

Distance Learning

Distance Learning's Impact on Deaf Students in Postsecondary Environments

Distance learning is the separation of teacher and student by time and space. Rapid advances in communications technology have allowed distance learning to become one of the fastest-growing trends in higher education. College courses are being delivered across a highway that is global in scope. Today, two thirds of the 4,000 accredited colleges and universities are offering some form of distance learning opportunities to students. By 2003, it is estimated that more than 90% of all higher education institutions will be in the distance learning business. This dramatic increase in distance learning provides an opportunity for students to participate in academic offerings not available in their area. For deaf students, this phenomenon is both a benefit and challenge. Issues of equity remain problematic in many of these new environments. Will deaf/hard-of-hearing students have the same opportunity to compete successfully in these courses as their hearing peers? How accessible will distance learning courses be to deaf students? What does it mean for a distance learning facility to be "accessible"? Do colleges or universities have a responsibility to ensure that the courses they offer at a distance meet the same standard of accessibility as the courses held on their campuses?

ADA and Distance Learning

Under the Americans with Disabilities Act (ADA) of 1990, private and public schools must ensure that their programs and services are accessible and usable for individuals with disabilities. This applies to the facilities in which the programs are held and the manner in which they are delivered. For a distance learning program, compliance means that the public facilities at the sending and receiving ends must be accessible. The ADA does not mandate that distance learning programs be provided, but where they are offered, the accessibility requirements are no less stringent than for the standard educational programs.

For example, a deaf student who requires an American Sign Language interpreter is entitled to the

same accommodation if he or she is taking the course at a remote location. In a distance learning program, however, the support may originate at either end of the system; the interpreter does not need to be in the same room as the student. If captioning services are required for a deaf student to be successful, then the services of a CART or C-Print® captionist need to be secured, and the technology necessary to deliver that support should be in place. Deaf and hard-of-hearing students who rely on speechreading, sign language interpreters, captioning, or infrared assistive listening devices also must have adequate lines of sight and appropriate lighting. Whether within the classroom or when viewed on screen at a remote location, these students must have an unobstructed view of the lecturer as well as other students who may ask questions. Where computers are to be used at each seat in the classroom, desktop models with full size monitors may present obstacles to lines of sight. Portable infrared computers or laptops may be a better option.

Common Distance Learning Technologies

Satellite Technology

This transmission system is based on a satellite dish connected to a communication system that accesses the world outside state borders using C and Ku band frequencies. Through a satellite "downlink," courses or events from other locations with satellite equipment can be brought into an area and then retransmitted through another communication system. A satellite "uplink" allows programming to be sent to other locations outside the state.

Compressed Video

Compressed video allows for two-way video conferencing among multiple points. The system is designated as compressed since the video signal is digitized for transmission at a compressed rate that results in a "near full motion video." Sign language requires a higher quality video than normally produced by video compression. MPEG-2 is an excellent standard to deliver American Sign Language.

Instructional Television

Based on a broadcast model, this method offers two-way interactive audio and video. Depending on the telecommunication infrastructure within the state, there are additional technology possibilities. Signals can be broadcast over the air using ITFS (Instructional Television Fixed Station) frequencies with audio transmitted via telephone lines.

Fiber Conferencing

Fiber optic circuits that connect campuses are used for two-way video conferences. This allows for interactive courses or meetings among participants at any site with broadcast rooms.

Asynchronous Transfer Mode (ATM)

ATM is a high-band network that carries full motion voice, video, and data. Using MPEG-2 video compression via ATM switches, an architecture is created that allows sufficient speed for digitized video signals to travel through circuits interlaced with data streams. The system offers two-way video that can be compressed at various rates, typically at higher speeds and with greater broadcast quality than compressed video.

Computer-Based Instruction

Faculty and students using Internet 1 and 2 protocols and the World Wide Web can connect through a network of Internet connections. Using PC-based technology, desktop video sessions can be established point to point with quality that correlates with the sophistication of the computers as well as the network connections speed. Internet2 K20 is an initiative that collaborates with a variety of educational institutions, including K-12 programs.

An Access Friendly Distance Learning Model

Designing an accessible distance learning model requires the same careful planning that is used for any successful educational program or space. Design

professionals, deaf and hard-of-hearing students and administrators, and governing bodies responsible for funding must work together on decisions that impact building a telecommunications infrastructure that is accessible to everyone. As distance learning classrooms grow in number and scope, design professionals, facilities management personnel, and university administrators will continue to refine how they are delivered, while making it easier for everyone to use.

Universities need to establish policies that place a high value on universal access and design, assuring that all computers, telephones, fax machines, and messaging systems conform to specific guidelines. Finally, universities should set benchmarks for improving access and monitor progress regularly. While no single plan will meet the needs of all those with disabilities, full access to distance learning programs for all students can be achieved with careful planning and long-range vision.

Web Sites to Learn More About Distance Learning and Access in Postsecondary Settings

1. www.mainecite.org
2. www.usdla.org
3. www.washington.edu/doi
4. www.w3.org
5. <http://bobby.watchfire.com/bobby/html>
6. www.dln.org
7. www.usdoj.gov/crt/ada/cguide.htm
8. www.cast.org
9. <http://ncam.wgbh.org>
10. www.webaim.org
11. www.adaptenv.org/neada/index.php
12. <http://barrierfree.ca>
13. www.access-board.gov
14. www.acb.org/accessible-formats.html
15. www.polycom.com
16. www.mimio.com

For more information, contact:

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