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BREAKING VIEWING HABITS

Using a Self-conscious, Participatory Approach in the ITV Classroom

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As universities and colleges expand their reaches beyond their own walls and form partnerships with one another to bring greater variety and flexibility of courses to students within and between states, distance (or distributed) education gains prevalence. Distance education, by definition, relies on technological solutions to bring course content to students. The highly successful partnership between the University of Central Florida and Brevard Community College offers students courses taught in a variety of media, such as the World Wide Web, videotape, radio broadcasts, and interactive television. The Twin Cities campus of the University of Minnesota employs various technologies to deliver courses to and receive them from its partners—Southwest State University and the University Center Rochester—as well as its own distributed campuses in Duluth, Crookston, and Morris. In fact, a quick Internet search with the keywords "distance education" reveals the broadening scope of technology use in nontraditional learning spaces: Michigan, South Dakota, Kentucky, Idaho, and many other states and communities boast their ability to deliver classes to students at a distance.

Moreover, distributed teams in the corporate arena increasingly adopt emerging technologies to capitalize on the skills and knowledge of employees at remote locations while decreasing the need for those employees to travel—a concern of especial importance in the wake of recent terrorist attacks in New York and Washington, D.C.

As technical communicators, we appreciate the value of addressing the practical aspects of using technology in our teaching, but we also recognize the necessity of addressing the underlying social and political

dynamics as well. If we do not address such concerns, we risk that students and faculty will approach "technology more as individual consumers than as collective producers" (Pew Higher Education Roundtable 1994, 3A). Focusing exclusively on the practical aspects of using a technology reinforces the primacy of the medium, rather than the educational and social needs of teachers and students. In fact, it encourages teachers and students to see the technology as inevitable, inescapable, and inflexible. As Johnson-Eilola (1997) notes, when we separate social concerns from technology, "users are discouraged from recognizing and understanding (let alone participating in) the ways technologies construct our lives" (98).

In this chapter, we propose a self-conscious, participatory approach to using technology that will allow teachers of technical communication to examine the power of a medium in collaboration with their students. In our discussion here, we focus on the technology of interactive television (ITV), a medium common in the technical communication classroom, distance education, and university-community college partnership programs, as well as corporate teleconferencing. Together, we can negotiate ITV as a cultural and historical artifact, whose realizations can be shaped according to the needs of the participants rather than the demands of the technology. Through a critical exploration, students and teachers can assume an agency denied to them through passive reception to the technology and can re-create the medium as they experience it.

Our approach includes the following three goals:

1. To understand ITV technology through collaborative discussion
2. To identify and examine underlying assumptions that define and limit our approaches to ITV
3. To explore and reinvent norms and conventions of ITV use in order to shape our own realizations of the technology

We recognize that using ITV is itself a form of technical communication, and we should therefore approach the medium not as a transaction but as an experience grounded in rhetorical sensitivity. Our approach will help students and teachers develop heightened media appreciation and, more importantly, it will encourage an informed, agency-assumed practice that can be applied beyond ITV to manage other tools still emerging in the workplace. Our intent is that even though we focus on

ITV, our discussion can help participants use other technologies more effectively as well.

THE TENSIONS OF SUBSTANTIVE AND INSTRUMENTAL VIEWS OF ITV TECHNOLOGY

As emerging technologies are increasingly employed in both academic and professional spheres, students need access to and education with them (Karis 1997; Shirk 1997; Tebeaux 1989; Zuboff 1988). To be successful, students, and we as instructors, need communicative and rhetorical skills, in addition to instrumental proficiency. ITV technology, as familiar and intuitive as it may first appear, is no exception to this rule.

We acknowledge the tension teachers often feel when the promise of a given technology turns into an encumbrance that counters our pedagogical convictions. As one of our instructors notes, "The technology is a barrier you're trying to mitigate, rather than a tool that will help you teach; the conditions of the ITV environment are simply not conducive to teaching." When the operational conditions of the technology and the values of our teaching clash, it precipitates a variety of responses from teachers: resignation to what we see as the constraints of the technology (Johnson-Eilola 1997); outright rejection of the technology (Gilchrist 1997); or adaptation of the technology to the teaching practices we value (Bruce and Rubin 1993). We must recognize, as Anson (1999) does, that the "key to sustaining our pedagogical advances in the teaching of writing, even as we are pulled by the magnetic forces of innovation, will be to take control of these technologies, using them in effective ways" (273). Our approach is intended to give teachers and students such control.

Unfortunately, the practical use of ITV often leads to discussions about technology as a constraint that limits our pedagogical approaches: microphones and cameras impede interaction, technology interferes with the creation and maintenance of collaborative groups, while sound delay disrupts interpersonal communication. What we find disconcerting about these discussions is that they are characteristic of what Johnson-Eilola (1997), drawing from the work of Andrew Feenberg, describes as *substantive* views of technology:

> In the substantive view, we have little choice about how to deploy specific technologies in specific instances: Once we have adopted technologies, they

> determine their own uses. . . . Like a highly communicable disease, technology remakes all it touches (and it touches all); the only alternative is to retreat. (102)

In other words, we see technology as part of a social and educational network in which we have little or no power, where the characteristics of the technology constrain our interactions and interfere with our teaching and learning. Yet, the instrumental view of technology provides even less of an alternative: in the instrumental view, "technology [is] a neutral tool for doing a person's bidding" (Johnson-Eilola 1997, 102). This view discounts the ways we shape—or can be shaped by—the technology itself and implies that all we need for success is better training, more refined skills, higher levels of competence.

A common outcome of both substantive and instrumental views is a disturbing lack of agency on the part of both students and instructors. Students and teachers feel trapped by the technology, unable to engage in natural learning and interaction. This feeling of powerlessness, however, is not inevitable. If we begin to recognize the ways in which we respond to the medium and shape ourselves to its features and capabilities, rather than vice versa, we can begin to shape technology to our needs and create the medium as we use it.

The approach we advocate is one that encourages instructors and students to identify and reflect upon influences shaping our uses of technology. It forces us out of passive, substantive ways of thinking about and dealing with the technology into active, agency-driven roles that will help us shape the way we and students use technology in the classroom. As Wahlstrom (1997) notes, "Without a sense of agency, [students and, we add, instructors] become technological determinists, failing to identify opportunities when they could initiate change" (131). Bruce and Rubin (1993) concur, adding that social, cultural, and economic realities "manifest themselves in details of classroom organization, availability of resources, mandated curricula, teacher preparation, . . . and so on. These factors shape the possibilities for change in the classroom" and should, we argue, be an important part of classroom discussion and activity (Bruce and Rubin 1993, 5). In the next section, we discuss our approach more fully by demonstrating how our three goals are met and include activities and assignments that can be adapted to multiple ITV configurations as well as to other media.

SELF-CONSCIOUS, PARTICIPATORY APPROACH IN ACTION

We want to be clear that we deny neither the necessity nor the value of instrumental competency. In fact, we begin our approach by advocating that teachers and students learn how the technology operates, including its configuration and the physical limitations of its use. We see our approach as one that, ultimately, is practical, in the fullest, most rhetorical sense of the word. Miller (1989) suggests that we understand "practical rhetoric as a matter of *conduct* rather than of production, as a matter of arguing in a prudent way toward the good of the community." Such a view of practical, or practice-oriented, rhetoric as conduct will allow technical communication teachers to "promote both competence and critical awareness of the implications of competence" (23). Competence thus becomes one layer of a complex context. Understanding the complexities of that context through self-conscious deliberation and active participation—in the medium as well as in the classroom activities—encourages students not only to obtain and maintain skills but also to understand what having those skills means for them as members of our profession.

Understand ITV Technology through Collaborative Discussion

Before we can exploit any medium, we need to understand how it works. We find that at the heart of students' concerns about interacting in the new class environment is fear of the unknown. Never has a student new to ITV entered the room and moved boldly to the front row without pausing and seeking reassurance. Faced with rows of monitors, microphones, and a glass-walled technicians' booth, most students back, wide-eyed, out of the room and recheck the room number before returning to slink cautiously into a back row seat. The first step in our approach to teaching ITV, then, is to remove this fear by exploring the technology we see. We have found that many difficulties in using ITV can be avoided if all participants begin with a clear understanding of what ITV is and how it functions, as well as its capabilities and possible drawbacks. For example, in ITV classrooms, people who can't be heard often ask that the microphones be "turned up," as if they work as amplifiers. In truth, sound levels do not involve volume control, and adjustments are best made by moving the position of the microphone relative to the speaker. To create an effective orientation—both to the technology and its potential for use—we suggest teachers incorporate the following activities: group

discovery to focus on the characteristics of the medium; demonstration of how the technology functions; and the modeling of our experiences of self-discovery to demonstrate an effective model for exploring technology.

Students need to understand right away that the space they are in is not a traditional classroom and that the medium is not commercial television. To this end, we advocate using an activity that focuses on the characteristics of the medium, developed by one of our instructors who teaches oral communication via ITV. At the beginning of the first class meeting, this instructor asks students to write their answers to one or more compelling questions (for example, "If you could work in any situation possible, what would it be and why?") and share them with the class. After students complete this exercise, she informs them that they have just completed their first ITV presentation and then asks that together they generate a list of "the unique characteristics of the ITV medium." Without fail, they are able to identify a full set of attributes that often characterize ITV: delays in delivery, voices canceling each other out, perceptions that people are not real, and so forth. We find that the students' experience of discovering ITV characteristics on their own proves more effective than just being told about those characteristics. Students are engaged, they speak to each other across sites, and because their perceptions are acknowledged and validated, they become generally more confident and less intimidated.

We suggest that instructors further take the mystery out of the classroom technology by demonstrating the controls and showing "the man behind the curtain" in more than a metaphorical sense. Students and instructors can decrease their anxiety by understanding how technology creates the characteristics they perceive, and an effective demonstration and explanation of controls can do much to remove the fear of the unknown or unexpected. A guided exploration of the control booth allows students to become more fully aware of what they usually just sense is happening around them and helps students to understand what to expect during class transmission. For example, a demonstration can explain how and why cameras move when students speak, the change in monitor display resulting from voice-activation, and the switch from overhead to straight-on cameras. Often, the technician is the person who can best explain and demonstrate how the technology works, but unfortunately, ITV participants have a tendency to ignore the technician

as a contributing member of the community within the classroom. Encouraging a dialogue with technicians can help students feel more confident in front of the cameras and more comfortable in making requests regarding how they see themselves and others during ITV transmission. We encourage teachers and students to talk with technicians throughout the class and recognize that, whether through the technician or their own control, they can make changes as to how the technology is used.

We also believe that one of the best ways to support student learning is to model our experiences of self-discovery and exploration. Often, teachers who work flawlessly with ITV and produce polished presentations intimidate students with their expertise. Therefore, we remind teachers to share their stories of learning with students. To best learn about ITV, instructors should experience it both as students and as teachers and, while participating in these roles, record their observations about perceptions and interactions so they can share their discoveries with students. We suggest attending ITV workshops, touring the ITV classroom and experimenting with the controls, attending meetings of other courses, and, in general, gleaning as much information as possible by engaging in the role of student as well as teacher. We tell students about our initial perceptions of the technology and then describe how these evolved as we came to witness how and why our perceptions were rejected or confirmed. This modeling helps students to consider the dominant narratives they bring to technology.

By positioning ourselves as active and self-conscious explorers of the medium, we hope to encourage the same exploration and reflection in students. Our intent is that the purpose of orientation is not only to describe how the technology works but also to show that the medium is there for us to challenge and exploit, not to shy away from or fear. Talking with technicians and modeling our interest in learning about the technology help students grasp Miller's concept of seeing practical rhetoric as conduct, rather than as passive acceptance and application of rules.

Identify and Examine Underlying Assumptions Defining ITV

As we stated earlier, participants need to understand that ITV is not a traditional classroom or commercial TV. Similarities between these "old" media and the "new" medium of ITV serve only to confuse us—and to

invite comparisons between the two that inhibit our understanding and perpetuate unproductive, substantive responses to ITV. Students must not only recognize that they respond to ITV in conventionalized ways but must also understand as well why they respond in those ways.

Our second goal for our approach is to persuade teachers to take time to explore students' assumptions about ITV technology as well as their own. All participants need to understand the experience of the whole class community, and to this end, teachers need to promote activities that enrich students' understanding of what it means to be a productive, successful professional. We have found that with a self-conscious attention to student-centered pedagogy, assumptions about constraints can be turned easily into opportunities for professional enhancement in terms of both conduct and skill building.

One of students' most common assumptions about ITV is that it is little different from commercial television, or as one student puts it: "When I watch TV, I zone out." Indeed, the "interactive" aspect of ITV is the one least intuited by students. The screens in front of the class are not televisions in the common understanding of the term, but instead are monitors, even though they are the size and shape of screens commonly found in dorms and living rooms. Perceived as commercial television, students are unwilling to interact with the people they see; after all, "talking back to the television" is not acceptable social behavior. Further, feelings of "watching television" reinforce the kind of passive behavior that is the antithesis of the active exploration we advocate. Interaction will not occur "naturally" until such assumptions are exposed and reshaped.

Another response to the medium, often a result of orientation materials that stress the avoidance of noise, is that students feel "like we're in church." They feel they must sit quietly and not fidget or make extraneous noise, or else the camera will zoom in on them and they will be placed in a very negative "spotlight." Such perceptions inhibit community building, the free exchange of ideas, and dialogues with others. Again, we've found that when students have the opportunity to discuss these fears and have the opportunity to see the reality as far less dramatic than their assumptions, they are generally more relaxed, engage the course content, and contribute more freely.

One of the best ways to understand the experience of the whole class community is to share each other's physical context. In the traditional

classroom, we not only see our surroundings but also feel relatively certain that what we see and experience is pretty close to what students see and experience. This assumption is one we can't afford to make in the ITV classroom: many different classroom experiences exist, even within the confines of a single class. Each room has different monitor and microphone configurations, and the experience at our locale might be vastly different from that of our distant students, leading to unnecessary misunderstandings and unproductive misperceptions. For instance, we've all heard stories from teachers about how contrary students from distant sites can be: students move away from cameras so we can't see them or what they're doing. Our distant students, however, tell a much different story of what's happening: "We get tired of seeing ourselves on the monitor going out, so we move back from the camera to get a break." At the distance sites with which we have contact, there are two monitors at the front of the room: one that shows whoever is speaking at other sites and another that shows all the local students in their seats—a relentless (and distracting) mirror of their own activities.

Our distant students tell us of other instructor assumptions as well. Once we have gone through the process of sound and video checks with the local technician, we often take off at a run to make sure we have enough time to complete lessons and activities before the class ends and the monitors go blank. We often believe that, once checked, sound and transmission will remain fixed, that distant sites will continue to hear us throughout the class without our ever checking to ensure that they can. After all, in traditional classrooms, continued attention to sound, once established, is unnecessary. As our distant students tell us, however, this stability is not the case with ITV: "Instructors and the students at other sites don't realize we can't hear what they're saying, and we don't want to be the ones to interrupt. They need to check to see if they're being heard."

Taking the time simply to talk with students about the conditions created by the technology can be enlightening and can lead to problem-solving discussions that help students create their own solutions to the issues they identify and to which they respond. It can also open up avenues for collaboration with the technicians and for distant students' establishing themselves as site experts. We suggest that, early in the course, students at each site give a virtual "tour" of their locale, introducing the local technician and narrating the layout and the experience of working within that environment. This activity increases students'

sensitivity to the multiple physical and rhetorical situations in which their class community must function and respond. It also prepares them for the variety of technological contexts they are likely to encounter beyond the classroom in corporate settings.

Explore and Reinvent Norms of ITV Use to Shape Our Realizations of the Technology

Our third goal for self-conscious, participatory approaches to ITV recalls Bruce and Rubin's (1993) distinctions between a technology's idealized uses and its realization in actual use. Most technologies are developed with certain uses in mind, targeting desirable characteristics or behaviors for their users, what Bruce and Rubin call use as *idealized* by its designers. What often happens during actual use, however, is a *realization* process, or a process by which users shape the technology to their own ends. If we are to take control over the medium and have it serve us, we must learn to recognize the ways in which we shape ourselves to fit the technologies we use.

Few instructors, however, question idealizations of ITV technology. J. M. Neff (1998) notes, "For faculty in most disciplines, televised instruction poses little overt difficulty because it supports traditional methods of delivering education—lecture, discussion, examination" (136). The ideal use of ITV, then, appears to be presentation-style delivery with the teacher positioned as expert and the students positioned as passive recipients of prepackaged knowledge. This ideal is further entrenched by norms and conventions associated with commercial television, especially newscasts: stories and notes are compiled, transformed into scripts, and read by experts, who sit behind desks with graphics displayed over their shoulders.

The problem with presentation-style delivery, as both Neff and Anson point out, is that current writing pedagogy does not usually follow this teaching model. Instead, we have found that "students learn well by reading and writing with each other, responding to each other's drafts, negotiating revisions, discussing ideas, sharing perspectives, and finding some level of trust as collaborators in their mutual development" (Anson 1999, 269). In other words, we engage in highly collaborative writing workshops. To some extent, the features of ITV technology can interfere in this dynamic: time for discussion is discrete, bodies are distributed across geography, exchanging drafts must take place

through other media, and distant students feel silenced because local students see it as a "hassle" to interact with them.

All these obstacles—both perceived and real—to the pedagogy we prefer indicate that we must reinvent the norms associated with ITV technology and create a realized use of the technology that supports collaboration, exchange, and interaction. Open discussions can help students become more context sensitive, but allowing them to reinvent their classroom behaviors to take advantage of the strengths of the medium will do even more: it will allow them to become better communicators, more effective collaborators in their learning experiences, and more powerful agents for change. They will begin, in short, a process of realization that will shape the technology to the social situation they create in the classroom. The following techniques offer ways of beginning a healthy process of realization for ITV technology in use.

First, we suggest that participants reconfigure their room to reconfigure conduct. Most ITV classrooms are arranged lecture-hall style: students sit in rows in front of a "stage" area equipped with a podium and an overhead projector. The idealized use of these rooms has the instructor in the traditional place of authority, at the front of the room, moving only as far as her microphone cord or camera angle will allow. Students—local and distant—sit and take notes. These are not the only possibilities for conducting an ITV class, however, even if they are the ones idealized by the designers. We suggest that teachers recognize the symbolic, authoritative space the front of the room holds and then consciously work to share that space with students by inviting, even requiring, them to participate in that space.

For example, in one of our classes, we ask that students spend some time at the front of the room at least once during the course, even if that means simply assisting the instructor. Having students work in groups from the front is especially comforting because students often find strength in numbers. To facilitate group work, we advocate forming groups across sites and assigning roles to group members—such as summarizing content, leading discussion, conducting a workshop—so they can further negotiate the authority space according to content and gain experience in collaboration with distant team members. We've found the use of agendas, which indicate time as well as content responsibilities, to be particularly helpful because students know what is expected of them, can be prepared to contribute, and can consider the adjustments

they'd like made in the technology to accommodate their needs. Whatever the activity that brings students to the front, teachers need to be careful to demystify the technology: explain how controls work, demonstrate what monitors show and why, assist with sound checks, and provide time for experimenting and learning in addition to presenting.

Along with sharing the authority space, teachers should share student seats as well. Discussion times can be led by students or conducted with no one at the front of the room, to reinforce the value of students' participation and contribution. These shifts in geography can produce shifts in roles and reinforce student agency. Also, defining students' roles and responsibilities can open up possibilities for using both the room and class time more productively. If students see themselves as contributing to the flow and content of the class, they tend to take more control over the technology and the space so that their contributions are recognized and valued by others in the class.

Helping students define roles and goals can create a workplace meeting atmosphere not uncommon to many professional situations, where teams of people work together to accomplish something for the common good. From a more practical (instrumental) point of view, students are given opportunities to explore and use the technology, to present materials and lead discussions, and to experiment with camera angles and overhead devices. From a pedagogical standpoint, we are engaging with students in student-centered course design and implementation. If we support these kinds of student-led activities, the technology can be realized in ways that recognize the social, rhetorical situation while exploiting the strengths of the technology itself.

Second, we suggest that instructors be attentive to the language all of us use to describe interactions and re-create it to foster productive communication. Partly because many instructors spend most, if not all, of their time at one site, remote students often feel isolated, which surfaces clearly in their language. They describe their contributions, when in the form of questions, as interruptions of the normal flow and often begin their interruptions by apologizing. The effect of interrupting is further heightened by the cameras' sudden activation, precipitating speakers' abrupt appearance on the monitors. Local students reinforce the negative perception by turning their heads to look at the change on the monitor, emphasizing the feelings of distraction. "Interruption," as an unarticulated feeling or as a voiced complaint, fosters neither feelings of individual worth nor classroom community. Validating distant students'

desire (and right) to contribute to class becomes partly a matter of changing the language students use to refer to their own activities and to those of their classmates.

Other communication scenarios beg attention when working in an ITV classroom as well. "Normal" conversation, with its overlapping turn taking and spontaneous commentary, simply doesn't work with ITV technology. Sound delays fragment or truncate people's comments, monitors and cameras make it difficult to identify who is speaking, and speakers can and do talk over one another. Therefore, we must decide on new protocols—such as students' identifying their names and site location when they speak—to ensure that students' voices do not get lost in digital deflections and electronic voids. Sometimes instructors must act as traffic controllers, but they need to be careful not to act as conduits for communication. We found it helpful to insist that students hand off the conversation to each other and refer to the author of previous contributions by name, thus requiring them to learn each other's names and reinforcing understanding that people on monitors are people, not merely virtual representations. Seating charts, for both students and technicians, help facilitate turn taking and quick location of who is speaking. We must insist as often as possible that students talk to one another directly, rather than through us, to build the interaction often lamented as missing in ITV communication.

Third, we've found that simply building in time for students to talk with one another—get some "face time," as one student put it—can break students out of their passive reception mode and increase their feelings of belonging to a unified class working toward common goals. We like to leave about five minutes at the beginning of class for people to connect a little before we get down to business, and we try to give collaborative groups (especially cross-site groups) time near the end of class to work, plan, or just plain chat. Students might also request that the "transmit auto-mute" mode, which blocks sounds, be used during videos, discussions, or breaks. Just as students find it tedious to look at themselves constantly during class, they sometimes find it tiresome to consider every word before they say it, even during informal conversations with their local classmates. Turning off the sound for brief periods of time gives students needed breaks from feeling on-camera during class.

We often hear that technology dehumanizes students and instructors. If this is so, it is because we conduct ourselves in ways less human; in

other words, we gear our responses to the technology and not to the humans it connects. To emphasize the human connection, we try to initiate off-topic chatter and laughter on occasion, point out to students across sites their common interests, and allow students to move around—sometimes out of the gaze of the camera—so that they aren't sitting still for long stretches of time, feeling under surveillance.

Finally, we suggest collaborating with students in exploiting the medium to get more out of it and developing media-rich contingency plans for times when the medium fails. One of the assumptions we can safely make about ITV—or, for that matter, about any communications technology—is that it will occasionally fail. Developing contingency plans is a valuable lesson for students, who will have to deal with some of these same technologies in their careers beyond the university. As Elizabeth Tebeaux (1989) points out, analytical skills and imagination are two qualities students need to develop to survive in technology-rich workplaces. Moreover, contingency plans situate agency with the users, rather than with the technology, turning substantive views of technology back on themselves.

One of our instructors registered her frustration with the fact that some of our distant sites have experienced equipment malfunctions that have prevented them from accessing class. As a preventive measure for technology-related access problems, this instructor and her students decided to make videotaping every class a consistent policy across sites. Even if remote students are unable to interact directly with classmates, they can still access the material and observe the interactions that took place in their absence. Using suggestions from her students, this same instructor has also learned to make adjustments in how she uses her course packets. Instead of filling them with readings, she includes lecture notes and other study aids to help students fill in any gaps they might experience in their ability to access class. Videotaping classes for later viewing and providing materials that will support students at a distance models proactive responses to technical difficulties. It also uses the medium's familiar commodity—information delivery—to its fullest.

Another suggestion for a backup plan is to assign note takers for every class period, one or two students responsible for taking class notes and posting them to an electronic bulletin board or class listserv. Even if the technology does not fail, students find these notes valuable study aids, in addition to the fact that they provide valuable experience in a

practice common in our profession: to take, compile, format, and share notes from meetings. With a little guidance, students not only learn how to develop contingency plans for dealing with technological glitches, but they also learn about the implications of their decisions and the viability of their solutions—some of the more subtle layers of practical-rhetoric-as-conduct.

IMPLICATIONS AND FUTURE DIRECTIONS

Our approach answers Meyer and Bernhardt's (1998) call for a workplace literacy students need in order to understand and act upon social, organizational, and technological systems—to think critically and solve complex problems. ITV gives the option of true practice, not just the role-playing that Meyer and Bernhardt advocate, to have students engage in, rather than act out, "scenarios where communication is likely to be difficult or strained" and to explore in collaboration with instructors the issues of power in discourse: "Who does the speaking? When? And under what rules?" (93). ITV offers the opportunity to expand our as well as students' understanding of communication media and distance delivery. This skill is an important one as communication technologies continue to overlap and become integrated: consider such new technologies as Web TV, Internet videoconferencing, electronic collaborative white boards, and other emerging technologies whose impact we can barely imagine.

One of the most important and challenging implications of our approach is that we must participate in it, which means that we must examine our assumptions, reactions, and attitudes along with students'. As Stuart Selber and his colleagues (1997) advise in their discussion about collaboration in hypertext writing, "[I]t may be important to collapse the distinctions between writers and readers, to subtly dissolve notions of who owns particular parts of a collaborative text" (263). We encourage a similar collapse and dissolution between students and teachers as we together explore ITV—a dissolution more radical, even, than that espoused by current student-centered pedagogy. Our readers should understand that exploring ITV while in use offers both instructors and students new opportunities to understand communication and media and to develop skills and ways of thinking that are clearly marketable as we face ever expanding ways to communicate at a distance. We must be willing and able to develop our sensitivity to the fact that not only these technologies, but also our very discipline and practice,

are grounded in a complex world where communication itself is not just transactional or instrumental—it is transformational. It will be a difficult challenge to apply self-conscious reflection and participatory agency to ourselves in such a dizzying proliferation of technologies and communicative strategies, but we must.

We recognize, too, that our approach seems to take time away from what we see as the "content" of our classes—the lessons we'd like students to learn as they write and revise. To this concern we answer that if media are not themselves "content," then what are they? We do not expect students to learn how to run the sound boards and cameras, but we do expect them to learn to ask for what they want and to know enough about the technology to communicate their needs to the technicians responsible for running it. We expect students to learn to analyze the communicative situation and, from the constraints and opportunities presented by this situation, to realize a code of conduct through which they can not only get the job done but also articulate the values of our professional community. In short, we expect them to develop and exercise a literacy of agency by participating actively in shaping the technologies through which they communicate, collaborate, and work.