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IP Videoconferencing in Graduate Professional Education: Collaborative Learning for Public Management

Introduction. The commitment of prominent universities and professional schools to the development of digital course material for the Web has stimulated debate about its efficacy. Some argue that the unique properties of the Internet (connectivity, non-linearity, de-centering, and virtual presence) offer opportunities that a standard classroom could never match. For example, Taylor (2001) predicts that these technological innovations will have a profound effect on the curriculum: «Most important, the classroom has expanded and now is global. Anyone, anywhere in the world can, in principle, sit down around the same virtual table and learn together» (Taylor, 2001, p. 234).

We agree with Taylor that technological innovation has altered and will continue to transform «what educators do as well as how they do it» (p. 234). Nevertheless, we contend that excitement about technological innovation in higher education often obscures the problems of implementing changes that will have a transformative effect on classroom learning. While technology offers a range of opportunities that a standard «chalk and talk» class could never match, questions about the educational value of the new digital media loom large. Do the visual images, sounds, animations, and streaming videos really add to the learning experience or does digital technology merely provide an entertaining distraction? If so, how can technology more effectively promote student-centered learning?

Pedagogical Objectives. One way to help mitigate against effects of techno-enthusiasm is to establish clear pedagogical objectives in advance, so that one's teaching guides the technology rather than letting the technology guide the teaching.

We were motivated by three pedagogical objectives in the design of these applications of digital technology to professional education at the graduate level. These objectives, which are listed below, were derived from our classrooms, as well as skills-oriented workshops. They also reflect our theoretical interests in discourse analysis and the larger body of «constructivist» thought (http://www.maxwell.syr.edu/ir/apsa98-1.htm), with its emphasis on the de-centered self, the sense of «juxtaposition and superimposition, and nonlinear, pastiche-like orderings of space» (Deibert, 1997, p. 201).

Our first objective involves abandoning the conceptual system based on the idea of linearity (Landow, 1992, p. 2) in order to facilitate implicit, incidental, and contextual learning (Snyder, 1996, p. 103). As learners move through a text, they should not be locked into the perspective of the author, but rather should be guided by their own interests, jumping back and forth, omitting material, skimming detail, or going deeper than the author intended. Our second objective is to promote independent and active learning by students. Both traditional lecture courses and many courses that utilize computer technology treat students like passive objects whose purpose is to absorb «knowledge.» Instead, we would like to transfer to students «much of the responsibility for accessing, sequencing, and deriving meaning from information» (Snyder, 1996, p. 103). Our third objective is to encourage collaboration with others, including learners in distant locations. Learners should be able to work with each other successfully not because of geographical propinquity, but because they share an interest in a particular subject matter. In other words, students will be able to work together in virtual space based on interest rather than spatial site (Landow, 1992, p. 129). «The result is a much more de-centered, multiperspectival universe of imagined communities» (Deibert, 1997, p. 198).

Previous Research. The research reported here is part of a six-year effort that began in 1997. Seifert and Bonham, 1997 (http://www.maxwell.syr.edu/ir/apsa97_1.htm) attempted to help evaluate competing claims about on-line classes.

The authors concluded that to stimulate student interest in the use of the Internet for course work, fully integrated applications of Web materials need to be developed. In a second paper, «Advancing Education through Digital Technology: Text Chat, Videoconferencing, and Hypertext,» (http://www.maxwell.syr.edu/ir/apsa98.htm) Seifert and Bonham (2000) evaluated attempts to promote professional graduate teaching using resources that take advantage of the unique characteristics of the Internet. Specifically, they examined the effectiveness of combining interactive videoconferencing with Web-based text chat and hypertext authoring to create a new learning environment, where students in the United States collaborate with their peers abroad to address current policy issues. A third paper, Bonham and Seifert, 2000, (http://web.maxwell.syr.edu/ir/isa99.htm) described a further extension of a strategy to move from a teacher-oriented to a student-oriented learning environment through the use of collaborative hypertext.

Collaborative IP Videoconferencing. In this paper we describe a further extension of our efforts to promote graduate education using resources that capture the de-centering properties and the virtual presence of the Internet. Specifically, we explore the effectiveness of combining interactive digital videoconferencing with a Web-based discussion forum to create a new learning environment, where students in Japan, Russia, and the United States collaborate with their colleagues abroad to address current policy issues. We call this new environment, «collaborative videoconferencing».

Collaborative videoconferencing can be viewed as a component of «knowledge media,» a term first used by Mark Stefik (1986) to describe «the profound impact of coupling artificial intelligence technology with the Internet» and later elaborated by Eisenstadt and Vincent (1998) to include «the process of generating, understanding and sharing knowledge using several different media, as well as understanding how the use of different media shape these processes.» According to Eisenstadt and Vincent, «One of the most exhilarating and rewarding aspects of the Internet is the way it brings people together. Being able to share and reuse knowledge is a fundamental aspect of the new possibilities made available through creative uses of Knowledge Media» (p. 4).

The November 2002 Homeland Security Videoconference. In November 2002 Students in Russia and the United States participated in an IP videoconference on the topic of «homeland security.» The students in the United States, who were enrolled in a professional Masters Degree Program, participated as part of their regular course work. The group in Russia was much smaller; it consisted of five students who were in their fourth or fifth year of study, and one Ph. D. student who acted as the moderator. All of the participants on the Russian side were selected to participate in the conference.

The conference began with introductions and short comments from three students on the American side, as well as all of the participants on the Russian side. The interaction continued without interruption for one hour. After the conference, the participants completed a questionnaire that was designed to measure self-reports on what they learned and their interest in participating in future videoconferences. The students did not have the opportunity to exchange e-mail with each other or engage in asynchronous interaction through a discussion forum prior to the videoconference. In other words, the videoconference was a single, discrete activity with no prior preparation and no follow-up

November 2002 Questionnaire Results. Although the students who participated in the November 2002 videoconference reported that they gained only a modest amount of knowledge about the problem of homeland security in their own countries, they indicated that they did learn a substantial amount about the problem in the country on the opposite side. In addition, all of the Russian students were very enthusiastic about participating in «another

videoconference like this one,» while only about 60% of the Maxwell group expressed high interest in participating in another conference. Moreover, the Russian students were much more interested in collaborating with the students they had met through the videoconference than were the Maxwell students. A further analysis of the questionnaire data for the Maxwell suggests that preparing for the videoconference by doing additional reading was not related to the amount of information learned in the videoconference.

The March 2003 Homeland Security Videoconference. In order to promote greater effectiveness of this new learning environment, another group of students in Russia and the United States prepared first for a videoconference on homeland security in March 2003 by using an asynchronous on-line discussion forum (http://www.maxwell.syr.edu/ir/Discussion/homeland-security_frm.htm) to exchange ideas and develop a conceptual structure before the conference occurred. After the videoconference a questionnaire was administered to the participants to measure the ability of Internet-based «knowledge media» to promote incidental and contextual, active, and collaborative learning and transform the process of learning.

March 2003 Questionnaire Results. For the purposes of this analysis, we will compare the Maxwell students who participated in the November 2002 videoconference with the Maxwell students who participated in the March 2003 videoconference. As expected, the March group (discussion forum) reported that they learned more about the problem of homeland security in both the United States and the Russian Federation than did the November group (no discussion forum). This group also reported doing much more reading to prepare for the videoconference than did the group of students who participated in the earlier videoconference. The March group reported much more enthusiasm for participating in another videoconference (their average score on a five point scale was 4.52 compared to only 3.76 for the November group). The differences were even larger for the collaboration measures, such as contacting the Russian participants (3.69 compared to 1.60), and collaborating with the Russians on a project (3.69 compared to 2.10).

A further analysis of the correlations between the questionnaire variables reveals that for the March group, preparation for the videoconference by doing additional reading was not highly related to any other self-report. However, making a verbal contribution during the videoconference was related to self-reported learning about homeland security in Russia (Kendall's tau b =.42), which, in turn was related to wanting to participate in another videoconference (Kendall's tau b =.44).

Conclusion. One of the most essential characteristics of successful implementations of educational multimedia is the capacity for future development, both technologically and pedagogically. Over the past several years the technology has evolved significantly, providing new opportunities while enhancing existing ones. When we started applying the new technology to our teaching, there was a tendency to focus too much on the technology itself-- developing skills, testing boundaries, exploring new options/features--while sometimes losing sight of the students. In that respect we were using the technology to construct the classroom, whether it was in cyberspace or in a building.

As a result of our research program on applications of digital technology, we now view the classroom as being created by the students, themselves, with technology as a resource to promote active learning. To that end, our most recent efforts at collaborative videoconferencing provide a qualitatively different experience compared to other forms of learning. We have found that collaborative videoconferencing, which combines an asynchronous discussion forum with face-to-face interaction, results in more learning and greater enthusiasm for future collaboration, than does a traditional classroom setting. Students become involved in a truly transnational learning environment, where they obtain information and knowledge, debate competing perspectives, and create products with colleagues with

whom they would otherwise not have the opportunity to collaborate. This approach, we believe, has the potential to transform what we do in the classroom and how students learn.

References:

1. Bonham, G. M., & Seifert, J.W. (2000). The disruptive and transformative potential of hypertext in the classroom: implications for active learning. International Studies Perspectives, 1, 57-74.

2. Deibert, R. J. (1997). Parchment, printing, and hypermedia. Communication in world order transformation. New York: Columbia University Press.

3. Eisenstadt, M., and Vincent, T. (1998). The knowledge web. Learning and collaborating on the web. London: Kogan Page Limited.

4. Landow, G. P. (1992). Hypertext. The convergence of contemporary critical theory and technology. Baltimore, MD and London, UK: The Johns Hopkins University Press.

5. Seifert, J. W. and G. Matthew Bonham, G. M. (1997). Using the world wide web: expanding the classroom or a virtual distraction? American Political Association, Washington, D.C.

6. Seifert, J. W. and Bonham, G. M. (2000). Learning through digital technology: text chat, videoconferencing, and hypertext. Kuzma, L., Lantis, J., and Boehrer, J. (eds.), Active learning in international studies for the 21st century. Boulder, CO: Lynne Reinner, 201-217.

7. Snyder, I. (1996). Hypertext. The Electronic Labyrinth. Carlton South, Australia: Melbourne University Press.

8. Stefik, M. (1986). The next knowledge medium, AI Magazine, 7, 34-46.

9. Taylor, M. C. (2001). The moment of complexity. Emerging network culture. Chicago: University of Chicago Press.

Acknowledgements