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Director of ACSDE and Editor of AJDE: Dr. Michael G. Moore.
DEOSNEWS Editor: Dr. Melody M. Thompson

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EDITORIAL

Today's increasingly powerful and flexible telecommunications technologies offer numerous delivery options for businesses seeking cost-effective ways of providing effective employee training. In this issue of DEOSNEWS, author Harry Fetterman presents a framework for evaluating the appropriateness of videoconferencing for training in business contexts.

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VIDEOCONFERENCING TRAINING: ASSESSMENT OF APPLICABILITY

Harry E. Fetterman, Instructional Technology and Training Effectiveness Evaluation
Susquehanna Steam Electric Station
Pennsylvania Power and Light Company
hef103@psu.edu

INTRODUCTION

Often attempts at training via technology fail due to insufficient or inappropriate assessment of business and training needs. Each technology comes with its own price tag, works very well for specific purposes, and has limitations. Since videoconferencing training is a relatively new technology, little has been written or taught to help determine when this technology is the right medium to deliver a class or series of classes. This article proposes a framework for assessing the viability of videoconferencing training in business settings.

After a training need has been identified, trainers must wear two hats when they make decisions about how to deliver the appropriate training intervention. Under their andragogy (effective teaching of adults) hat they must search for the best instructional methodology to fulfill the business need for training, and under their business hat they must meet the business need cost effectively.

For the purposes of this assessment framework we will define videoconferencing as a system which employs synchronous two way video and two way audio for group settings. No single method of instructional delivery, whether it be computer based training, video tape, satellite transmissions, mass lecture, one-on-one instruction, or any other method best meets the needs of all training interventions. The most appropriate means of delivery is dependent upon the complex environment that surrounds each intervention. We will look at several factors to consider when selecting, or rejecting, videoconferencing as the instructional medium for a given course. As we proceed, keep in mind how this assessment applies to your business applications and environment.

IS VIDEOCONFERENCED TRAINING APPROPRIATE FOR THE COURSE YOU'RE GOING TO DELIVER?

Rossett (1987, p.107) says, "Once we understand the organization or structure of a subject matter, research provides us with guidance on how to teach it." Today's human resource development (HRD) specialists should have the skills to analyze the best method(s) to use to deliver valid training content, but with the newness of many technologies, most HRD specialists do not.

Professional development for trainers on using videoconferencing is a hidden cost that you may not have expected. Unless told otherwise, some trainers and managers may think they can effectively use exactly the same techniques for videoconferencing that they used in the traditional classroom. To enhance the chances for successful training experiences at all locations, trainers need to learn new techniques to improve their presentations with the new media (Horn, 1994).

Many courses that would be deliverable in a classroom can be effectively videoconferenced. Hands-on laboratory sessions are note a good choice unless the distant site is only required to view demonstrations. Also, courses requiring much physical movement are not good selections for compressed video transmission.

Timing and time are key issues in assessing whether to videoconference a course. Timing refers to the organizational need to have new information and training distributed promptly. Videoconferencing allows that to happen. Developing and delivering training sessions on new processes, just-in-time, using this technology is relatively easy when compared with the amount of time required to develop computer based training or the logistics necessary to up-link to a satellite.

The timing element of feedback from the trainer to the student is maximized using videoconferencing. Students and trainer are face-to-face, even at a distance, which offers students the opportunity to interact with the trainer and other students during class time. Students are not left without a person to talk to when a problem or question arises. If interaction between students and between trainer and students is important, videoconferencing has the advantage over any other existing technological means for transmitting courses at a distance.

The component of time needs to be assessed in several areas:

- Has the same content been used for classroom training before? Do trainers or developers already have adequate skills to develop classroom training material? Designing and developing training material for videoconferencing is a modified version of what trainers and developers are accustomed to for classroom training. This is quite unlike the special skills necessary for developing computer based training. While classroom or videoconferencing training development may range from 10 to 40 hours per hour of training, computer based training development estimates are 200 to 500 hours per hour of training.

- Is the content subject to frequent change? If so, the training material that is being videoconferenced is relatively easy to change to match. When compared to changing computer based training

material, reshooting videotape presentations, or rewriting self-study workbooks, reformatting a training session for a live videoconference presentation is much less time intensive.

- How long are the class sessions going to be? If the classroom version of a course is eight hours long, it is generally difficult to keep an audience's attention for the duration. This is compounded for the distant site(s), who are watching a video screen all day.

- Videoconferencing is best used for a portion of the day's training, supplemented by a few other techniques, such as
* print based materials
* oral questioning
* written quizzes
* small group activities
* role plays
* case study analyses
* on-the-job training
* performance objectives

- Can the course be shortened? Ideally, the course, when designed or redesigned for videoconferencing, will make use of several techniques such as those mentioned above, to reduce the amount of class time. Another way to accomplish this is to maximize students' responsibility for their own learning. The cost benefits of training are best illustrated when students receive effective instruction in less time. Key factors in that statement are "effective instruction" --students must receive all information necessary to optimally perform their jobs--and "less time"; time saved in training is multiplied by the number of students.

One final issue to be dealt with in this discussion of the fit between the course and the medium is "Will there be a written test?" Proctoring becomes a logistic concern, although not an insurmountable one, if using videoconferencing. Options of how to administer the test at a distant site include:
- second instructor at that location
- supervisory person administering the exam
- qualified test proctor
- instructor at transmitting site observing via videoconference system

To make the best use of resources, the individuals mentioned in the first three options would only need to be present during the administration of the test, not for the entire training session. The last option is feasible if your organization has a strong academic honesty policy and the trainer follows through all steps at the distant site that are performed in the near classroom with the watchful eye of the camera.

IS VIDEOCONFERENCED TRAINING APPROPRIATE FOR THE ORGANIZATION?

Is the volume of training or the business need for training at a distance sufficient to warrant a videoconferencing system? One of the primary considerations to analyze is the extent to which distance is involved in your organization's training strategy. How many of the students are distant from the trainer's location? Is the equipment available to the trainer and close enough to the trainer's location, at

least closer than the distant site that needs the training?

In the business world, by necessity, we continually look at the question "What will it cost?" The bottom line return on investment is what determines a company's success or failure. Schwier and Misanchuk (1993, p. 148) recommend the principle of reduction: "the simplest, least expensive combination of media available to address the problem." In the case of videoconferencing, the initial outlay for equipment is quite high, and the cost of telephone line transmission is not negligible. It will cost approximately $30 per hour for toll calls and a monthly line fee of roughly $100. The greatest cost justification comes about through repetitious savings of student and instructor hours. How many times have we sent instructors or students on a four-hour round trip to attend a half-day training session? How many times have we sent instructors or students away for days at a time for training seminars? It takes just a few of these road trips to start seeing thousands of dollars spent for unproductive time, or saved by using videoconferencing technology.

Your company may have other technologies to facilitate the course(s) to be taught. To maintain our best business sense, we must consider the alternative methods that may already be in place for delivering the material. For instance, does the company already have systems to provide any of the following?
- computer-based training
- computer mediated communication
- local area network
- wide area network
- closed circuit television
- satellite down-link capabilities
- satellite up-link capabilities

Keeping an open mind, your organization should also consider simpler approaches that do not include any technology. Is it feasible to distribute the training content on paper as a required reading assignment? Another approach that is often very effective is structured On-the-Job Training (OJT). If OJT can be accomplished in a timely manner, subject-matter experts in the field may be the best medium to transmit knowledge, skills, or attitudes to the intended audience. If an alternative method effectively accomplishes the objective, don't complicate the training mission unnecessarily with technology.

DOES YOUR COMPANY HAVE VIDEOCONFERENCING EQUIPMENT?

If your business plans include use of this technology, an affirmative answer will facilitate your company's getting there. Having a videoconferencing system dedicated to training purposes is even better. A dedicated system is a statement of your company's commitment to investing in human resource development.

If your company has a videoconferencing system, and if it is available to you for training purposes, that may be just as useful. However, your company may have purchased the system for Board Room and meeting use. If you have to vie for time on it, the logistics become more complex. Business meetings may conflict and take higher priority than training sessions. Another indicator of your company's commitment to the importance of training is illustrated by the allocation of time on the corporate system for training purposes.

Is the room right? Corporate videoconference systems are often set up in board rooms. These settings are often inappropriate for a training session due to space limitations. However, for general lecture and discussion portions of the training session, a board room, or U-shaped seating arrangement is probably ideal. Preferably, the _training_ videoconference room will have enough space for 20 or more students. The room should also allow space for conducting other classroom activities such as demonstrations, presentations, and small group break-out sessions. If both the student population and the room size match, using the videoconferencing board room for training is a great place to start.

CAN YOU COST JUSTIFY VIDEOCONFERENCING EQUIPMENT FOR TRAINING?

If your company does not yet have the equipment, and you have to start with the cost justification, the time and effort expended prior to implementation is greater. Initial outlay for a videoconference system could run anywhere from around $10,000 for a small desk-top system to well over $100,000 for a sophisticated, customized classroom system. In 1995 moderate systems with two monitors, document camera, and a user-friendly control panel cost approximately $65,000. As is the case with many electronic devices, the technology is constantly improving and the costs are declining.

Background data that you should gather to help analyze and justify the costs include:
- travel and expenses for instructors
- travel and expenses for students
- time lost by students and instructors while traveling to and from training
- number of training sessions saved by having the instructor give the training session only once to two or more sites at the same time
- the immediacy by which just-in-time training can be disseminated to several distant sites using videoconferencing
- benefits to be realized by videoconferencing the training from a vendor or collaborative effort rather than costs involved in developing your own subject matter expert and associated training material

Another way to get started is to rent time on a system. Many corporations or universities have videoconference rooms set up that are not used all the time. An estimated price for an hour of videoconference room time is $300. Using one of these systems on a trial basis can help your company prove, or disprove, the value of videoconferencing training for your applications.

SUMMARY

The information presented here can help trainers in business make informed decisions about the use of videoconferencing for meeting training needs. These decisions should be based on the principles of teaching adults (andragogy) and on information about the specific business context in which the training will occur. Attention to both elements will contribute to effective training at a distance.

REFERENCES

Dubois, D. D. (1993). _Competency-based Performance Improvement: A Strategy for Organizational Change_. Amherst, MA: HRD Press.

Horn, D. (1994, October). Distance education: Is interactivity compromised? _Performance and Instruction_ 33(9), 12-15.

Rossett, A. (1987). _Training Needs Assessment_. Englewood Cliffs, NJ: Educational Technology Publications.

Schwier, R. A. & Misanchuk, E. R. (1993). _Interactive Multimedia Instruction_. Englewood Cliffs, NJ: Educational Technology Publications.

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Top of Page