and of other innovative electronic media, have caused fresh cultural anxieties about the impact of computer-supported communications (CSC). We have again become conscious of our media environment, and in the confusion of the digital revolution McLuhan is once more relevant. We chose *Understanding Media*

(1995) for our reading list, and were excited about bringing his work into our course to help our students establish a critical base of operations. Ironically, our students are now realizing one of the more prescient McLuhanesque mantras of '60s students: indeed, "the whole world is watching."

Our next set of readings led us to the critics of using computers in this fashion. We read selections from Sven Birkerts's *The Gutenberg Elegies* (1994) and Neil Postman's *Technopoly* (1993) as examples of some of the concerns that were being raised. Both works deal with issues beyond the Web. Birkerts is concerned with the way in which the nature of reading might be changed by hypertext, books on CD-ROMs rather than on paper, and the trend toward nonlinearity in writing and reading (that is exemplified quite well by the Web).⁴ Postman's concerns are more with the seductiveness of the tools and how that can make us less critical consumers of the information being fed us or of the claims that the purveyors of technology make. As Postman, in his typical understated fashion, puts it, "Information has become a form of garbage, not only incapable of answering the most fundamental human questions but barely useful in providing coherent direction to the solution of even mundane problems" (1993, 69).

But we raised a more subtle concern with our students as well. If we accept that CSC is a valuable path to explore, can the dreams which these visionaries so easily and seductively promulgate be achieved? The history of Ted Nelson's ill-fated Xanadu project, a concept which is much more full-featured than the World Wide Web, indicates that it might not be so simple for several reasons.⁵ The technological difficulties are often exacerbated by the hubris that puts the beauty of the idea above any practical considerations. Interestingly, our students often went for simplicity in the construction of their Web pages to avoid exactly these problems and kept a constant concern for the viewing capabilities of their diverse audiences.⁶ This was a point in the course where the diverse backgrounds in our class paid off in heated discussion both in class and on the Vaxnotes conference. We encourage instructors from many different disciplines (sociology, history, engineering, etc.) to construct interdisciplinary courses that use the Web to explore these social/philosophical intersections, as we intend to do in future versions of this course.

These warnings about what might go wrong informed the discussion of the future of the technology that the remainder of our readings covered, from Brand's *The Media Lab* (1987), describing the history of current innovations by Negroponte's group at MIT, to Kelly's *Out of Control* (1994), examining how biological evolution can inform technological evolution, to Stephenson's novel *Snow Crash* (1993), portraying a future where innovation has progressed remarkably, yet things still aren't working the way they should. Throughout the discussion of these works, the students were able to apply the concepts developed in their study of the Web to their thinking about how the cyberworld might

eventually work. Again the diverse disciplinary backgrounds of the students also added to the discussion, as the management major often saw a particular issue very differently from the education major or the neo-Luddite English major.⁷

One primary strength of the course was in the combination of the reading and discussion with the hands-on element of producing information for the Web. The students were divided into eight groups and asked to produce two sets of Web pages for the college site. The first set of pages done by the students provided the core of the site. Several groups worked with assigned campus units (Admission, Center for Continuing Education, etc.), while other groups worked on pages describing the academic departments or on the underlying infrastructure of the site. On these projects especially, collaboration and a spirit of community were essential to success. It wasn't just that everyone's grade depended on the product (that is usually the case in group projects), but that the audience for the group's efforts was so vast it was almost impossible to shirk or ignore the enormous responsibility. In the second set of pages, the students were given more personal freedom to extend the site in a way that they felt also reflected the nature and spirit of the college.

Several of these pages are especially worthy of note. One student produced a virtual tour of the Guilford College Woods, a campus icon with historical roots in the Revolutionary War and the Underground Railroad. Using a digital camera, she took pictures of various sites of current and historical interest and wove them together into a self-guided Web pathway through the woods (<http://www.guilford.edu/woods/woodstemplate.html>). Other connections to the roots of the college are evident in the "Quakerism at Guilford" pages (<http://www.guilford.edu/Quakerlife/Quaker.html>) which explore how the Quaker heritage of Guilford continues to affect the academic and social life of the college.

Throughout the construction of the site, the college kept a strong interest in what was happening, but in a very supportive yet hands-off manner.⁸ It was the willingness of the administrators to work with our students and to turn over much of the construction of their pages—the way their department was presented to the outside world—to our students that was an important key to the success of the project. Examples of this collaboration are particularly evident in the pages for the Admission Office (<http://www.guilford.edu/admissionfolder/admission.html>) and the pages for the Center for Continuing Education (<http://www.guilford.edu/CCE/main.html>).

With the Admission project, for example, the administrative staff was very busy with developing new print materials for their office, the most important of which was a new viewbook. After meeting with the group assigned to the project, the staff were more than willing to allow our students free rein in designing their pages. In an independent act of creative decision making that neither we nor the Admission staff had previously noted, the team took a photo offered as

a promotional image (students walking across campus on a glorious spring day) and used Photoshop to airbrush out the prominent "NAVY" from one student's sweatshirt. With the Center for Continuing Education (CCE) project we had three traditional-aged students designing pages for an audience of older students who make up about one-fifth of our student body. This, of course, took careful research on our students' parts and fostered a new sense of understanding as they met with representatives of the CCE staff and student government.

But it was the pages for the Hege Library that perhaps best represented the type of collaboration and community we truly wanted to encourage. Betty Place, the head of Information and Reference Services at the library, participated in the course at the same level as any other student, doing all the readings and taking part in all the discussions. She joined a group with other students whose task was to build the library and art gallery pages. Betty's ability to deliver detailed information about the library in the context of building pages for the Web, while at the same time participating as an enthusiastic peer in the class, led to a set of library pages that are excellent in both design and content (<http://www.guilford.edu/LibraryArt/Hege.html>).

Another example of an "insider" helping to open awareness in others as they crossed disciplinary boundaries was the Academic Skills Center (ASC) project (<http://www.guilford.edu/ASC/AcademicSkillsCenter.html>). A senior in our class who had been a staff worker and tutor in the ASC for her entire four years led the team that designed the pages for the center. Several members of the team had little prior knowledge of the ASC and its operations, or of the growing presence of such writing centers on the Web. Since the class, and even after graduating, this student has gone on to train others in Web page construction and has extended the ASC pages.⁹

In all of this collaboration the only hitch with the administration involved "creative use" of the college's "tree" logo.¹⁰ Early in our design phase of the site, our students realized that they wanted a consistent visual element on almost all the pages that would say "This page is part of the Guilford College Web site." The element that they hit upon almost immediately was the tree that is part of the official logo, and several of them started doing interesting design work with that tree as a centerpiece (see Figure 15.1). Here is where the conflict appeared. A rigorous application of the Trustees' guidelines would not have permitted this liberal use of the logo. We took this issue to the administration and argued that adhering to such strict guidelines would not be in the spirit of this medium, where anything can be borrowed and modified and put back out on the Web in a new form. This conflict led to the formation of that most wonderful of institutions, the task force, in order to study how the logo policy should be changed in light of the new technology. Suffice it to say that our students were allowed to make their desired modifications provided that the official logo was present in sufficiently obvious places on the Web site. Trivial as this might

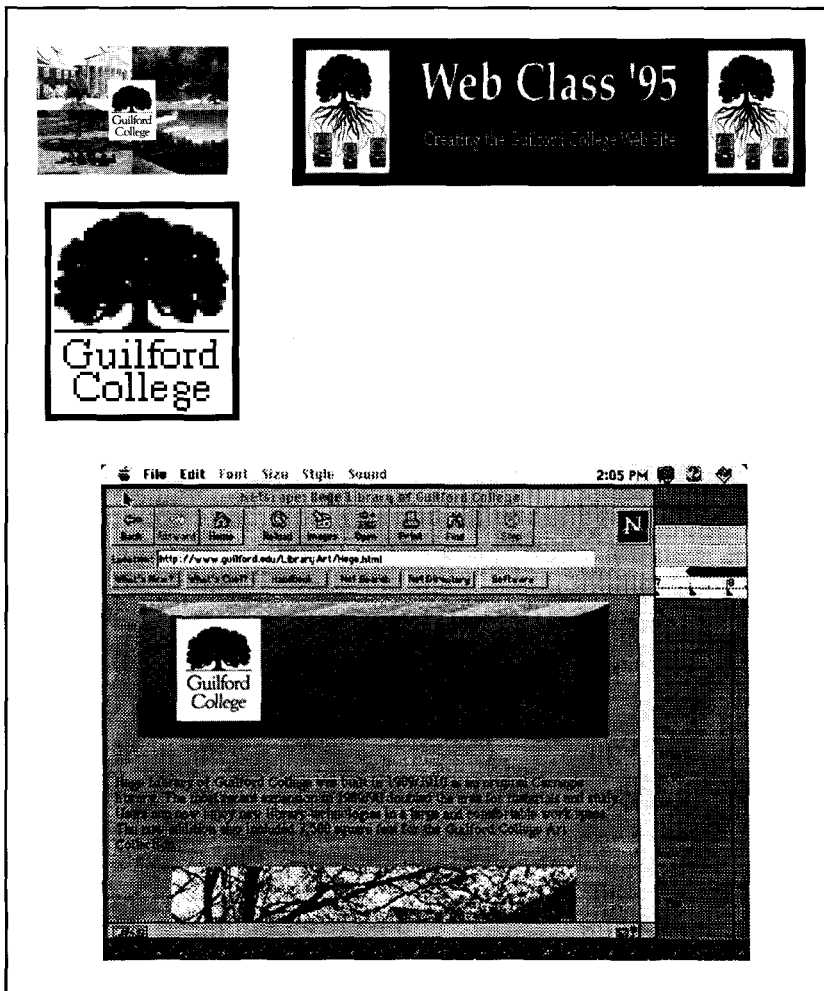


Figure 15.1. Images from the Guilford College Web site.

seem, the real-world lessons for our students were very important as they saw us spending time being called into meetings to discuss this issue. The contrast between the shiny new technology and the slow-moving bureaucracy was made very clear and informed our class discussions of ethics and regulation in a manner we could never have artificially created.

This was the most serious issue the administration raised, and we know we were fortunate in having an administration willing to hand over so much of the responsibility to the students. We realize some of this trust came about because

Rob had so much experience in constructing and maintaining a Web site, and the administration in Guilford's Information Technology and Services Department was willing to learn from us and with us as a community enterprise about how best to set up our site. As a result they were also willing not to micromanage the site and to let us and the students discover how to make it work best. Our students rose to the challenge of constructing this site completely and responsibly. We were recently asked by a reporter what we would have done if something had gone on the site that was "questionable," that we or the college were not sure should be there. And we honestly replied that we couldn't provide a definitive answer because the issue never really came up. Our students were presented with an opportunity to show the world their view of the college. There was little authority to rebel against because they had essentially all the power. The result is something that proponents of student empowerment can point to as an unqualified success. Our experience in the cyberworld mirrored our experience in the real world here: when trust is placed in our students, they respond in a fashion deserving of that trust. But we are well aware that we could not have placed that trust in our students had there not been a long tradition of trust and student empowerment at Guilford. For institutions where that does not exist, or where those who run the computers are unwilling to give up that control, doing this kind of project on the college-wide level may not work. However, that would not preclude work on a departmental or even divisional level.¹¹

Yet our class was not just about handing things over to the students. It was about continuing to strengthen the Guilford College community. The site is a product of students, faculty, and administration, and as such will never belong solely to any small group on campus. The expectation is that the entire community will continue to use the World Wide Web to portray the dynamic totality of Guilford College and as an educational tool for exploring the impact of CSC. Indeed, we were both surprised and pleased to be walking through the ASC computer lab one day the next semester and find one of our students (a chemistry major) demonstrating the pages she had independently built for the new interdisciplinary major in women's studies. Her audience consisted of assorted faculty and students from this program, most of whom had little experience with the Web.

This sense of community building belies many worries about how the virtual world can upstage the real world. In the college's perspective, one of the most important results of this project is that it has shown how, to use Howard Rheingold's term (1994), "the virtual community" can help reinforce communities that already exist. Guilford's strong sense of community engendered a mutual trust between the administration and the students that allowed this project to proceed: the students knew that the administration would trust them to portray Guilford in an interesting and positive fashion. In proceeding, the class members then found themselves reifying the community's basic academic prin-

ciple, most notably our commitment to innovative student-centered learning, engagement in the ethical dimension of knowledge, and emphasis on global perspective.

The Electronic Classroom: Theory into Practice

While much of the work for this course went on late at night in various computer labs around campus, our classroom atmosphere was truly an electronic one. Held in our telecommunications building, the class met sitting in a huge "U" shape around tables. The center focal point was not a podium, but a wall screen connected to a projector, connected to an AV Macintosh, connected to the Internet. The instructors sat to one side and entered the center of the "U" only periodically to drive the computer. More often a student was at the helm, navigating the Web or demonstrating a group's project for review.¹²

Of course there are many things we need and hope for if we are to continue this community educational venture. Most of these hopes involve institutional expense, and in times of shrinking budgets such costs are difficult, especially for the small liberal arts college. We need more portable data projectors so multiple classroom settings can become electronic classrooms. We need network connections for all faculty offices, classrooms, and student dorm rooms so the electronic classroom can extend beyond the restrictions of class schedules. We need a dedicated multimedia teaching lab and a staff proficient in multimedia for training both students and faculty. Indeed, though no one in our art department expressed interest in our class the first time, once they saw the results and heard from former art graduates about the potential for their students, faculty began to take notice. The latest version of the class now has three art majors. While we have no major on campus for this express purpose, we do have an interdisciplinary major, integrative studies, in which students, with the guidance of a faculty committee, can design their own course of study. We now have two sophomores in our present course constructing majors around computer-supported communications.

What we propose for the future of this project is to focus on the radical center of the monumental vortex of change which now characterizes the media and, by extension, human consciousness generally as the world prepares to enter the twenty-first century—a state which Walter Ong describes as a "new age of secondary orality" (1982, 135). In a nutshell, we seek to continue work which has already begun here, work which involves taking control of and humanizing the World Wide Web by bringing the Web squarely into the arena of humanistic studies. This activity includes both theory and practice. Theory in this context means outright study of the new technological phenomena in relevant educational contexts. It means coming to understand both issues and ethical applica-

tions and how traditionally based education can use and control the new technologies (how, for example, to make the resources which the Web offers serve the purposes of liberal arts education). Like a WAC program, we hope to extend electronic media literacy issues to other courses across many disciplinary lines, and we have already seen evidence of this from the number of classes in a variety of disciplines (chemistry, management, physics, English, and the college's interdisciplinary First-Year Seminar program) where constructing Web pages is being integrated into the course requirements. This would not yet be happening without the fully featured Web site created by our students.

Practice, on the other hand, takes a special student-driven form in our approach. Already, in the first version of our course, Guilford students were empowered to create the college's own Web site. They are now taking the final steps toward putting the campus newspaper online. In doing so, the students are learning both how to take charge of the new technology and how to shape its applications. Finally, the Guilford College World Wide Web site is now an online laboratory for our students. As we teach this course in the future, our students will recognize from the outset that the work they produce here can be placed in a medium that can be accessed from almost anywhere in the world.¹³ They are not producing material just for us, or for their classmates, or even for the local community. This sense that their projects had a scope outside of the one class gave our first group of students a tremendous drive to produce work that was of a particularly high quality. We expect these students to carry that drive not only into their other classes but into their future lives.

One of our favorite anecdotes from the class concerns the opening image on the college's homepage. Less than twenty-four hours before unveiling the new site for an audience of selected administrators and students, the class had yet to decide on an image for the opening page. In desperation we made a move of professorial authority and placed several possible images online so the class could view them and cast electronic votes on the Vaxnotes conference. We asserted that if the class couldn't come to consensus, we would step in and make a choice in time for the presentation. Two chemistry majors from our class happened to be working in chem lab on different projects for finals that day. Suddenly they both began obsessing about the front page, dropped their chemistry assignment, and began to collaborate on putting together a design. When they stepped back from the computer they knew they had it. They posted their image online and the class reaction was the same as ours—"That's it!"

We like to think of the Web site as an ongoing interdisciplinary laboratory with the biggest windows in the world. When anyone can look in and see what you've produced, your incentive to collaborate and do well is greatly increased. This is a heady sense of empowerment and ownership. The official Guilford College Web site is a wonderful illustration of how students can rise to that

challenge. The challenge for us, as educators, will be to adapt rapidly and dynamically to the influence of computer-supported communications and to remember, as Lanham reminds us, "The electronic classroom has a different motivational mix from the print classroom. And it has a different sense of 'finality' too" (1993, 127).

Notes

1. This course was, in fact, two courses with the same title. One group of students received two credits and met for the equivalent of two class sessions each week. Their reading list included the books by Negroponte and McLuhan as well as a number of articles, some of which are mentioned herein, and they worked in groups on two sets of pages for the Guilford College site.

The other students were part of the Guilford College Honors Program and received four credits for the course. They met for an additional class session each week, and their reading list was expanded to also include the books by Norman, Brand, Kelly, and Stephenson in addition to the other readings. Their assignments also included a paper at mid-semester discussing the impact of computer communication on some aspect of society (narrowly or broadly interpreted), and a final project that could take the form of a paper or a set of pages for the Web site or another hypertext project. They also worked with the other students on the construction of the site itself. One of the driving forces behind the reading list was to give our students the ability to use their skills more successfully because they have a more complete understanding of issues underlying these methods of communication and their potential social impacts.

2. It is significant that the words *World Wide Web* don't appear in the index to Negroponte's book, and he mentions Mosaic (from which Netscape evolved) only briefly, even though every issue that he discusses is somehow relevant to the Web.

3. We found this a very fruitful analogy, and one our students quickly adopted. Bush, Nelson, Lanham, and Landow all make this connection. For more in-depth discussion of the similarities between hypertext and the footnote/endnote of scholarly discourse, see Landow 4-5.

4. Again, Landow and Lanham provide elaboration here. See also Bolter. We have consciously tried not to be proselytizers for CSC. We always attempt to stimulate discussion about the adverse effects of such technology—past, present, and future. In the fall 1996 version of the course we added readings from Clifford Stoll's *Silicon Snake Oil*, and Mr. Stoll came to campus to address us and further such discussion.

5. For an excellent discussion of Nelson and the Xanadu project see Gary Wolf's very readable story from *Wired*, "The Curse of Xanadu." The story is also available online (minus photos) at the *Wired* archives at <http://www.hotwired.com/wired/3.06/features/xanadu.html>. See also Nelson's responses at <http://xanadu.net/ararat> and http://www.hotwired.com/wired/3.06/features/Xanadu/nelson_letter.html.

6. The "browser wars" continue. Our students often took their Web pages around campus to view on different machines using various browsers. We found this a controversial but useful issue, especially when discussing the battles between Netscape and Microsoft and the problems such battles create for developers.

7. The twenty-six students in the class ranged from first-semester sophomores to graduating seniors. They represented fourteen different academic majors. (See [http://www.guilford.edu/Who's who/Who'sWho.html](http://www.guilford.edu/Who's%20who/Who'sWho.html) for more information on this first class. Pages for the fall 1996 class are also now available on the site.)

8. Support came from the administration in two fashions. First, they provided us with the server hardware and software (the college server is a Macintosh Workgroup Server 8150 running the Webstar server software) as well as various software tools for constructing images and editing HTML. On a less concrete level, they provided us with access: to archives of photographs, to large chunks of information (such as the text of the college catalog in computer files), and to themselves. While during the course, the administration of the site was primarily left to us and our students, the site is now overseen by one of us (RMW), the Director of College Relations, and a representative from Information Technology and Services. However, these individuals represent departments that were strong supporters of this project from the very beginning and will continue to work with the students in a very positive fashion.

9. Karen Rowan graduated in May 1996 and decided to postpone graduate school for a year while going to work full time as assistant to the director of the ASC, Sue Keith. In that role she has continued to supervise the front desk staff and to tutor, but has also greatly extended the ASC pages and is presently constructing an ASC OWL (Online Writing Lab) for the Guilford site.

10. The Guilford College "tree" logo had been a subject of much debate among the administration and Board of Trustees because the logo had been used in a variety of nonstandard and non-approved ways. The "Guilford Tree" is a venerable icon which in the minds of many represented the college on many levels. As a result, a rigid (for Guilford) set of rules had been developed governing the appearance and use of the logo (including requirements about minimum size, colors used, using the logo in its entirety, etc.). However, these rules had been developed at a time when print was the primary use of the logo, in college brochures and on stationery, for example.

11. We don't want to sound too breathlessly upbeat here—there were of course many problems with this project. First, because such a course didn't exist before and wasn't on the books or on our teaching schedules for the upcoming semester, we both taught the first version of our course as a teaching overload. This was especially exhausting. Since until that point Guilford had no Web site, there was no Web manager and limited technical support. Our technical staff did their best to help when absolutely needed, but in essence this project was beyond their already stretched capacities. Getting our students twenty-four-hour access to capable computers and keeping the equipment running became an extra duty for us, often meaning much late night overtime. There is no multimedia resource person on our staff yet (though hopefully this is changing) so researching, buying, and learning the necessary software packages became our responsibility also. Of course, these are all problems encountered whenever a "new" kind of project is undertaken, and the latest version of this course is encountering fewer hurdles.

12. Two very important discourse community tools were e-mail and an electronic bulletin board/conferencing system called Vaxnotes. We used this program for class discussions, announcements, and as a place to post ideas and drafts. On a couple of occasions, when one instructor couldn't be in class, his responses to a set of paper drafts were placed on the conference and during the class discussion the comments were scrolled through as the drafts were discussed. Questions of clarification and elaboration were sent via e-mail which he answered in real time from home—the virtual professor.

Outside of class, the students were provided with a number of tools for accessing the Web and constructing their pages. Several public Macs at Guilford (of the LC III, Quadra

605, and LC575 vintage) were equipped with Netscape Navigator 1.1, and FolderBolt was used to make this program available only to students in our course. The primary tool for HTML editing was HTML Web Weaver 2.5 (although we switched to PageSpinner 1.2 and Netscape 2.02 in fall 1996). Students had access to image generating, manipulating, and processing programs such as Adobe Photoshop 3.0, Aldus Freehand 5.0, Fractal Painter 4.0, GIFConverter 2.3.7, JPEGView 3.3, and Transparency 1.0. The students were given direct access to the Guilford Web server via AppleShare and could therefore upload and edit their pages as necessary. Some students who were not as Mac-centric as the instructors found freeware and shareware software for Windows so that they could use their PC-compatible computers.

Our students were also provided access to a digital camera (Apple QuickTake 100) as well as a facility dedicated by the college to faculty use for multimedia production. This facility contained a Macintosh Quadra 660AV as well as a slide scanner and a print scanner and much of the software described above. Students could therefore use any images they wanted, whether they took them themselves or got them from the college archives, and put them on their Web pages.

13. Indeed, many students were surprised (as were many faculty and administrators) when we checked the hit list only a couple of weeks after the site went online and found we had already been accessed by curious surfers from many exotic locations, from Estonia to Thailand.

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