DELIVERING DISTANCE EDUCATION VIA INTERACTIVE TELEVISION: CONSIDERATIONS IN FACULTY PREPARATION, COURSE ADMINISTRATION, AND STUDENT EVALUATION

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ABSTRACT

As distance education continues to grow in popularity and importance, more and more marketing faculty will be given the opportunity to teach "at a distance." One distance format growing in importance is interactive television which offers the advantages of real-time visual and audio interaction among instructor and students. This paper reviews important considerations from the literature regarding faculty preparation, course administration and student evaluation so that marketing faculty may be better prepared to undertake interactive television delivery of distance education and perform these assignments with distinction.

INTRODUCTION

As we enter the new millennium, distance education programs seem to have become the darling of college administrations all over the United States. Over 1500 institutions now offer courses via distance (Larsen 1999), and 300 accredited universities now offer degrees in approximately 750 different fields (Charp 1999). Business schools have joined the party, with 80 schools offering MBAs via distance (Larsen 1999).

The delivery of distance classes has evolved from traditional mail-based correspondence courses, to include audio/video-taped lectures, and newer formats that take advantage of advances in communications technology so as to incorporate interactive television and the internet (Charp 1999). Of special interest to business education is the use of interactive television (I-

TV) because this format has gained wide acceptance in industry as a time-saving means to facilitate meaningful communication among managers at different locations. The I-TV format allows full interactivity among students and instructor at multiple sites, and seems to be ideally suited for business education where point/counterpoint discussion of business issues is a necessary requirement in the education process.

The key economic advantage of any type of distance learning over traditional on-site schooling is that it saves students' time (Becker 1999). Cost/benefit analysis further suggests that I-TV formats may be constructed in such a way that marginal costs to the university are less than hiring new faculty, building new classrooms, and providing instruction in a traditional setting (Hobbs and Christianson 1997). However, some of the literature has been critical of I-TV distance education, especially with respect to the quality

and appropriateness of the courses offered (Clow 2000), adequacy of faculty preparation (Charp 1999), and the appropriateness of institutional support (Wilson 1998).

In the coming years, many marketing faculty will be given the opportunity to teach in I-TV settings as the popularity of this format grows. The purpose of this paper is to illustrate some of the differences in faculty preparation, course administration, and student evaluation that are involved with interactive distance teaching as compared to traditional classroom teaching. In this way, perhaps those offered I-TV teaching assignments will go into the experience with open eyes.

THE INTERACTIVE TV CLASSROOM

The authors of this paper are faculty members at a university that has been a leader in I-TV course delivery since 1993. Each year this university delivers more than one hundred courses to two hundred sites throughout its state and to locations as far away as Hawaii, the Philippines, and Japan. In 1998, the college of business began offering a complete I-TV MBA program, and the authors teach in that program.

With I-TV, most of the limitations that are present with educational television, videotaped or satellite programming are overcome by the ability of teachers and students to interact spontaneously, as well as use a multitude of additional instructional technologies (Hobbs and Christianson 1997). A television signal is broadcast from the instructor's location to the students' remote location (or locations), and each location is equipped with I-TV equipment. The instructor's location normally contains a camera focused on the instructor and two TV monitors. One monitor presents the signal going out to students so the instructor can see at any time what is being broadcast. The other monitor presents the incoming signal from the students' remote location(s). If multiple remote locations are used, the monitor can be set to cycle through the locations at a predetermined time interval.

This way the instructor can see what is happening in each remote location.

Remote locations have at least one TV monitor for the incoming signal from the instructor and possibly more, depending on the size of the room. Microphones are also located on desks throughout the students' room. When a student keys a microphone to answer a question, ask a question, or make a comment, the camera in that location becomes active and the incoming picture for the instructor switches to that room, so the instructor can see the student talking.

The signal broadcast to remote locations may come from many sources: the camera focused on the instructor (or home site class), a computer, a videotape player, or a document camera. The incoming signal from students is normally from a camera focused on the room, but it may be from a computer (used during student presentations), videotape player, a document camera, or other source instruments depending on the level of sophistication of the students' classroom.

Interaction between instructor and student is slightly slower than the traditional classroom, because of the transmission delay which is the result of the signal being conveyed at distance through the telephone lines. A remote location in Japan has a noticeable delay in reaching an instructor's location in the United States (on the order of two to three seconds) and instructors must exhibit some patience in waiting for student response to any questions asked.

FACULTY PREPARATION FOR I-TV TEACHING

Unfortunately, faculty are often ignored in the initial design of distance education programs. We often fail to recognize that distance education does not automatically equate to distance learning (Wilson 1998). Economies of size and scope potentially favor distance programs over traditional on-campus programs, but at the institution level. Research suggests that faculty time

commitments are much greater when teaching in distance formats such as I-TV, and the standard compensation programs offered to faculty do not adequately compensate the faculty member for participation. When compared to on-campus instruction, distance courses require three to four times more dollars to develop and three to eight times more faculty and support personnel resources to operate on a day-to-day basis (Wilson 1998).

First, there's the need for instructor training in advance of course preparation and delivery, with greater emphasis on feedback, assignments, testing, and facilitating discussions (Charp 1999). Our university offers a 40-hour course for faculty members preparing to teach via I-TV which addresses multiple topics of interest: technology, distance syllabi, teaching techniques, handling presentations, using additional resources, and managing logistics. In addition, a number of other universities offer similar training programs designed for high school teachers. Costs for these range from $500 to $1000 (Hobbs and Christianson 1997).

As a result of training, instructors learn that they may have to change their standard teaching approach. Instead of the "sage on stage" approach used in more traditional education, they likely must become more like a "guide on the side" (Alexander 1999). Students used to seeing Hollywood-developed fare on television, with its polished news reporters and fast-paced video clips, will lose interest more quickly if the instructor's strategy is simply to televise what he or she has been doing in the traditional classroom. Distance teaching requires the development and use of interesting interactive activities and course materials; and contingency plans in case communications channels become temporarily out of commission.

The use of I-TV does require a certain degree of restructuring of course material. Distance students need to have all class material accessible and require quick response on questions – much quicker than with traditional teaching environ-

ments (Alexander 1999) – and, consequently, the demands for instructor contact in a distance-learning format are typically much higher than for a traditional class (Berger 1999). A course web page is an appropriate solution that facilitates studying, note taking, class discussions and "catching up" after a missed class (Karuppan 1999). Faculty should provide materials with real substance, not just lecture outlines, and this effort requires a considerable amount of developmental time. These materials may include reading assignments, in-class activities, lecture notes, study guides, quizzes, web links, cases, and exams – anything that you would normally handout to students in a traditional classroom. Of course, the material placed on the web must be in a format accessible through the web (e.g., html, pdf, Word, WordPerfect, etc.). To avoid word processing conflicts, many instructors use the pdf format from Adobe, as the Adobe Reader is a free download and provides a universal method for students to read files.

The actual delivery of instruction also requires additional preparation. One has to remember that the chalkboard or whiteboard is not an alternative for displaying information because it is very difficult for the camera to pick up the image. Although special "electronic boards" are available, our experience suggests that the use of these boards is more difficult to integrate into the presentation. Accordingly, we recommend the use of presentation graphics software (such as Microsoft's PowerPoint™) along with a computer to augment lecture delivery. This requires the development of appropriate images before the class, and instructor preparation must take this into account.

The time required to convert traditional classroom materials to a I-TV format is a large portion of the preparation time for a distance class. Distance education classes typically require between 200 and 300 hours of faculty and staff development time per credit hour (Fornaciari and Forte 1999), significantly more than traditional classroom environments. In attempting to respond to that additional commitment, some

universities are providing additional funding for course development. For instance, Penn State splits revenues with faculty who develop and teach courses (Charp 1999), and Mississippi State provides a one time $2000 course development stipend, plus a $2000 fund to be used for faculty software or hardware.

ADMINISTRATION OF A DISTANCE CLASS

In addition to redesigning their course for a distance learning format, instructors must become familiar with the technology and develop an information management system. Students learn quickly to rely on e-mail communication to submit assignments, ask questions, ask clarification and make comments, and the added volume of e-mail correspondence can be a daily challenge for the instructor. Students have reported that electronic communications freed them to be more revealing and to communicate more with the instructor than they would have had they been in a typical classroom situation (Berger 1999). As a rule of thumb, you can plan on receiving an average of one e-mail per student per week for each three-hour class delivered by I-TV. So, if you're delivering three classes with 30 students each, you may be receiving (and replying to) approximately 90 additional e-mails each week.

Common methods of presenting information are the computer, videotape player, document camera, and verbally. The instructor has the option of what is beamed out to students at remote locations. Computer-mediated presentations using presentation software (e.g., PowerPoint™) can be effective if the font and color combinations are specified for this application. Typically, a font size of forty is necessary for the print to be viewable on a TV screen, no matter what size the screen. A common color combination is a blue background with white letters. This is easy on the eye and provides sharp contrast so the print stands out.

A document camera requires the use of large print, though not as large as PowerPoint™ pre-

sentations. The instructor may use the document camera in situations that traditionally called for the chalkboard. The instructor may use a blank paper (preferably medium-blue in color for improved contrast) to write equations, drawings, figures, or notes. A limitation of the document camera is the viewable area, which is relatively small compared to a chalkboard.

Of course, the instructor will provide information verbally to the class. One must remember the rule of thumb that we retain 20 percent of what we hear and 50 percent of what we hear and see. When considering distance education, a decline in these numbers would not be unexpected. The instructor's presence is only through the TV monitor, which is normally not a big screen. A potential concern when delivering information verbally is physical movement. Depending on the bandwidth of the signal (full or compressed), physical movement may appear normal or blurred to the viewing audience. Movement is not a problem if the signal is full as we see with our TV we watch at home. But if the signal is compressed, which many universities use since it is cheaper, quick physical movement will not transmit clearly. The result will be a jerky, blurred movement. Consequently, quick hand and arm motions will lose effectiveness.

STUDENT EVALUATION

The instructor must also rethink the evaluation of students in distance classes. How will they get the exam, who will administer it, and how will cheating be controlled? It will still be the instructor's responsibility to prepare exams for the class, but the instructor cannot be physically present when the class takes the exam. Fairness requires that each remote class location will have the same amount of time to take the exam. Who monitors this?

Depending on your situation, distance classes may have a proctor available for exams. This person would receive the exam forms, administer the exam, and then return the completed exams to the instructor. Grading of exams is normally

delayed in a distance setting. The exams have to be mailed to the instructor before grading can begin. While this may not appear as a problem, the mail from distant cities or foreign countries may take considerably longer than you think to be delivered. Receiving exams from multiple locations, grading those exams, then getting the results back to students is an exercise in coordinated logistics. Students require quick feedback so that they may make corrections in their understanding of the subject material before going on to other material in the course. But time lost in the mails can be a real negative. You may be able to post test scores and an answer key on a course website, and this reduces turn-around time. But whether posting answers on the website or mailing back tests, either way instructors must make new exams each time the class is taught. Rest assured a test file would develop at each remote location.

Alternatives to consider are posting brief exam answers on the web for students to read and send student exam results and comments through email. Posting brief exam answers would also result in an exam file. At least modification of questions could then render them usable in the future. One may also just send exam results with comments concerning deficiencies.

Where distance education has not altered the education process is in presentations. Most university faculty have been integrating technology into the traditional classroom and distance education is a giant integration of technology into the classroom. Student presentations using PowerPoint™ are easily accomplished with consideration given to the colors and size of font used, since it will be viewed on a TV monitor.

Student projects using local businesses can be a challenge. Many faculty are familiar with local businesses and have established relationships with them. Student projects are then a matter of contacting the local businesses and asking for their participation with a student group. Distance education places the burden of locating businesses on the students at the remote location.

It is also harder for the instructor to monitor and evaluate the student/business interaction and thus ensure the quality of the project from the students' perspective and the business's perspective.

With respect to student evaluation of I-TV distance education, the results have been mixed. Although many studies have found no significant differences in student performance between distance and traditional formats (Heiens and Hulse 1996; Parrott 1995), there does appear to be a difference in completion rates that favors traditional instruction (Parrott 1995). Regarding student satisfaction, Clow (2000) found a significant difference between undergraduate and graduate course offerings, leading him to conclude that I-TV distance education is more appropriate for graduate education. Students do not learn all concepts equally well in a given medium. Adjusting teaching strategies to student learning styles can produce significant gains in student performance (Hobbs and Christianson 1997), and the I-TV format provides a great deal of flexibility in teaching strategy and style.

DISCUSSION

As we consider some of the key differences between I-TV distance teaching and other teaching formats, it is important to recognize that I-TV can be as effective as traditional formats where (1) the methods match instructional objectives; (2) student-to-student interaction is fostered; and (3) there is ongoing teacher-to-student feedback (Charp 1999). Distance education in any form is not likely to replace social integration, rite of passage and networking, which require long-term on-campus group interactions (Fornaciari and Forte 1999). However, most other roles of a university can be accomplished through an I-TV format. Accordingly, the evidence suggests that there is a place for I-TV distance teaching as part of a comprehensive program of business education, primarily in instances where saving student travel time is important.

However, we underscore the concerns expressed by Fornaciari and Forte (1999) that the costs associated with providing effective I-TV distance education are more likely to add strain rather than relief to the university budgets. When the true differential costs of faculty preparation and delivery time are included in the computation, I-TV distance education costs are likely to be more expensive than first anticipated. Tuition charges may need to be adjusted upwards to compensate for these added costs.

With respect to faculty who undertake the challenge of teaching at a distance, we echo the admonition of Larsen (1999) and Clow (2000) that effective distance education requires superior organization skills on the part of both the learner and the instructor. For the faculty member, this requires the investment of additional planning time. But for those universities that facilitate teacher effectiveness by providing the resources and reward structures, I-TV distance education may well widen the market for business education to students who would not normally participate in the educational process. And, in the final analysis, if anyone is concerned about the increasing costs of education, all they need to do is consider the costs of the alternative – ignorance – and the added value of distance education formats becomes self evident.

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