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ABSTRACT

This paper discusses techniques and strategies to improve the effectiveness of distance education delivered via interactive video telecommunication. Advantages and disadvantages of three types of interactive video--telephone linkage, end-to-end fiber optic digital transmission, and satellite broadcasts--are briefly discussed. Prebroadcast activities include scheduling use of broadcast facilities, clarifying costs and set-up time, arranging technical assistance, announcing the broadcast, distributing information packets and worksheets, and materials preparation. Planning time for distance learning equals two classroom preps. Broadcast practices include establishing ground rules, demonstrating use of equipment, and acting naturally. Everything takes longer over distance education, so the instructor must slow down and be patient. Allow one-third to one-half of class time for participant interaction. Eighty per cent of a message is nonverbal, so facial expressions and body language should be positive. Three strategies that prompt group participation are "pair and share," an instant review worksheet, and a problems and solutions chart. For effective postbroadcast follow-up, mail promised materials as soon as possible, grade papers and comment on assignment before the next broadcast, respond to questions by mail or phone to let questioners know they were heard, and evaluate after each session and use participants' input for the next broadcast. Two successful distance education programs in rural Montana are described: a 2-year master's degree in curriculum and instruction, and professional training to implement inclusive education for special needs students. (TD)

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A HORSE OF A DIFFERENT COLOR
DISTANCE EDUCATION; MAKING IT EFFECTIVE

INTRODUCTION

Distance education is a horse of a different color. It is still education, but it does not make a good teacher better, nor can it make a poor teacher adequate. It does call for specific strategies to make it a more viable option for the delivery of pre- and in-service training opportunities for educators and others in the field of disabilities. It is a new tool that benefits from the use of techniques both on camera and off.

Distance education takes many forms. In a sense, colleges and universities have always provided education to individuals who do not have ready access to a campus through the format of correspondence courses. Today many technologies exist that that can deliver information and provide vital interactive links among individuals who work in the field of disabilities. Telecommunications forms include: satellite broadcasts, CD ROM access to data base on ERIC, electronic bulletin boards, fiber optic and telephone line delivery of teleconferences around a topic (Miller, Hull, & Nelson, 1991). In rural areas, these systems of delivery for training opportunities is doubly important. Issues of geographic distance and professional isolation render individuals incapable of maintaining skills in rapidly changing fields. A shortage of specialists to provide the training opportunities is coupled with the difficulty of finding time and resources to support individuals to travel to campus sites for instruction (Wallace & Weatherman, 1995). For the purposes of this article, distance education will refer to interactive video presentations and courses of study delivered via interactive video telecommunication.

The actual technology used is not the focus of this article; however, it is pertinent to note some differences and issues that arise due to the choice of a telecommunication system. The three in use in many rural states are telephone linkage, end-to-end fiber optic digital transmission, and satellite broadcasts. Depending upon the system available, isolated rural communities experience a wide range of transmission quality. Telephone lines may be subject to interruptions due to bad weather. Some systems experience a time lapse, resulting in the awkward pause after a presenter speaks before the audience receives the information. This is particularly embarrassing when a presenter has just attempted to lighten a presentation with a joke! Fiber optic and satellite delivered

systems are clear and delivered in real time; however, due to cost of installation, many remote schools do not yet have access to these facilities.

A key ingredient to a successful telecommunication system in a rural state appears to be a unified initial choice of a single means of delivery. One rural midwestern state, Iowa, chose a fiber optic network in 1993. Today Iowa educators offer courses and workshops on a wide variety of topics to each of Iowa's 99 counties. Every person in Iowa is within 20 minutes of an Iowa Communications Network user site (ICN, 1993). In contrast, the state of Montana has all three systems available. The drawback is that it is cumbersome and expensive to link one type of delivery system to another. Scheduling difficulties may also present problems. Hence, staff members may have a satellite downlink in their local school library, but be forced to travel several hours to a user site in a larger town because the broadcast of a specific topic is over a different system. Given the vast geographical distances and extremes of weather and road conditions in Montana, this inability to readily access programming is unfortunate. Both states demonstrate the power of partnerships between local and state education agencies, university and college systems, and community entities.

In spite of the difficulties posed by various systems of delivery, tele-communications hold promise for drawing together individuals for the purpose of pre- and in-service training in rural states. Distance education gives access to those individuals in a rural area who have specific expertise to share. It allows paraeducators, educators, and others to access resources without leaving their local or regional neighborhood, and it allows for networking with peers. It has the potential of reducing professional isolation. It provides professional growth opportunities when college credit or state renewal units of credit are afforded. When these needs are addressed, staff retention may be positively impacted (Miller, Hull, & Nelson, 1991. p.4).

MAKING DISTANCE EDUCATION EFFECTIVE

Effective use of Distance Education can help rural areas span distances, reducing a sense of isolation in rural teachers, and can prove an economical solution for continued professional development. Resources of time and money can be conserved by bringing the students together at central sites to receive statewide broadcasts. Making these electronic classes fresh and relevant, with timely topics, keeps teachers in isolated rural communities abreast of educators in all parts of the country. Specific strategies are suggested for pre-broadcast activities, broadcast practices, and post-broadcast follow-up responses. Program evaluation is a key component to success.

PRE-BROADCAST ACTIVITIES

Whether a single day workshop or a series of semester or multi-year long course work format is chosen, careful planning is essential. There are many aspects of preparation to be followed. Issues of scheduling, announcing the availability of the training, and materials preparation and delivery all need to be considered.

The instructor is often the individual responsible for contacting the broadcasting system to set up times and dates for broadcasts. Plan on investigating potential dates as soon as possible; scheduling conflicts are common. Consider the potential body of participants. When may the majority have time for training? Confer with administrators to determine whether broadcasts during the workday or in evening or weekend time slots will reach more individuals. Clarify costs for the entire time period chosen. Some sites allow for arrival of the users 15 minutes prior to broadcast; others schedule presentations back-to-back, allowing little time to get set up before broadcast begins. Some systems provide an on-site technician who manages cameras, videos, and unforeseen emergencies while other systems expect the instructor to have received enough training prior to broadcast to perform these functions. Often, the sending site where the instructor is situated, may have a technician available while the receiving sites across a state may not have. A common situation in Montana is a collaborative use of educational networks, telemedicine networks, and a telepsychiatry network, brought together by use of a video network bridge. Understandably, this type broadcast may prove more costly than one delivered over a single network.

The instructor will need to provide clear communication with regard to the date, time, and place where the broadcast is available. Content description must be complete enough to attract potential participants. Avenues to disperse the information must be sought. Does your state have an electronic bulletin board or other readily available way to advertise training opportunities? Are there statewide publications that will fulfill this function? Do you need to prepare and disseminate flyers that announce the training opportunity? Explore the Office of Public Instruction and state Comprehensive System of Personnel Development (CSPD) structures to get the word out about training options. If yours is a college or university-sponsored course, the offices of Continuing Education or of the cooperating department may have campus-based means of advertising a course.

Finally, but most importantly, prepare the presentation itself. Have a clear idea of your purpose, the learner outcomes sought, and good teaching practices. Create a syllabus and follow it. Expect planning time for distance learning to equal two classroom preps. Take the time to develop visual aids that will enhance instruction. Consider the overheads. Use size 20 or larger type and put no more than 5 items on a page. It can be deadening for participants to sit in a far-off site, staring at a TV monitor for an hour or more; remember the interactive nature of the medium and use it to its fullest. Use of PowerPoint, slides, and video clips keep the presentation from becoming a "talking heads" session. Check for clarity of reception; fuzzy videos are unacceptable. Plan for student-led activities, cooperative learning projects that bring sites together, and assignments that promote discussion (Paulek, 1997).

Prepare and disseminate appropriate information packets, worksheets, and agendas well ahead of the broadcast date. Presenters may provide a single packet to a local group leader or facilitator for copying and distribution at the time of broadcast. Others work through an individual registration process and send a complete materials

packet to each enrolled individual. Advance preparation of team worksheets has been found to be an effective device to encourage collaboration at the various sites during broadcast time.

BROADCAST PRACTICES

Welcome each site and identify a respondent or group facilitator who will take roll, encourage active participation, and oversee use of the microphones to interact from the site. Establish ground rules for the session. For many participants, this will be an initiation into telecommunications, so a brief demonstration of use of the microphone, mention of the distracting influence of sidebar remarks, and instructions concerning such housekeeping details as handing in homework, are all in order. Agree upon set times for breaks before the formal presentation begins.

The instructor needs to be familiar with the equipment. Rustling papers, covering the microphone, failure to be aware of the camera, and checking for audio or visual difficulties, especially when showing a video, are all points to consider. Let the participants see your sense of humor. Adopt as natural a manner as possible. Remember that everything takes longer over distance education. Slow down and be patient. Check frequently with the participants to be certain instructions are understood when individual or group tasks are given.

While the expense of broadcast or "air" time may incline presenters to fill the entire time slot with information-giving, all that is known about adult learners encourages the use of 1/3 to 1/2 of the broadcast time for interaction among the participants at user sites and between user sites (Wolfe, 1993). To this end, address the entire group of participants as though it is a single class. If at all possible, plan to broadcast from each user site over the span of semester-long courses. Any efforts on the part of the instructor to visit the various sites at least once during the course will serve to draw the group together and provide the human face-to-face contact otherwise missing from distance education (Jakupcak, 1997).

Use a list of receiving sites to be certain that each site is participating. Invite them into discussions with thoughtful questions that will engage the participants. While it is a good idea to follow some routine that is consistent from session to session, be certain that you vary the activities within each hour. This is particularly true of sessions that are 3 or 4 hours in length. Employ a variety of opportunities for participants to interact with one another. Working with new information immediately after hearing it is an effective way to positively impact retention of the information and promote application of it. Use of a simple structure will often prompt greater group participation. Here are a few to try:

1. Pair and Share Strategy is a two minute technique. It asks one partner to quietly share a one minute summary of the main idea just presented, then for the

second person to add details for one minute. A variation is for the second person to imagine an application of the main idea in a specific work situation.

2. PMI is a worksheet with 3 columns headed Positive, Minus, and Interesting. In groups of 3 or 4, participants spend a brief time reviewing information just presented and listing it under one of the three headings.

3. Problems-Solutions is a T-chart with 2 columns, one headed Problems, the second , Solutions. Small groups list problems encountered at their local work site and then choose a solution to try from the information just presented.

A word about non-verbal communication is in order. Eighty per cent of a message is non-verbal; stay positive with regard to facial expressions. Smile, nod, then transition with words: I see what you mean. Have you thought of it in this way? Keep your body language positive. It can be disheartening for a student to be responding from one site only to see the camera come back on an instructor whose facial or body language indicates that attention was wandering.

Have a means to call a group back to order after a work session or discussion period. Some instructors have done this with flair, using musical instruments or children's toys that produce a pleasant, distinctive sound. Others clap or use voice to reconvene the larger group. Advance notice about the method being used will save time during the broadcast.

The final point for an effective broadcast is to evaluate after each session and to use the participant input for the next broadcast. If the distance education format is long-term, such as a semester or more in length, also evaluate the entire educational program. Consider mechanics of the broadcast, participants' comfort, and amenities at the facility as well as the content and means of presenting information. If the instruction is a series of workshops, make evaluation comments available to participants before the following session and mention the changes made in response to suggestions. Instructor response bridges the distance that is part and parcel of telecommunication. Acknowledgment is a powerful tool with all learners, but especially with adult learners.

POST-BROADCAST FOLLOW-UP

The excitement of the broadcast is over. The technician signals that the time has expired and the instructor gathers materials and leaves the broadcast site. The work is not over, though. Time after a single broadcast or between two or more sessions, presents an opportunity to forge a closer bond that shortens the distance in Distance Education. Mail promised materials as soon as possible. Grade papers and comment on assignments before the next broadcast. A response to a question posed on-air may be answered by mailing an appropriate article to that participant, a phoned response lets a questioner know that he or she was heard, and there is time for reflection on the part of the instructor before the next broadcast.

Read and use evaluation comments. This is the primary avenue of communication between presenter and participant; it deserves careful consideration. Even when the situation mentioned is beyond the control of the instructor, e.g., the roads were icy, or the seats in the user site are hard. These comments serve to bind a group together and can become a source of humor and familiarity. Acknowledgment lets participants know that they have been heard. Response indicates concern for them.

Planning for the next session begins. Based on what the instructor has learned from evaluation feedback, continuous improvement can be built in. Make the needed adjustments to the next presentation and repeat the cycle. As one educator remarked after his first course via telecommunications, "You will never again work this hard or enjoy teaching as much!"

TWO SUCCESSFUL PROGRAMS IN A RURAL STATE

Montana Cohort Program is a two-year Master's Degree in Curriculum and Instruction offered through The University of Montana, Missoula, Montana. Its first efforts involved a group of 30 graduate level students from Helena, Montana who were interested in earning a Masters of Education Degree. All were actively teaching and did not feel that they had the time to travel the 120 miles to Missoula to attend courses on campus. The School of Education's Department of Curriculum and Instruction was solicited by the cohort student group to provide the coursework using an intra-state Metnet service via a telephone system that linked a Missoula classroom to a classroom at the Helena College of Technology. Students attended one six-hour evening per week for two fall and two spring semesters and an intensive 4-week block during the intervening summer. Unique features of this program included:

1. Enrollment as a cohort group with all students enrolling at the same time and taking the same sequence of coursework;

2. Periodic on-site visitation to supplement the regular distance learning sessions;

3. Utilization of e-mail as a source of communication between students and faculty;

4. Access to electronic library resources via a statewide library network linking university and state governmental resources (Helena is state capitol of Montana).

The success of the Montana Distance Learning Master's Degree Program was due to the following factors:

1. The students were highly motivated; indeed, they solicited the delivery of the program at their local site;

2. The students were seasoned professionals who developed a sense of camaraderie and group identity over the two years they shared classes, a cadre of professors, comprehensive examinations, and a novel learning experience (novel for students *and* faculty);

3. Faculty volunteered for this teaching assignment and could choose the assignment as part of their regular teaching load or as an over-load duty;

4. Technical support was available during each session. Lightning strikes and snowstorms provided some "off-camera" glitches, but these were typically overcome in a matter of minutes;

5. A sense of pioneering effort characterized the connection between students and faculty. This served as a bond to promote the learning community that was geographically separated;

6. Use of a variety of teaching strategies including traditional video, overheads, guest speakers, collaborative projects and assignments that were based upon actual school and student problems maintained interest and involvement;

7. A stance of informality combined with a recognition of the technical barriers that might have disrupted dialogue and visual displays developed a sense of shared responsibility for the success of each class meeting and for the success of the class over the semester (Jakupcak, 1997).

Plans are underway for the Montana Cohort Program to expand its efforts to other sites around the state.

The second project, Montana Training for Inclusive Education (TIE) is a federally-funded project in its fourth year of a five-year grant period. It brings together 9 or 10 teams of 6 or more persons each year to receive training in and develop a strategic plan for implementing inclusive education for students with identified special education needs. To date, 47 teams have been trained. These teams represent a cross-section of Montana schools, from large city districts such as Billings, to tiny districts with only one special educator serving students K-12 in towns like Ekalaka. Team membership must include an administrator, a general educator, a special educator, a paraeducator, a related service provider, and a parent of a child with a disability.

The annual plan for TIE Training begins with a two-day, face-to-face conference in a central location. This serves as a kick-off for the involvement of school teams. They network with other teams from across the state, learn about the goals and objectives for their two-year commitment to TIE, and begin teaming activities. Following initial trainging, they meet once per month for five one-day Distance Learning broadcasts at their nearest user site on the Metnet System. By the fifth broadcast, each team has developed a strategic action plan for implementing more inclusive practices at their local

site. During the second year of the program each team has access to a small financial stipend and to an inclusion consultant for support. This program has been highly successful in effecting school change. Some of the reasons for its success are:

1. The make-up of the local team and attention to site-specific problems;

2. The attention to issues of communication, team-building exercises, and conflict resolution;

3. The use of former teams as mentors to new teams and as resources within their own local buildings;

4. The use of presenters with national, state, and local information and insights;

5. The provision of a cadre of trained inclusion consultants, one of whom attaches to a specific team each year, guiding them through the change process and facilitating each Metnet broadcast on site; and

6. The use of on-going formative and summative evaluation measures to ensure constant improvement of the program.

CONCLUSION

Distance education is a horse of a different color. It has the potential to increase training and networking opportunities in rural states. It may decrease the sense of isolation among rural special educators and direct service personnel. It may have a positive impact on retention of persons in needed areas. It is evident that the principles of good educational practice remain in effect when using telecommunication. Specific attempts to personalize the delivery of new information and to foster the learning and subsequent use of that information must be utilized. Distance education is here to stay; how well it is implemented will determine whether this becomes one of the stronger "horses" in our stable of pre-service and in-service delivery modes.

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