

Common Research Questions

Because distance education is perceived as an increasingly effective method of instruction, educational researchers have examined the purposes and situations for which distance education is best suited. Frequently asked questions cluster in five areas:

- Is technology-assisted, distant teaching as effective as traditional face-to-face teaching?
- What factors determine the most effective mix of technology in a given distant teaching situation?
- What are the characteristics of effective distant students and teachers?
- How important is teacher-student and student-student interaction in the distance education process and in what form(s) can this interaction most effectively take place?
- What cost factors should be considered when planning or implementing distance education programs and how are those costs offset by benefits to the learner?

Distance vs. Traditional Education

Research indicates that the instructional format itself (e.g., interactive video vs. videotape vs. "live" instructor) has little effect on student achievement as long as the delivery technology is appropriate to the content being offered and all participants have access to the same technology. Other conclusions drawn from this line of research suggest:

- Achievement on various tests administered by course instructors tends to be higher for distant as opposed to traditional students (Souder, 1993), yet no significant difference in positive attitudes toward course material is apparent between distant and traditional education (Martin & Rainey, 1993).
- Conventional instruction is perceived to be better organized and more clearly presented than distance education (Egan, et al., 1991).
- The organization and reflection needed to effectively teach at a distance often improves an instructor's traditional teaching.
- Future research should focus on the critical factor in determining student achievement: the design of instruction itself (Whittington, 1987).

Why are Students Successful?

Research suggests distant students bring basic characteristics to their learning experience which influence their success in coursework. Distance education students:

- Are voluntarily seeking further education.
- Have post-secondary education goals with expectations for higher grades (Schlosser & Anderson, 1994).
- Are highly motivated and self-disciplined.
- Are older.

Studies also conclude that similar factors determine successful learning whether the students are distant or traditional. These factors include:

- Willingness to initiate calls to instructors for assistance.
- Possessing a more serious attitude toward the courses.
- Employment in a field where career advances can be readily "achieved through academic upgrading in a distance education environment" (Ross & Powell, 1990).
- Previous completion of a college degree (Bernt & Bugbee, 1993).

Why is Instruction Successful?

Good distance teaching practices are fundamentally identical to good traditional teaching practices and "those factors which influence good instruction may be generally universal across different environments and populations." (Wilkes & Burnham, 1991). Because distance education and its technologies require extensive planning and preparation, distance educators must consider the following in order to improve their effectiveness (Schlosser & Anderson, 1994):

- Extensive pre-planning and formative evaluation is necessary. Teachers cannot "wing it". Distance learners value instructors who are well prepared and organized (Egan, et al., 1991).
- Learners benefit significantly from a well-designed syllabus and presentation outlines (Egan, et al., 1991). Structured note taking, using tools such as interactive study guides, and the use of visuals and graphics as part of the syllabus and presentation outlines contribute to student understanding of the course. However, these visuals must be tailored to the characteristics of the medium and to the characteristics of the students.
- Teachers must be properly trained both in the use of equipment and in those techniques proven effective in the distance education environment. Learners get more from the courses when the instructor seems comfortable with the technology, maintains eye contact with the camera, repeats questions, and possesses a sense of humor (Egan, et al., 1991).

How Important is Interaction?

Many distant learners require support and guidance to make the most of their distance learning experiences (Threlkeld & Brzoska, 1994). This support typically takes the form of some combination of student-instructor and student-student interaction.

Research findings on the need for interaction have produced some important guidelines for

instructors organizing courses for distant students:

- ❑ Learners value timely feedback regarding course assignments, exams, and projects (Egan, et al., 1991).
- ❑ Learners benefit significantly from their involvement in small learning groups. These groups provide support and encouragement along with extra feedback on course assignments. Most importantly, the groups foster the feeling that if help is needed it is readily available.
- ❑ Learners are more motivated if they are in frequent contact with the instructor. More structured contact might be utilized as a motivational tool (Coldeway, et al., 1980).
- ❑ Utilization of on-site facilitators who develop a personal rapport with students and who are familiar with equipment and other course materials increases student satisfaction with courses (Burge & Howard, 1990).
- ❑ The use of technologies such as fax machines, computers, and telephones can also provide learner support and interaction opportunities.

Cost vs. Benefits

When establishing a distance education program, one of the first things considered is the cost of the system. Several cost components factor into the design of a distance education system (Threlkeld & Brzoska, 1994):

- ❑ Technology - hardware (e.g., videotape players, cameras) and software (e.g., computer programs).
- ❑ Transmission - the on-going expense of leasing transmission access (e.g., T-1, satellite, microwave).
- ❑ Maintenance - repairing and updating equipment.
- ❑ Infrastructure - the foundational network and telecommunications infrastructure located at the originating and receiving campuses.
- ❑ Production - technological and personnel support required to develop and adapt teaching materials.
- ❑ Support - miscellaneous expenses needed to ensure the system works successfully including administrative costs, registration, advising/counseling, local support costs, facilities, and overhead costs.
- ❑ Personnel - to staff all functions previously described.

Although the costs of offering distance education courses may be high, there are high costs associated with offering conventional courses. Benefits of distance education courses to the learner include (Ludlow, 1994):

- ❑ Accessible training to students in rural areas.
- ❑ Students may complete their course of study without suffering the loss of salary due to relocation.
- ❑ Students are exposed to the expertise of the most qualified faculty.

Perhaps the question institutions must answer is whether it is part of their mission as educators to offer programs to those who might not be reached without distance education. The primary benefit to educational institutions through distance education may be the increased number of non-traditional students they are able to attract and serve. Re-

search also suggests that as programs become more efficient, program costs should decrease (Ludlow, 1994).

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