

## 18

### EXTREME PEDAGOGIES

#### *Teaching in Partnership, Teaching at a Distance*

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#### OVERVIEW

There's something to be said about the adrenalin rush found in extreme sports—bungee jumping off cliffs, parasailing from city buildings, solo canoeing down the Noatek River, twenty-six miles above the Arctic Circle. The desire to try something risky and survive, to push oneself and redefine one's identity, to go boldly forward seems to describe one part of human nature. Without the explorers and adventurers our maps would be blank, our sense of human potential would be limited, and we would have no epic sagas to tell around our campfires or tales to tell our grandchildren.

Too bad that the sense of adventure doesn't permeate the academic world. Here our maps are pretty much blank, our sense of human potential is limited, and being bold generally works against getting tenure. Nevertheless, this is the time for extreme pedagogies, and this is a call for them. Technical communication programs, classes, and teachers need to change, and the change being called for isn't modest. Taking risks where there is only a thin margin of safety isn't for every program, administrator, or faculty member, but it's essential for those programs and people who have glimpsed the future, see the opportunities, and can stand the adrenaline rush.

Most of us have a hard enough time keeping our classes up-to-date, our programs running smoothly, and our lives in order. The idea that we might need to make fundamental changes in our courses, transform our programs, and rethink ourselves isn't very appealing. We say things are going well enough, but the trouble is that things aren't going well enough for technical communication. We've been in a series of steady and unresolved debates over the last twenty years about what we are,

what we value, how practitioners and academics should work together, and what the real focus of our research should be. Meanwhile, the typology of the world—with its learners and its technology—shifts beneath our feet.

The analogy between extreme sports and extreme pedagogies isn't just something fanciful. As is true for our culture as a whole, business as usual in technical communication pedagogy and programs won't work much longer. The climbs and drops of the Dow and the Nasdaq independently and relative to each other show us the rough ride we're in for while the business and investment communities try to understand what is happening as commerce and new technologies intersect. Commerce and technology aren't the only two areas of society colliding. Technology and education—even our fundamental idea of what a university is—have collided as we move from the analog model to the digital one. Put simply, we need bold approaches because “American education is structured around a technology [books] 500 years old. We have reached the limits of that technology” (Ellsworth, Hedley, and Barbatta 1994, 59).

In the 1990s, we heard a call for transformation of higher education. From renowned neuroscientist Michael Gazzaniga (1998) we heard that “it is time to reorganize the whole university,” and, from our technical communication colleague Ann Hill Duin (2001), we are urged to participate in the technologically driven transformation of the learning marketplace. The voices calling for change in the academic world have been so loud there is now a counterchorus singing the refrain of “leave it all alone.” Yet, it's too late for that, and what was a call for change a few years ago has become a discussion of what those changes actually look like (Hanna 2000).

Certainly, much is working well in our field. We have more programs, textbooks, book series, journals, and students than in the past. About four hundred thousand students take technical writing classes each year, and technical communication has been added to the graduation standards for high school students in several states, including my state of Minnesota. The numbers of practicing technical communicators has increased steadily, and *U.S. News and World Report* (Avery et al. 1998) singled technical communication out as one of the twenty hottest jobs of the decade. Yet, the nature of education is undergoing well-documented transformations, and the world of knowledge making, information

storage, and digital technology is changing how we do our business. Much as we might like to leave things as they are, technical communication teachers, administrators, and researchers need to cope with and shape the changes underway. Few models exist for what's possible, and I'll propose one example of what might be done and point to a few additional possibilities. But the map is largely unfilled in, and what matters more than following anyone else's lead is addressing the issues boldly and without delay.

What I describe here is a model for technical communication programs of the future that began developing at the University of Minnesota in the 1990s, in partnership with three other institutions. And, although I use this program as one example, what I propose is not based on a single program at any institution. Rather, this is a call for extreme pedagogies that transform the local technical communication programs into multisite, multimodality, multiaudience, and multipurpose initiatives. And it's a discussion about what such extreme pedagogies engender—sites of resistance and sites of acceptance and support—as well as an analysis of where current models fall short.

#### **DIFFERENT LEARNERS AND DIFFERENT NEEDS**

Our first job as educators is to think about who students are. As technical communicators, we need to apply audience analysis to this question. Adult learners, seeking work-related education, make up the vast majority of people seeking knowledge and information these days. In a presentation on distance education and the internet that futurist Michael Dolan made at the University of Minnesota in 1999, he pointed out how significantly the learner had changed from what most of us in the academy were trained to consider. For one thing, degree and certificate programs are no longer the primary site of education for adults. In 1998, although more than 45 million people were engaged in work-related learning, only approximately 11 million learners were pursuing traditional educational goals: certificates, degrees, and credentials.

Most technical communication programs do not directly serve this population; the number of programs actively engaged in credit and non-credit continuing education is very small. Most of our programs are academic, and as a consequence, we have relinquished the education of the majority of technical communicators to others—the companies that employ communicators and educate in-house or independent contractors

who offer job training in the field. At my institution we offer a B.S., an M.S., an M.A., and a Ph.D. in scientific and technical communication. Aside from scattered events for alumni and occasional programs, no systematic or strategic plan exists for keeping our graduates current with continuing professional education.

This is a serious mistake for our programs and a loss for society as a whole. Certainly, we have prepared our graduates to keep up-to-date by informing them of resources such as professional organizations and publications. Moreover, many of our graduates are in research and development roles in their organizations and know more than we do as their teachers about issues of practice and innovation.

Nevertheless, we have a critical role to perform, and we have given the task to others. Not all of our graduates have ended up in the same industries, and one function we should be performing is providing systematic education on new trends and their social and design implications. Let me provide a concrete example. How do we expect our graduates who went through our print-focused programs over the years to think about and work on design issues for talking cars and the small screens? In 2001, Gartner Research predicted a 260 percent increase in unit sales of PDAs, from 8.39 units in 2000 to 33.7 million in 2004. Everyone from the Navy to students and doctors in medical schools use these (*Bloomberg News* 2001). The issue isn't simply one of how do we design for low resolution screens—160 x 160 pixel resolution—instead of the resolution of a standard computer monitor at 640 x 480, a reduction of resolution of 1,200 percent. Articles in *Technical Communication* (Kim and Albers 2002) and other journals can provide an overview of these issues and provide design guidelines.

What an article cannot do, however, is bring our practicing professionals up to speed on what these changes mean and how to think about them. How do human constraints on memory and attention, for instance, combine with technological limitations of communication media to present serious problems in how data are presented and interpreted in these new situations? At the University of Minnesota, for example, we are considering making radiological films available for PDAs and laptops wirelessly. Do the problems in resolution for handheld devices mean that interpreting these films online might result in users missing important data? If we screen a mammogram on a PDA, might we miss a tumor? Or as the number of “multitasking” cars increases—from 5.4 million

in 2002 to 28 million in 2005—how will we think about attention (and what detracts from it) as we design new message systems? Research from the Progressive Auto Insurance Company and the University of Iowa shows that using cell phones and listening to voice-activated email negatively affect braking time and our ability to stay in our lanes (McCafferty 2002). Physicians have a basic standard of at least doing “no harm,” but without systematic continuing education for our graduates—backed up by ongoing research in our academic departments—I don’t think we can make this claim.

The nature of the learner isn’t all that has changed; how the learner is getting access to education is changing as well. As Dolan pointed out, there were one million online learners in 1998. Each year there are more learners because more educational opportunities are available online. For example, at the University of Minnesota, the very popular Master Gardener Program has sprouted the Internet Master Gardener Program for an even wider audience.<sup>1</sup> But we don’t see a similar pattern in our technical communication programs. Because the average college education is out of date within five years, the great majority of practicing technical communicators will need continuing education, but we are thinking still about degrees and certificates that require their presence on our campuses.

I’m not suggesting that technical communication programs abandon the students who come to us to take classes, but that we meet the needs of both practitioners and students who do not intend to or cannot drop everything and come to campus; we must develop other solutions. Michael Markel (1999) put it succinctly: “Technical communication students are looking for the convenience and flexibility offered by distance instruction” (209).

Why are established programs so slow to use the Internet for distributing course content widely? Certainly, we’re not afraid of digital technology or putting materials on the Internet. A search of the Internet using Google in March 2000 turned up results of about 20,100 entries for “Technical Communication” in .75 seconds, and by June 2002, such a search turned up 103,000 hits in .16 seconds. Information proliferates and access increases, but what is revealing is that most of these sites are commercial, advertising books and workshops in a variety of delivery modes. Of the academic sites, most advertised traditional on-campus programs and conventional courses offered in traditional classrooms. They have some version of the statement provided by the Professional

Writing and Technical Communication Program at the University of Massachusetts Amherst: “Although the program features an extensive Web site with a great many online resources, we are classroom-based and do not offer courses online for distance learning.”

Only a few of these sites were for programs fully online or with substantial online components and a well-developed Internet presence. Most notable among those are Texas Tech University (<http://english.ttu.edu/tc/>), which offers a master’s degree in technical communication via the Internet, and the New Jersey Institute of Technology (<http://www.njit.edu/MSPTC/>), which offers an M.S. in professional and technical communication online. Many academic programs offer only a smattering of courses online or on ITV.

Technical communication programs use the Internet extensively for a range of purposes, but we are well behind the curve in terms offering our educational expertise in what Ann Hill Duin (2001) calls the emerging “learning marketplace.” Our progress in meeting the needs of learners by offering our expertise via the Internet is slow for a number of reasons—technological, administrative, and personal. At the University of Minnesota, for example, we have a certificate in Professional Communication, but for a student not on the Twin Cities campus to figure out how to complete this program requires persistence beyond what is required of on-campus students. The program description reveals the difficulties students enrolling have to face:

Courses are offered through a variety of methods, including on-campus classes scheduled days and evenings and selected courses available through interactive television, online, or correspondence. . . . Many of the on-campus classes are offered late afternoons or evenings so that they are convenient for adult learners (registration in daytime classes is also available). Courses carried on interactive television will be available simultaneously to students at the University of Minnesota-St. Paul campus and in classrooms at the University of Minnesota-Crookston, the University Center in Rochester, and at Southwest State in Marshall, MN. Online and correspondence courses have no classroom meetings and can be taken from any location. Online courses require Internet access and skills. (See [http://www.cce.umn.edu/certificates/cert\\_org\\_prof\\_comm.shtml](http://www.cce.umn.edu/certificates/cert_org_prof_comm.shtml).)

Obviously, this program isn’t a learner-centered or even a user-friendly model. Whether the failure to address student needs grows from organizational inertia or resistance, research suggests that before an organization

will change “there must be enormous external pressures” and there needs to be “a plan, model, or vision” (Hanna 2000, 29).

From the inside trying to change a university is “like trying to move a battleship at rest with one’s bare hands” (Weinstein 1993). Funding, as well as political, individual, and institutional issues, would be manageable if we had a collective commitment to a bold vision of meeting the needs of all learners in our field and employing the technologies necessary to serve them well. We remain too focused on traditional, place-bound courses and degrees to see how the new economy and academic partnerships are restructuring education.

In his essay, “How to Change the University,” Michael Gazzaniga (1998) speaks of how narrow our vision of education has become and the result of this provincial outlook:

Someone once said that Americans think the weather starts in California and ends in Maine. We all have such a limited view of our existence. Intellectual pursuits change, as does everything else. In today’s world, trying to maintain a personal garden is an endeavor that will die on the vine. (237)

Gazzaniga proposes transforming the University by removing the restrictive partitioning of ideas caused by disciplinary lines and reorganizing the institution in ways that reflect modern intellectual life. Extreme pedagogies help us shed the restrictive partitioning of our programs in individual institutions and our restrictive vision of who students are and where they should be learning. Individual programs, narrowly construed curricula, and the physical walls of the classroom are the personal gardens that we cannot sustain.

#### **PROPOSING THE PARTNERSHIPS**

Technical communication programs can no longer flourish in isolation. Extreme pedagogies call for technical communication programs to do three things simultaneously:

- Work in partnership with other institutions to craft technical communication programs from their shared resources
- Offer their curriculum in innovative combinations of degrees, certificates, and noncredit forms to meet learners’ needs
- Deliver their content in a variety of modalities

It’s not cost effective, wise, or ethical to duplicate technical communication programs in a region. Technological innovations that removed

the barriers of time and space for students have also removed them for institutions, although many of our colleges and universities haven't quite figured out what to do with that freedom yet. Within a region, it makes better financial sense to establish partnerships that allow community colleges, four-year institutions, and universities to cooperate on meeting learners' needs.

### **A Partnership Model**

The idea of a technical communication program forming partnerships is nothing new (Karis 1997). Many programs have industry partners and other partners within various departments in the university. What I'm proposing are partnerships among technical communication programs. This multiprogram model is one that we've tried at the University of Minnesota. The rhetoric department at Minnesota offers a certificate in Professional Communication; a B.S. and an M.S. in Scientific and Technical Communication; and an M.A. and a Ph.D. in Rhetoric and Scientific and Technical Communication. We have about sixty-five undergraduates in our program and a like number in our M.S., M.A, and Ph.D. programs together. For about ten years we have had 100 percent placement of students within six months of graduation. There are about ten jobs and internships for each student, although not always in exactly the area a student would like to pursue. We are supported by our college administrators and have adequate, although not extraordinary, resources.

Launching an extreme pedagogy like multiprogram partnerships isn't something one does without prodding. Ours came from the college office, which asked all its departments to undertake partnerships as a reaffirmation of the university's land-grant mission. College administrators identified state institutions for partnering and provided seed money to facilitate visits to campuses and planning. Consequently, our B.S. in technical communication is now offered in St. Paul and in partnership with three other institutions, with which we found a natural fit:

1. A joint degree with University of Minnesota at Crookston—a coordinate campus three hundred miles to the northwest
2. A degree program with Rochester Community and Technical College (RCTC)—seventy miles to the southeast—that has students taking two years' work at RCTC and the other two at Minnesota, via distance offerings
3. A joint degree program with Southwest State University, a university in a different state system, three hundred miles to the southwest



Forging partnerships at the University of Minnesota took years of good-faith negotiations, visits, and conversations. Creating a different memorandum of agreement for each site took substantial department, college, and university-wide efforts. And even though some of the problems are still being worked out—who has access and what kind to the libraries of the University of Minnesota system and who keeps what student records, for example—the results are far better than we could have imagined. Students are enrolling, internships are developing, and recruiting is underway throughout the state.

Minnesota's partnerships mean that students can remain at their home institutions and receive a University of Minnesota degree without ever setting foot on campus. They have access to local resources and the resources of their partners. All students take specialized core courses offered from the University of Minnesota and complete the degree with courses partners agree are equivalent across sites. These partnerships make the partners' resources available throughout the region, allow each partner to craft the degree for the needs of its students, raise enrollments everywhere, and increase social capital by uniting many people behind a single project.

What does this model suggest beyond Minnesota's limited experience? First of all, it suggests that traditional universities can use various or multiple strategies to extend their programs. Programs can duplicate themselves at other locations using "resident campus faculty who travel physically . . . or who teach electronically to one or more locations" (Hanna 2002). This approach allows for successful courses to be offered at multiple sites, combined with courses developed specifically at each site. Or if they wish, programs can develop a successful offering with a stable curriculum and set of requirements at one site and then recreate it in multiple locations, using different faculty to teach at each location. This approach allows for a uniform knowledge base, with identical courses offered across all locations. These approaches can work when a region has a single program with the resources to reach out.

### **A Common Pool of Shared Resources**

The next question is what do we do when there are several programs in a region, but no one of them can or wishes to step forward to extend its traditional program? Not all institutions have the same resources available to them, and the "advent of ubiquitous networking technology will lead

to the centralization of key functions in the education system,” as we are seeing in business (Schank 2000, 44; see also Duin, Baer, and Starke-Meyerring 2001). Pooling support structures and supplies is one place we can see a significant advantage for technical communication programs. Technical communication programs are expensive to staff because of software, hardware, and equipment needs. Pooling resources can allow us to purchase software, for example, less expensively under a site license that covers all. Unlike the other models discussed, which extend individual programs, this model is aggregative in nature.

In addition to supplies, partners can pool infrastructure expenses. For example, if one institution has an online writing center that provides asynchronous tutoring by trained tutors to all visitors, it is possible to join with partnership institutions to share resources. Technology allows us to create a seamless and customized interface and what Schank (2000) called a “centralized pool of tutors” who could serve all users and not “dilute the brand” of any institution, as seems to be a fear of potentially competing institutions (45).

### **Nurturing the Partnerships**

Partnerships need nurturing because our inclination is to look at each other competitively. The central site in the partnership can take the initiative for bringing partners together regularly by fax, ITV, and email, as well as for face-to-face visits. At St. Paul, we have a program staff person with the primary responsibility for coordinating the partnerships at our end. Faculty, staff, students, and program administration all need to be nurtured. Faculty, for example, at the University of Minnesota partnerships meet together twice a year to go over curriculum, troubleshoot, and discuss technology needs. Students need to meet with teachers from the different sites and with administrators so they have the opportunity to say what works and what doesn't. At one such meeting with students, for example, faculty received generous praise for their availability. Students liked how the teachers “got right back to them” using fax, phone, and email. They felt part of the class. Investment in regular meetings allows staff to coordinate offerings, calendars, book orders and to build the personal relationships that carry these joint endeavors over the rough spots.

Tangible and less tangible rewards can be had from partnerships. For one thing, each partnership offers something different. For example, at

the University of Minnesota, support from one of our partners resulted in shared funding to support a faculty member with a joint appointment at our institution. At another time, support from our program enabled our partner to lobby for an additional faculty member to help with the partnerships and increased student interests. In partnership settings, students gain by finding job opportunities and internships in places where they might not otherwise find them. For example, students at a partner institution identified internship possibilities at a large frozen-food company and at corn-processing plants that students at another campus would never have discovered. There are increased opportunities for grants and coauthored papers. And lastly—but not to be minimized—is the opportunity to make new friends and find new colleagues. When a faculty member at one of our partnership institutions developed cancer, the concern at the other sites was genuine, as was the joy we shared when another colleague had a baby and emailed all the partners her good news. Professionally as well, the opportunity to write letters of support for tenure and promotion as well as to find partners for conferences are important returns on investment for faculty.

#### INNOVATING IN CURRICULUM DESIGN

Even with innovative partnerships, the focus of education at Minnesota and elsewhere in the country is on the traditional courses and degrees. This is a serious limitation of this model we've designed and one we hope others will address. Our extreme pedagogy isn't extreme enough to meet the needs of all the learners we must serve. To serve learners, technical communication programs and teachers must rethink curriculum from the ground floor and must integrate revising the curriculum in the context of the technologies we can use to enhance and deliver it. John Chambers of Cisco Systems gives us a sense of the change we face in our programs: "The next big killer application of the Internet is going to be education. Education over the Internet is going to be so it is going to make email usage look like a rounding error in terms of the Internet capacity it will consume" (Duin, Baer, and Starke-Meyerring 2001, 1).

To make the curricular changes needed and to thrive in the technological environment in which we find ourselves, we must value flexibility far more than we do. We have to discard the notion that education must be packaged into fifty-minute classes offered three times a week. We must rethink the units of curriculum, how they're delivered, and to whom.

### Different “Classes”/Different “Programs”

For the last ten years, many voices in technical communication (Selber 1997; Hawisher and Selfe 1999) have been telling us that “technological and curricular change” are not independent (Werner and Kaufer 1997, 313) and that we must rework our curricula. Unfortunately, most of our response to these calls has been the production of scholarly essays discussing change rather than engaging in actual programmatic change. Tiffin and Rjasingham suggest that we ask, “What kind of system is needed to prepare people for life in an information society?” (1995,1) and not assume that what we’re currently doing will work tomorrow. To get us to think more broadly about the sites where education will take place in the future, they no longer use the word “classroom” and urge us to focus on what they call “virtual learning spaces” (10). And, importantly, they emphasize the home as a site where new technologies enable learning to take place.

A major component of extreme pedagogies is creating those virtual learning spaces in our technical communication programs. We cannot stop with putting the traditional curricula online. Yet, if the majority of people are adult learners needing education for the workplace, then we should examine the knowledge assets held by each of our programs and think about ways to combine and distribute those assets to reach more people. For example, when we approve a new “course” in our curriculum, we should expect it to serve in multiple roles:

1. As a traditional course to meet the needs of residential students
2. As an online, streaming video or ITV course to meet the needs of nonresidential and partnership students seeking degrees and certificates
3. As a series of knowledge pieces that can be repurposed into credit and noncredit modules and made available to a wide range of learners in a variety of media—from face-to-face to CD-ROM to the Internet.

Fortunately, the development of Learning Content Management Systems (LCMS)—not Learning Management Systems, which manage learners and track their progress rather than manage learning content—is making this last vision a reality. LCMSs based on a learning object model allow us to combine and reconfigure learning materials to meet individual learners’ needs. An LCMS, as Brandon Hall describes it (<[www.brandon-hall.com](http://www.brandon-hall.com)>), allows educators to create, store, reuse, manage, and deliver learning content from a single object repository.

LCMSs are developing quickly, allowing for authoring, content assembly, object repositories (that can be coordinated with libraries), delivery engines, and multiple output formats.

In this emerging environment of reusable learning content, faculty's intellectual property must be protected while we carry out our goal of reaching the broadest possible set of learners. This protection can be done in two ways. First, some new LCMSs include intellectual property tracking software that notes each time a "learning object" representing an individual faculty member's proprietary material is used, gives credit, and, if contractually determined, calculates the amount due to the information's creator. Secondly, we can explicitly include faculty rewards in our discussion of revising curriculum. Many faculty consult to supplement their income and to keep themselves aware of trends in the workplace. By broadening our notion of "curriculum" to include non-credit, continuing education materials, we offer the chance for faculty to "consult" within our programs and to profit from their intellectual efforts.

This process of modularizing a class and repurposing the knowledge pieces for various audiences and technologies is something my colleague Paul Brady and I have done with some of our courses; and it has resulted in a tremendous alteration in the way we teach and think about "course content." One technical communication course with which we have done this is Message Design II: Theory and Practice. This course was created originally for delivery face-to-face for fifteen weeks at the rate of two class meetings each week. Before putting it online, I performed an information audit of its content.

When I rethought my class into its knowledge components, here is some of what I found:

1. Forty-five units of specific information—such as interactivity, linear and nonlinear information structures, designing complex messages, participatory design
2. One hundred twenty readings along with reading guides—such as book chapters, material on the Internet, essays, clippings, newspaper articles
3. Fourteen assignments—such as educational materials, a public service announcement, a report on media effects, a provocative question
4. Forty-five class activities—such as class critiques, brainstorming sessions, games, simulations
5. Thirty discussion questions for the online chat

6. Two hundred ten commentaries on class assignments, one comment per assignment per student
7. Ninety related Web sites to visit—such as the Yale Style Guide for multimedia and Bobby, a site for improving accessibility of Web pages to people with disabilities

Once I imagined my class in components other than the fifty-minute session, I had a very different idea of how those components might be recombined to meet the needs of different students. Paul Brady, our college coordinator of Instructional Computing, designed and built for me an e-library with a Web interface—complete with stacks and private holdings—in which to store the knowledge pieces that made up my class. From this collection of basic information, I am able to pull specific learning materials for different users: an online class with practicing professionals, the residential class with degree seekers, and noncredit workshops for practitioners in the workplace.

I did this rethinking of my course as a personal response to essays I've been reading on the need to repurpose intellectual materials. Realistically, however, most faculty need more tangible rewards to go to this trouble. Faculty need a reward for reworking their materials for an online or ITV environment, and if they are willing to share some of their materials with other colleagues at their home institution as well as with partners, they need a return on their investment. When a faculty member's efforts result in tuition revenue from students truly new to the system, then providing a piece of the action, as well as rewarding innovation in the department, is appropriate. Without this plan, faculty will take their expertise and ideas to the for-profit institutions in their digital neighborhood and reap the rewards where they can.

### **Different Programs**

One place where the Minnesota model has failed is that we have no plans to develop courses together from pooled intellectual assets, despite our partnership in offering a degree together. Programs that look at their overall course content as flexible information assets can decide to separate and recombine those assets to reach more learners. If departments think not about whole courses, but about the information components of all the courses in the curriculum, we are free to combine information from a number of courses to put together—with relative ease—whole new components.

For example, many courses in the technical communication programs at the University of Minnesota have a small unit on usability testing. Combining all those components and adding the reading guides, resources, and assignments associated with those components could produce useful results. First, students could draw on a variety of materials to understand usability testing. Students unfamiliar with the concept could draw on beginning materials, and students who had experience could tap the advanced materials, regardless of which class they found themselves in. Secondly, the complete holdings could be combined to create (with the help of a faculty facilitator, whose efforts would be recognized financially or otherwise) noncredit units for people in the workplace who want to become familiar with this testing. If several programs pooled their information assets, whole new “courses” could emerge.

### **Different Classrooms**

Genuinely rethinking curriculum forces us to reconsider the sites at which learning takes place. I’ll leave the ergonomic issues to someone else, as well as the discussion about connectivity, media source switching, and the available equipment (electronic whiteboards, laser discs, wireless standards, document scanners, VCRs, monitors, and computers) for the new “connected classroom” (see, for example, Coppola and Thomas 2000). What’s more useful is to think beyond even the wired or wireless classroom to the virtual learning sites mentioned earlier.

A large enough body of theory and practice exists for us to work successfully in these e-spaces—from Lynnette Porter’s (1997) and McCormack and Jones’s (1998) practical guidebooks on creating e-classrooms and Web education to studies helping us understand how to meet distance learners’ needs of social and academic integration (Eastman 1998). Today’s body of scholarly literature can help us build successful online learning spaces. And there is enough now on how to keep our focus on pedagogy in general and on technical communication pedagogy in particular rather than spending all our energies on thinking solely about the technology (Knox 1997; Jorn, Duin, and Wahlstrom 1996). Indeed, for years our technical communication colleagues have been writing about our need to blow out the walls of the technical communication classroom (Allen and Wickliff 1997) by establishing a variety of collaborative projects that bring students close by and at a distance together in a common learning space. We’ve just not carried their suggestions to their necessary conclusions.

## PROPOSING A MIXED MODALITY

Just as partnership make good sense economically and educationally, so does offering courses in mixed modalities. Not everyone learns best from having an instructor lecture. Learners bring with them a variety of learning preferences—from aural to tactile. If learning styles make a difference in the ability of learners to master material, then we can better meet learner needs by offering our materials variously formatted.

Internet-based education is ideal for this. Increasingly, at the University of Minnesota we are building audio, video, interactivity, and opportunities for interacting with others into all our courses. We started out doing this for the benefit of our online students but quickly discovered that the materials designed for them worked just as well for traditional, in-class students. These days we are using enhanced online syllabi for our residential classes so that we can link students on campus to the body of resources originally created just for the distance students. In fewer than five years we went from no classes and no students accessing Web CT for course-related materials online to more than forty-one thousand students systemwide doing so in one semester of 2002.

The question is how to convince teachers who have used only the chalk and talk method to think in new terms. Many faculty seem to share Sven Birkerts's (1994, 199–201) perspective, lamenting the passing of the primacy of the book:

Everything has changed in the past quarter century, with the changes hitting their real momentum in the past decade or so. . . . But even these shifts [in the publishing business] . . . are as nothing to the real transformation, which is that of the cultural context. There is no denying that a terrible prestige-drop has afflicted books themselves. They have moved from center to margin; the terms of their mattering are nothing like they used to be. You do not have to be a writer, a publisher, or a critic to see this. Anyone who pays attention knows that writing and reading are not what it's about these days.

Many faculty—who have successful careers largely because texts alone work best for them as a learning option—share Birkerts's distrust of moving beyond the book to teach:

The gathered concentration of [reading] is no longer our central cultural paradigm. . . . Reading is taught, of course, and books are assigned in school, but any teacher you ask will tell you that it is getting harder and harder to sell the solitary one-on-one to students. The practice itself is changing. Already it



is clear that the new reading will be technology-enhanced. CD-ROM packages are on the way . . . to gloss and illustrate, but also to break the perceived tedium of concentration by offering Interactivity options, and the seductions of collage-creation. Don't just crack your brain on Hamlet, but pull up pictures of famous actors and directors and read some sidebar interviews, even view clips of scenes in performance.

To dismiss the opportunity to teach literacy in media beyond print seems a terrible arrogance on our part, and to privilege one technology when using others can provide more people with access to knowledge seems reactionary. Technical communication pedagogy isn't the academic equivalent of the History Channel. Fundamentally, extreme pedagogies are about meeting the needs of the learner rather than the teacher.

### **Finding the Right Mix**

Extreme pedagogies don't mean that everything within a technical communication program must change. Programs must revise their mix of offerings and technologies for delivering them, however. The mix in each program will depend on its partners, its mission, and its faculty. At Minnesota, for example, finding the right mix resulted in our agreement that we would not offer a Ph.D. online. Faculty decided that too many resources and social interactions were missing online, and they felt that the seminar experience is essential for the students we wished to turn out. Other programs will need to make their assessments.

### **The Cyborg Teacher**

A critical component of extreme pedagogies is the teacher. The Internet creates a "twenty-four/seven" learning environment in terms of the availability of content to the student. Those numbers don't describe the availability of the teacher to the student, obviously, but it is foolhardy to think that new ways of organizing and delivering content don't seriously change the role of the teacher. Technical communication instructors old enough to remember teaching before email can already see how learning spaces are changed by technology. Technologies that "allow users to share everything that can be sent over the Web" and that are "highly collaborative" are certain to affect teachers more extensively (Wahlstrom 1997, 142). Adapting to this environment will call for technical communication teachers to develop their Cyborg selves to be comfortable and successful in this new environment. It's critical to remember

that online education is education foremost, and issues of teaching skill remain central. As Arbaugh (2001) points out, many challenges faced online are the same as those faced in the classroom. Extreme pedagogies cannot succeed unless we provide teachers with support in learning how to “exploit the communicative and adaptive capabilities of the new technologies” in the building of communities of learners (Laurillard 2002).

### **Training the New Technical Communication Teacher**

In 1999, Linda Clemens, then an M.A. student at the University of Minnesota, was concerned about the teacher training future Ph.D.’s were receiving in technical communication programs. She wondered how well these new professors would be prepared to function in distance delivery classes and how skillful they would be in making use of new technologies in all of their work. She argued that “technical communication Ph.D. students must come to understand the attributes of each type of technology to support their effort to select technology appropriate to the learners and to the purpose of the course, and to support their efforts to merge instructional design, teaching strategies, and technology” (119).

To see how well our future teachers were being prepared, Clemens examined what technical communication scholars were writing about these new pedagogies and what teacher training was being offered in the Ph.D. programs in our field. Her results weren’t heartening. In the first place, she found that “we have no distance education theory specific to technical communication” (123). Moreover, aside from a single course at one of the Ph.D.-granting programs, there is no specific training for future Ph.D.’s in technical communication that focuses on distance delivery and the uses of new technologies in the classroom. Training the “next generation of the professorate” to teach well in the digital classroom is a subject of discussion at many universities, but it has not received the attention it needs in our discipline.

## **SITES OF RESISTANCE/SITES OF SUPPORT**

### **Resistance**

Despite the most compelling arguments from our field and from the academy in general, there is still much resistance in technical communication and elsewhere to the pedagogical changes we must make. Not every

program is ready to bungee jump—no matter what the potential for personal growth. A call for extreme pedagogies is being met with resistance—not from everyone, but from many places. Resistance is natural and even helpful, but it cannot be allowed to prevail.

### **Resistance of Faculty**

Finding technical communication faculty a site of resistance is understandable. Technical communication has often been marginalized in the academy. Our colleagues in English sometimes minimize those of us who study workplace writing instead of the well-crafted novel or current literary theory. Technical communication teachers have generally turned to critical studies and postmodern theory to build their credibility in the academy and have written frequently and angrily about the pressures put on them from industry to teach functional literacy and skills (Wahlstrom 1997). In many ways new pedagogies, because they involve working with new technologies, seem at first to be a capitulation to tools rather than a focus on ideas.

Secondly, working with different technologies than those with which you were trained and upon which you based your academic career is bound to cause conflicts and resentments. The problems of teaching with ITV and the Internet are well known and there is much discussion of faculty feeling technology as a constraint rather than as a tool to enrich what goes on in the classroom (Johnson-Eilola 1997). We cannot minimize these issues, but we can take a proactive approach, such as that described by Racine and Dilworth in this volume. Teaching with technology and using the Internet for education are here to stay, although change will occur both rapidly and extensively.

The challenge in working with faculty resistance is to involve faculty in the discussion of the technology and to work to prepare them to use it well, to be successful. Equally important is the need for discussion about the new pedagogies we must develop and how we will “preserve our pedagogical convictions,” as Racine and Dilworth (this volume) put it. Yet, fundamentally, we must acknowledge that we cannot continue with business as usual. Stuart Moulthrop (1999) put the issue succinctly: “Turning toward the past does not excuse one from the present” (419).

### **Rewards**

I’ve described some of the rewards we have set up for faculty willing to practice extreme pedagogy at the University of Minnesota, but we need

to think beyond established faculty to new faculty as well. The answer isn't to protect new faculty from participating in our efforts to reshape our discipline. Rather, it is to reassure new faculty that this investment will pay off with merit increases, teaching awards, tenure, and publications, and to see that it does. Classroom research has been an important area of scholarly work in our field. These new pedagogies expand the technical communication classroom, and much needs to be written about how we tame this wild space. As Linda Clemens (1999) pointed out, we need to develop the body of theory dealing specifically with technical communication and distance delivery, and this is a genuine opportunity for new faculty to publish work badly needed.

### **Resistance of Students**

Students also resist new technologies and new pedagogies that include partnerships. There is student resistance both locally and at our partnership sites, for example. At home there is just the hint of jealousy and a competition for attention. Local students say that if we didn't have ITV courses, for example, they would have us all to themselves and wouldn't have to deal with students they don't know. Additionally, students may have concerns about access. If their schools don't have universal email, for example, they may wonder how they can reach the teacher when they need help.

Student resistance must be addressed and overcome if all learners are going to feel valued and content. Much of this resistance disappears when students are given a chance to discuss the reasons partnerships were established and the limitations and advantages of various technologies. Helping technical communication students grow past their resistance is relatively easy. For one thing, we expect them to be able to communicate effectively using the materials at hand (to paraphrase Aristotle), and today's materials include interactive television. We can tell students honestly that the opportunity to explore ITV, for example, will give them an advantage in the job market. They can learn about how to make presentations on ITV that will provide them invaluable experience for the corporate world where more and more interactions among people at distance sites are mediated.

Secondly, technical communication students need to know how to work in groups, and these days collaboration is often mediated. Making the classroom a learning site where students learn the content and also

learn to communicate effectively using the medium at hand is a useful approach. If we don't address their frustrations, then students at a distance secretly turn off their mikes so they can talk to each other and not to the teacher. But students can be engaged, as Dilworth and Racine discuss in this volume, by being part of a conscious process in the classroom of claiming the medium.

### **Resistance of the Academy—The David Noble Factor**

Change would be a lot easier if we were able to point to a collective will for change among technical communication faculty and administrators. Without the presence of positive models, people resistant will turn to dissenting voices.

In the face of technological change and despite the need to reach all learners, the David Nobles of the world see it as their task to defend the “sacred space” of classroom and the old ways of doing things even when there is no attempt to abolish all traditional means of education. As Young (2000) pointed out in the *Chronicle of Higher Education*, “David F. Noble says distance education is fool's gold, and he's eager to point out who the fools are” (A47).

Noble is a strong critic of technology, who “refuses email, . . . often writes drafts of his books by hand” and “certainly doesn't have World Wide Web pages for his courses.” In 1997, he wrote *Digital Diploma Mills*, which began his attacks on distance education. His critiques deal with how higher education is selling itself by commodifying information and establishing what he calls unholy alliances with commercial interests. The result he says leads to a disenfranchisement of faculty. He argues that the commitment to technology and its infrastructure is “a technological tapeworm in the guts of higher education” (Young 2000, A48). His criticisms—who owns what and who is served by decisions about technology—need to be taken seriously, but they shouldn't stop us in our tracks.

Locating and distributing alternative perspectives is helpful in keeping the marketplace of ideas from becoming a monopoly. Ben Shneiderman, director of the human-computer interaction laboratory at the University of Maryland at College Park, helps put Noble—and the perspectives he represents—into context: “His fear-filled rhetoric and whipping of the boogie-monster of entrepreneurial corruption of education is misleading, shallow and even counterproductive” (Young 2000,

A48). Because resistant colleagues are given to forwarding Noble quotes via email to faculty involved in distance and new technology initiatives, it's useful to know Noble's arguments. The answer to this resistance is, in part, dialogue between the resistor and the adopters. And in part it's keeping up-to-date on the research on quality and effectiveness of distance education offerings and programs. For every David Noble, there is an Ann Hill Duin (Duin, Baer, and Starke-Meyerring 2001) and a Donald Hanna (2000), who articulate reasons for optimism and change.

### **Acceptance and Support**

Not surprisingly, students and faculty are sites of both resistance and support. For students at a distance, the chance to interact with peers at other universities is fun, especially if they are not put in a position where their first encounters are intimidating or designed to compare student populations.

Feedback from students in a variety of e-classrooms at the University of Minnesota indicates that their experiences are not unlike those of teachers and students elsewhere. For example, the students in an e-classroom at Pace University found the ITV environment a "no-doze classroom" when run by committed teachers. As the Pace students put it, they found the room "'professional' and they felt as they must come to class prepared and ready to work" (Coppola and Thomas 2000, 34). In my role as vice provost for Information Technology at the University of Minnesota, I get at least one email a week from students who take the time to let me know how an online class enabled them to continue their programs while taking a semester abroad or when they were at home in bed with a tricky pregnancy or when knee surgery made coming to campus impossible.

Feedback from partners is also encouraging. Many faculty at other institutions feel, as we do, that pooling our resources means we can all do a better job serving the needs of students. Their support is apparent in their calls and email and in the fact that the personal as well as professional are covered in our discussions. Partnership faculty are committed to the project model and the community building we tell students these technologies enable. Faculty who have participated in the distance programs have, generally, been enthusiastic. When faculty have not found the process rewarding, it has often been because of technological difficulties or differences in the cultures of the partnership places.

One problem is getting faculty who are unhappy to let someone know about the problems; too many suffer in silence to avoid appearing inadequate before their peers. In general, we've found that when we find out about problems we are able to fix them. There is a general sense that people involved in these programs want them to succeed. Despite that, untenured faculty may feel that they are jeopardizing their future if they raise concerns or have difficulties. Developing ways for faculty to raise concerns in a protected environment is a significant component of a successful program.

Another problem that we hesitate to discuss involves the faculty who bring their bad habits to the electronic environment and find them magnified and then blame the technology and undermine department efforts. What do we do with the faculty member who doesn't update material, doesn't answer email, doesn't allow for any interaction in a course? The answer, in part, is that we uphold the standards of good teaching and require that everyone be evaluated on a common set of standards—availability, promptness of response, ability to inspire, amount of useful information provided—not materially affected by technology at all.

## WHAT OF THE PRESENT AND WHAT OF THE FUTURE?

### **The Commodification of Information**

The question is what future do we want and are we determined enough to go get it? We have to consider David Noble's reservations about the commodification of information and the risks of establishing partnerships that place technology before pedagogy. The issue of the commodification of information he points to is a problem for technical communication programs because this commodification limits access. Basically, we're in the literacy business, and our job is to make sure that the university—in whatever format it appears—is a place where unbiased and robust discourse can take place.

### **Meeting the Needs of More Learners**

If we don't provide the education needed in technical communication to those asking for it, then for-profit companies will step right in. For-profit companies are taking over a lot of education, particularly in our field. Online Learning is a good example of the for-profit organizations

providing courses and programs to students. It offers a program in technical communication through its business and management offerings:

OnlineLearning.net, a Sylvan Learning company, has accepted more than 20,000 enrollments in 1,700 online courses since 1996. Accredited, graduate-level extension courses are offered in teacher education and business and management. In recognition of its superior service and quality content, the National Education Association selected OnlineLearning.net as its partner in online education for teachers.

Given the changing nature of technical communication practices, it seems foolish if we give over the continuing education of practitioners or the education of degree seekers to others when we, in fact, are the sources of new knowledge in the field, and we are public institutions, invested in the public good.

#### CONCLUSION

We simply cannot continue to do business as usual. Soon there will be no business worth doing if we keep to the established paths. Where are the innovators and risk takers in our profession and in our discipline? There is no map to show us where to go; we will need to explore, to venture down rivers that undoubtedly contain rapids. On this adventure, I, for one, need to recall frequently what the dean of my college told me when we were discussing curriculum and the future: "Whatever you do, make sure that it's bold."