A study of seven interactive telecourses taught over a compressed-video-network—an environment where two or more classrooms equipped with cameras and microphones are connected by means of telephone lines—led to the formulation of some communication ideas. In this particular setup, the teacher and students could both see and hear each other in concurrent analyses of videotaped classes. An interpersonal, interactive-mediated model was chosen to examine how teachers formulated and exchanged messages with students and how students interpreted those messages in a distance education setting. Research data were gathered by means of teacher and student surveys and two concurrent analyses of videotaped sessions. Both student and teacher questionnaires covered simple topics. Findings generally support the observation that instructors bring more to distance learning than is generally thought. The research suggests that courses whose teachers used more interactive questioning and technology strategies were generally better received. Lecture as a presentation style was less successful but worked well for courses with motivated students. Some recommendations are for teachers to work from their strengths and to be open to the new environment. (TB)
Communicating Skills Necessary for Success in a Distance Environment

(SSCA Panel Discussion: Communicating in the Virtual Classroom, 3/29/96)

Ted C. Jones

There are a number of questions that arise for those of us beginning to integrate distance learning technologies into our teaching. These appear, however, only after the initial fear, nausea, and panic have subsided, and reality finally sets in. (After all, they never told us they were going to have to do this... It's an administrative plot to get rid of faculty). Questions dealing with practical and technical issues commingle in our minds as we teeter on the brink of an unknown world. (How do I teach and deal with cameras and microphones at the same time?) Do I just transcribe my outlines into Powerpoint? How do I interact with those other students so they don't feel left out? What's important for me to do... or NOT to do?). The learning curve seems straight up; and it may appear that we bring nothing to the process but considerable doubts and endless questions.

One of those questions, "How do students respond to what teachers do in a mediated class?", led to the following research. The communication ideas presented here were suggested by a study of seven interactive telecourses taught over a compressed-video-network—that is, an environment where two or more classrooms equipped with cameras and microphones are connected by means of telephone lines. In this
particular setup, the teacher and students could both see and hear each other in concurrent analyses of videotaped classes.

An interpersonal, interactive-mediated model was chosen to examine how teachers formulated and exchanged messages with students and how students interpreted those messages in a distance education setting. Research data were gathered by means of teacher and student surveys and two concurrent analysis of videotaped sessions.

Both student and teacher questionnaires covered simple topics—how prepared the teacher was to use the technology, what interaction was like in the class, how well materials and examinations were handled, the feeling of empathy between teacher and students, how the classroom layout and technology worked for the class, and how the course was administered. Teachers were also asked about their usual presentation style, how they related to their students, and their responses to the interactive telecourse itself. Students answered questions covering their experience with distance education classes, their motivation to take the course, their view of the teacher, and their response to the course.

The content analyses examined three hours of class time in each course for evidence of classroom interaction. The first determined each teacher's basic presentation style (lecture, class discussion) and questioning strategies they used. (Were questions asked frequently? Were they general to the class as a whole, or addressed to an individual at a specific site.) The second content analysis profiled each teacher's use of the audiovisual capabilities of the interactive telecourse system (Did the teacher sit and lecture, demonstrate at the whiteboard, write on a pad under an overhead
document camera, use Powerpoint presentations, use a VCR, and the like).

Good news! Findings generally support the observation that we bring more into the distance learning classroom than we think. And what we bring, if properly integrated with technology, can serve as a strong basis upon which to build distance communication skills.

This research suggests that courses whose teachers used more interactive questioning and technology strategies were generally better received. Lecture as a presentation style was less successful; however, it worked well for courses with more motivated students.

As a rule, teachers used the technology in very individual ways. In the telecourses studied, one teacher stood and lectured, another stood and drew models on the whiteboard, a third used the overhead document camera and wrote formulas on a pad of paper, another used computer generated slides and handouts, and still another asked a great number of questions individually addressed to students at all sites and had students come forward to use the technology to present their work.

In these courses, students saw interaction defined more as a teacher's timely and consistent response to their needs rather than as specific activities done by the teacher in the classroom. For these students, interaction seemed more a function of how technology was used rather than what was used. For instance, in the class where the teacher lectured and drew on the whiteboard, the teacher appeared to have no interaction with students and asked no questions of students at all. There appeared to be a one-way delivery of instruction which may or may not have been influenced by the fact that the students at
both sites were all male, and all but one student at the remote site were foreign born. Students, however, rated this teacher high on interaction, apparently because homework was faxed to him each day, and corrected papers were faxed back to students consistently at the beginning of the next class session.

These observations suggest that technology is malleable in its ability to serve the teacher's vision of instruction and dynamic in its effectiveness, according to the teacher's usage. Some highly rated teachers never used the fax machine. For others, it was the primary means of interaction.

Surveys suggested that the way students across all classes judged a course varied most closely with their ovation to take the course, how interactive they felt the teacher was, and the amount of empathy students felt coming from the teacher.

The findings of this study offer some reassurances, and some thought-provoking possibilities, to individuals who enter the interactive telecourse classroom. First and foremost, they suggest that good teachers come equipped with the basics they need for a successful initial foray into this kind of distance education. Technology is quite important to the mechanics of the process, but it also responds to and, to a certain degree, focuses the teacher's conscious or unconscious attitudes toward interactions. Technology demands some accommodation, but it can enhance presentation as the teacher understands how it works for them and expands upon its possibilities.

On this basis, the following recommendations to teachers, especially ones new to technology in the classroom, are presented:
Work from your strengths
*Learn the basics of the technology and envision how your particular presentation style might adapt the technology, rather than the other way around. You might want to make some adjustments; technology offers possibilities not usually available in a classroom. But don't undertake radical changes at first; refinement will come in time.

Be proactive in your interactions
*Do not ignore the technology; it may appear that you are ignoring students. In one course not included in this study, a teacher went to her supervisor one day furious that students at a remote site were throwing paper airplanes across the room at each other during her presentation. It turns out this teacher never addressed students at the distant site to the degree that they threw the airplanes just to see if she would notice!
*So, remain alert to the presence of students at all sites and make the effort to interact with them as appropriately as possible. Both you and your students will become more at ease with the technology more quickly, if you do. Be conscious of and responsive to the students' need for timely feedback, whether through carefully devised question/answer strategies, email-, or regular faxing of homework to remote sites.
*Devise some consistent approach to interaction with students both in and out of class; follow it consistently. In general, students will follow your lead in working with the system.

Empower and evolve the process
*Visualize the technology as integral to your course, and resolve any conflicts that may serve as stumbling blocks to you and your students.
Look for any biases you have toward technology, either pro or con. Monitor the potential of those biases to undermine your work with students.

May I refer back to the course in which the airplane incident took place, for example. After two years, this teacher, who was technophobic to begin with, was using Powerpoint for her presentations, regularly interacting with students via the technology, and even visiting the remote sites on a regular basis to present to students back at the main campus.

**Be open to the new environment**

*Adapt it and adapt yourself according to your needs and your students needs. This is what the teacher I’ve been discussing decided to do, and it worked.*

In summary, the communicating skills necessary for success in distance environments are basically a combination of an interpersonal exchange strategy, a thoughtful personal philosophy of how technology supports the enterprise, and the extension and refinement of these two through application and observation.

Finally, realize that using technology may change the nature of your teaching in ways not yet known. Your accommodation to the technology environment will eventually lead to exploration and innovations as you and your students become more comfortable with the exchange possibilities. It may be that teaching in a traditional classroom will never be the same again for teachers who regularly teach in distance environments.
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