

Interactive Distance Education in Business: Is the New Technology Right for You?

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Interest in distance education has increased significantly in recent years with the introduction of interactive television technology into the classroom. This growth in demand has been fueled primarily by the increase in adult learners and instructional delivery technologies (Wilkinson & Sherman, 1991). The demand from working adults has encouraged many state governments to create statewide delivery systems to offer higher education at or near the workplace (*Lifelong Learning Trends*, 1992).

Distance education can be viewed as an opportunity for business departments to offer credit courses. Enrollments in colleges of business have been decreasing since 1987, after an increase over the previous 2 decades (Schuster, 1994), and distance education course offerings can increase student enrollments, particularly of part-time students (Wayland, Swift, & Wilson, 1994).

As opportunities for using this method of course delivery increase, business educators need to evaluate the applications and issues involved. Although distance education appears to be on the increase, many business professors may be concerned about adapting to this new environment. Our purpose in this article is to describe the technology and discuss the issues and concerns re-

ABSTRACT. Distance education has grown more popular as a method of instructional delivery. Some administrators and faculty members, however, may have concerns about adjusting to the new technology. This article presents a description of distance education as well as some factors for administrators and faculty members to consider in the decision to implement it.

garding its use in the business classroom.

Distance Education

Distance education can best be described as the separation of student and instructor during the process of education delivery. This separation may take many different forms, ranging from print correspondence courses, to a satellite one-way delivery system, to several simultaneous interactive classrooms in different locations. Distance education enables courses and programs to be delivered to sites that might otherwise be without access to these educational opportunities, thus expanding effective market coverage.

Off-campus education is certainly not new to business instructors. Faculty members have often taught at various locations as part of their teaching loads. However, off-campus instruction has not been an effective technique for using faculty resources; faculty mem-

bers lose valuable time commuting back and forth and encounter expenses in transportation, overnight stays, and meals. Distance education can provide an alternative means of reaching off-campus students.

There are currently more than 100 degree or certificate programs delivered by distance education at colleges and universities in the United States and Canada (Weiss, 1994). The estimates for the number of students currently taking distance education courses for college credit range from 300,000 to 1 million (Weiss, 1994). Though distance education technology can be costly, one of the primary reasons behind its increased popularity is undoubtedly financial because of the great number of students it can serve effectively. Consortia are even being formed by colleges so that institutions can share courses and accept credits with other members (DeLoughry, 1995).

Technology and Instructional Delivery

Developing distance education courses can be extremely expensive. A properly equipped interactive distance education classroom, using digital compression technology, can cost more than \$75,000 in equipment alone (J.

Beabout, March 16, 1994, personal interview, Eastern Illinois University). This would include the digital compression equipment, two remote-controlled television cameras, four large-screen monitors, one document camera, one video-cassette recorder, and a facsimile machine. With digital compression technology, special high-speed telephone lines are used to transmit and receive the video and audio data.

In addition to the cost to equip the classroom, supplemental costs include telephone line charges, distance education support personnel, and instructor training. Remember that the effective cost of providing one such classroom would be double the cost of one traditional classroom.

The video technique of communication may vary from program to program. In some cases, the camera is in a fixed position and the instructor is forced to talk directly into the camera, not physically moving out of range. The environment can be significantly improved through the use of a touch-sensitive control panel, which can be used to operate the video camera and other equipment. In some cases, the instructor must operate the panel, which can greatly distract his or her attention. This situation can be improved by the use of a facilitator who moves the camera around to track the movements of the instructor. The camera position can also be altered to focus on individual students, regardless of location, when they make comments or ask questions.

Another frequently used piece of equipment is a document camera, which replaces the overhead projector used in traditional classrooms. This camera is used to display screen images of documents that are placed on a flat panel on the base of the unit. When this camera is focused, the image of the document is projected on the monitor.

The majority of distance education courses use a combination of video, audio, fax, and online discussion. To support contact between students and instructors outside of the classroom, e-mail, toll-free numbers, and electronic bulletin board systems are being used. In addition, a telephone and fax system can be used to facilitate exchange of information between the classrooms.

The sophisticated equipment also enables the instructor to use a variety of multimedia resources for classroom instruction.

Obviously, the distance education setting is different from the traditional classroom setting. With at least one camera, and a number of microphones distributed around the room, students are immediately aware of the fact that the distance education classroom is different. In addition, television monitors are located in the back and in the front of the classroom. Most of the information that would normally be displayed on a blackboard/whiteboard or through overhead projectors is now displayed on television monitors.

The students at the remote sites need to adjust to a television image of the instructor and must learn how to interact with the instructor through the interactive audio and video setting that is used. In some cases, microphones may be hanging from the ceiling to pick up student voices at the remote sites, whereas in other instances, students may be equipped with microphones at their seats. The instructor typically uses a wireless clip-on microphone that enhances clarity and mobility.

As mentioned above, most distance education classrooms are also equipped with video-cassette recorders. The video image is displayed on the monitors in the classroom, at both the originating and remote sites. The video projection can be controlled just as it is in the traditional classroom.

In some instances, the instructor teaches to several locations, yet remains at the main classroom. Ideally, the instructor should rotate between the main site and the remote sites, ensuring that all students have equal "in person" time with the instructor.

Another growing form of distance education is the use of the Internet. Entire courses are being taught through the World Wide Web (WWW) (Gibb, 1996). Internet courses allow the student to view the lecture and class materials, as well as browse the WWW for related material. Students can also interact with guest speakers. Communicating with other students and instructors virtually anywhere in the world provides endless educational opportunities.

The advantage of this type of distance education is the convenience for the student. Students have open access for their class at any available time and may take their class from home or work. This is especially appropriate for the adult learner with time constraints. However, computer hardware and software must be available. Students without Internet access from school or corporate accounts may have to pay line charges through Internet access services such as Prodigy, America Online or CompuServe. These conditions may prove to be too costly for the prospective student.

College of Business Concerns

Because the cost of the latest digital compression equipment, employing fiber-optic technology, telephone lines, and other necessary equipment can reach \$75,000 or more for one classroom, some administrative issues need to be considered.

Further, in addition to the supporting technology, a university needs to establish an administrative infrastructure for the special needs of the students and faculty involved with distance education. At the very least, the university has to support a distance education coordinator who is responsible for the implementation and maintenance of the system. Facilitators for each classroom (main and remote) need to be hired, trained, and supervised. In addition, the administrator will need to provide some training assistance to faculty who will be using the distance education technology. Schaeffer and Farr (1993) suggested that proper faculty recruitment, assistance with course design, seminars, workshops, and ongoing coaching are essential to the success of distance education.

Another problem is keeping communication open between the classrooms. To facilitate the physical movement of exams, assignments, and handouts to remote sites, the university may have to consider hiring a daily courier service so that instructors can receive information from remote sites within 24 hours. An alternative would be to transfer files through e-mail and have them printed at the remote sites for distribution to students. Any handwritten material (i.e.,

exams, in-class assignments), however, would still need to be sent either by courier or fax.

Careful consideration must also be given to the target market area to be served. When distance education is first introduced, courses may be offered to any location with the proper equipment. However, as other schools become aware of the potential for growth and increased media and political attention that can come with an aggressive distance education program, issues of territoriality will become critical. Turf wars over priorities can be a problem, even for a well-planned degree offering that uses distance education.

Another important issue concerns the use of copyrighted materials in the interactive distance education environment. Even though the law regarding general interest programming is relatively well settled, questions concerning copyright ownership arise when telecourses integrate live lectures and pre-existing materials. The ownership of these materials is clouded even more when the class is recorded for delayed viewing and archiving, as is done in some applications (Lutzker, 1994).

In some cases, students may prefer not to appear on camera or be captured on videotape. To be fully protected, a release from all students and other on-camera participants should be obtained that assigns their contributions to the university and authorizes the use of their name, voice, and likeness. University legal departments should be consulted to ensure that the rights of participants are protected.

Departmental Concerns

Many faculty members may feel that instruction via interactive distance education is inferior to traditional instruction (Russell, 1992). Such attitudes could make it difficult for administrators to identify instructors to participate in the classes and resources to support the program. Indeed, not every faculty member will be well suited to teaching via distance education. Those who are will need to be trained in the use of cameras, monitors, and microphones, especially if technical assistance will not be provided. In addition, instructors

will need to be trained to adapt their existing business course materials to the new delivery system and to apply group work and in-class exercises to the new environment.

Administrators will also have to determine whether they are willing to provide a reduced workload for those teaching distance education classes. For instance, how many classes would the faculty member be teaching if he or she has one campus site and several remote sites? A distance education course with one remote location physically reduces the number of required faculty by one. For instance, an Introduction to Business class could be offered in a regular classroom, while two remote sites would represent additional sections of the course. In essence, three sections of Introduction to Business would be taught in one time slot by one instructor. The one instructor, of course, faces an increased workload. Should extra compensation be provided in the form of course-load reduction, graduate assistant assignment, and so forth?

Issues concerning release time for developing distance education courses need to be addressed. In addition, a decision should be made regarding travel. Should the instructor teach only from the main campus or travel to remote sites to conduct classes? These decisions will of course involve additional costs and time on the instructor's part.

Administrators may want to consider developing a different evaluation scale for the distance education environment. Some departments have not even used student evaluations for distance education classes, whereas others have treated them as regular classes.

Concerns for Business Instructors

A variety of business courses have been offered through the interactive distance education network. They include Principles of Marketing, Services Marketing, Professional Selling, Buyer Behavior, Strategic Marketing, Basic Accounting, Principles of Finance, Human Resources Management, Operations Management, and others. Virtually any business class could be modified for distance education.

Instructors have also used a wide variety of pedagogies that employ the distance education technology. These include lecture, seminar-style discussions, cases analyses, group presentations, individual presentations, video cases, and computer demonstrations (Case, Gutknecht, Pickett, & Wilson, 1994). In each of these instances, special emphasis has to be placed on keeping students at remote sites involved in the class. The instructor must regularly remind students that they are in a "live" classroom environment. Learning the names of students at the remote sites and calling on them regularly will help alleviate this problem.

For the business instructor, there are challenges both in and out of the classroom. One area of concern involves the acceptance of the new technology as a different method of teaching by faculty members who will be teaching the classes. As suggested by Pea and Gomez (1992), the new interactive technology means a change in the teaching role of the instructor from deliverer of knowledge to facilitator of problem-solving activities. Rather than passive receivers of knowledge, students become active learners. Becoming acquainted with the multimedia nature of the classroom may place an additional burden on the instructor who is not accustomed to dealing with microphones, video equipment, and cameras.

The distance education environment forces the instructor to prepare more thoroughly for each class than he or she is accustomed to in the traditional classroom. There are no opportunities for "winging it" or entering the classroom unprepared. Rather than writing on the blackboard, the instructor must prepare written material for the document camera. Preparations for the class will require many more hours than in a traditional classroom setting. University administrators are often reluctant to grant reduced teaching loads to faculty who teach distance education classes.

Preparing the written material for the document camera can also be a challenge, as the field of the document is usually different from the normal-sized transparency. In most cases, the document (overhead) is smaller, but the font must be larger so that students can see it

on the monitors. The transparencies and overheads that are provided with many of the textbook packages cannot be used, unless they are modified to fit the television format. Thus a significant amount of time may be spent in the preparation of visuals, as well as any other media materials used in the distance education classroom.

Another source of concern is that the method of delivery relies on a highly technical system. In some cases, there may be equipment failure and "blank time" for anywhere from a minute to several hours. The instructor cannot continue the class at the originating site, as students at the remote site(s) will miss part of the class. Therefore instructors need to be flexible and possibly have some group activities available that can be implemented at all sites should the equipment fail. In all cases, instructors should prepare contingency plans.

An advantage of the distance education class is that with all of the equipment in the room, the instructor is able to use a variety of multimedia resources. Videotapes can easily be played, because most of the classrooms are set up with video/audio capability. Some professors have also been able to use a variety of software presentation packages (i.e., Power Point, Freelance Graphics) to help animate course outlines or overheads. Although these "live action" graphics can help maintain student attention, they should be used with caution. Students at the remote sites will still be looking at a 26-inch television screen, and the resolution of the picture after transmission to the remote site may not be as clear as at the transmission site. The accomplished instructor can learn to vary what the students are seeing at a remote site by ensuring that a number of different media are employed during class. In addition, ensuring that lectures are interspersed with videos, computer-generated graphics, video clips, and audiotapes, as well as different pedagogical methods (group cases, seminars, individual presentations) will help ensure an active and informative learning environment for all students.

Instructors will also have to determine how to conduct office hours for students at remote sites. If the instructor

does indeed rotate between locations, space must be available at each site for consultation with students. If, however, the instructor does not travel, remote students will need a means of communicating with the instructor. If the classroom is not being used prior to or after class, the instructor may ask that it be available for private consultations. Some students, however, may be reluctant to talk to the instructor over the distance education equipment. The instructors can also specify times when they will be available in their offices for students to telephone with questions or for consultations.

This difficulty can be partially resolved if the instructor is able to correspond with students through e-mail. A number of instructors have found it helpful to insist that students obtain an e-mail account and communicate with the instructor weekly.

Instructors will also find a challenge in conducting exams in the interactive distance education environment. The physical movement of the exams back to the instructor and then back to the students will necessitate early preparation of exams as well as rapid grading.

A major concern of instructors is whether distance education students learn as well as students in the traditional classroom. After an extensive review of comparative studies, Thomas Russell (1992, p. 2) concluded, "No matter how it is produced, how it is delivered, whether or not it is interactive, low-tech or high-tech, students learn equally well as their on-campus face-to-face counterparts even though students would rather be on campus with the instructor if that were a real choice."

Attitudes of students towards distance education, however, are not as clear as the in-class performance indicators. Ritchie and Newby (1989), in comparing the attitudes of students in a traditional setting and those in a distance education environment, found that distance education students experienced less involvement, less ability to ask questions, and less overall enjoyment. Wayland, Swift, and Wilson (1994), on the other hand, found a more positive reaction from students involved in a Principles of Marketing distance education environment. A majority of the dis-

tance education students reported that they were glad they had taken the distance education class and would take another course by distance education. In addition, many of the students reported that their attitudes toward distance education as an alternative improved as the course progressed.

Distance education instructors may receive lower-than-average teaching evaluations. In many cases, instructors who are asked to pioneer the technology may be the best and most effective business teachers. However, students may criticize the technique by criticizing the instructor. For the instructors, receiving mediocre teaching evaluations may prove to be frustrating. Instructors should work with their department administrators in determining an acceptable method of evaluating their teaching performance in the distance education classroom.

Business instructors may have to develop a television personality. Realizing that many students are viewing a "talking head," the instructor may have to "liven up" his or her lecture and use more interactive techniques than usual. Comeaux (1995) found that instructors who used a sense of humor in dealing with technical nuances, used a relaxed interpersonal style, and directly involved students in the course content were perceived as more successful.

One final note: Developing a distance education program may require that the instructor rethink the traditional classroom setting and re-create the curriculum (Kinnaman, 1995). A challenge to instructors will be to develop techniques that focus on the intellectual engagement, participation, and progress of the individual student in a stimulating and imaginative environment for student learning.

Conclusion

Distance education via interactive television will realize increased growth in the future as an alternative to the traditional methods of business education. Business departments and educators need to determine the role they will play in this new teaching technology.

Although there are some concerns on the part of business instructors as well

as business department administrators regarding the effectiveness of this type of education delivery, many universities are beginning to offer an increasing number of distance education classes. As Doucette (1993, p. 22) stated, "... distance learning using independent learning systems and networking technologies to facilitate student-to-student and student-to-teacher interaction in a virtual classroom is the inevitable future of higher education. ..."

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