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Introduction

Company X is a large corporation that is paid by clients in government and industry to conduct audits of clinical trial sites throughout the United States. Most staff telecommute, including Project Managers who work with clients and Clinical Research Associates (CRAs) who work with site staff and Principal Investigators (PIs). For every employee, knowing the rules of clinical trial conduct is as important as having people skills. Face-to-face training is preferred but this is often not possible. The training target audience is traveling CRAs and to a lesser extent Project Managers. Any training method used must also bring CRAs closer to the company as a whole, which may reduce turnover that is currently high at Company X.

The company has a three-week long, initial in person training session at headquarters; this has proven to only cover the basics, is costly, and is too long a period for many CRAs to be away from their friends and families which has reduced information retention. Video is a "broadcast, or one-to-many, technology that is good for information transmission" (Bates & Poole, 2003, p.54). The training needs of this organization are best met using Video and Distance Education, and a yearly in-person meeting to exchange experiences.

Analysis

The SECTIONS model helps in choosing appropriate media and technology for a particular course in a particular context (Bates & Poole, 2003). Student section covers what is known about students and appropriateness of a technology for a particular group or age range of students. Ease of use and reliability prove how easy the technology is for teachers and students to use and how reliable and well tested the technology may be. Costs relate to cost structure of each technology. Teaching and learning section addresses the kinds of learning that are needed and the best technologies for supporting them. The types of interaction a technology enables are

important. Organizational issues include necessary changes to be made in an organization in order to support a technology. And lastly, the speed by which courses can be mounted using technology and how quickly materials may be updated are considered in the SECTIONS model.

Students

Students at Company X are working professionals with varying degrees of experience. Their jobs as Quality Assurance auditors require regulatory knowledge as related to conduct of clinical trials as well as diplomatically pointing out issues that require action. Their jobs require travel, sophisticated computer skills when traveling or in their home office, and writing comprehensive reports for clients. Each CRA spends time in review of records and text that strain the eyes so any additional reading is a burden. A CRA is home-based and decentralized, often not seeing their co-workers in person for several months at a time. All factors point to video, transmitted via computer network, as the ideal training tool. Video reduces the strain of reading text, and can allow CRAs to see colleagues and trainers, and feel closer with them. Lastly, all CRAs hold at least a Bachelor's degree and have developed successful study skills meaning that a program delivered entirely by technology at a distance is likely to be attractive (Bates & Poole, 2003).

Ease of Use and Reliability

Since video is a means to an end (enhanced training and better job performance), it is important that students and teachers not spend a great deal of time learning how to use video (Bates & Poole, 2003). Basic computer skills such as the ability to use a keyboard and mouse are required for distance learners to use video (2003). It is also important that video is "reliable and robust" (Bates & Poole, 2003, p.90). Viewing short to medium length video learning modules using company-issued laptops does not pose a challenge. Since each CRA is required to have

high-speed internet access in their home office and be able to use WiFi on the road, viewing digital video content is easy, and with proper preparations from the IT dept. at Company X, should be reliable as well.

Costs

The primary factors that drive cost are the production of materials, the delivery of materials, and the number of students. Production of technology-based materials such as a video program is a fixed cost that is not influenced by how many students are in each course (Bates & Poole, 2003). The anticipated use of video in Company X's training is to present factual materials as well as case studies that demonstrate people skills. It is ideal that senior CRAs within the company are able to participate as clinical trial subject experts as part of their current mentoring duties. A small amount of outside experts may be used in early preparations of videos to ensure videos are comprehensive in their scope. Since the costs of such videos are not a pass-through expense to clients, it is important that videos are planned in advance, and use the most experienced staff as narrators so that Company X can have the most return on investment. Video cameras, lighting, and video editing software are additional expenses. The company's existing IT infrastructure may be used for distribution of videos at no additional cost. Each employee is logged in via VPN when working and it is possible to automate delivery of newly available or pre-selected video content to a learner's computer overnight so that the bandwidth load on Company X's network resources may be balanced.

Teaching and Learning

Video is "likely to be a particularly useful medium in this context for presenting cases" (Bates & Poole, 2003, p.96). In less than ideal circumstances CRAs learn the lessons of the job by going through various first-time scenarios that they encounter on the job. It would be

wonderful to prepare roll-playing scenarios with one person acting as CRA, one as a site's coordinator, and one as a site's Principal Investigator. Various short to medium length videos may cover different cases like how to interact with a coordinator that is too sloppy, how to interact with a PI that does not understand they are working their coordinator too hard, or perhaps video case studies on how to spot fraud in clinical research. All are opportunities for new CRAs to prepare for problems that they may encounter later. Video can be used to illustrate principles involving change, to substitute for a field visit, or to demonstrate decision-making processes (Bates & Poole, 2003). Video is also more effective than print for demonstrating complex experimental design (2003) which means the complex structures of clinical trials may be more easily explained and understood by using video.

Interactivity

If there is one major trend in teaching in higher education today it is the move toward more "learner-centered teaching" (Bates & Poole, 2003, p.43). Persistent group workspaces can be used for real-time interaction with other learners in the company (Good, 2006). Or, one of web presentation tools could be used to distribute value-added video to each CRA based on the CRA's needs and interactions with the system. This is broadcasting that can now meet individual needs by using available technology (Good, 2006). This allows for a modular video source book that each employee may use to advance his or her career (Carey & Gleason, 2006). Video is engaging and invites interaction. An engaged learner feels as though he or she is part of the learning process and as a result is more likely to be intrinsically motivated. More importantly, engagement with learning material may continue after the course is over (Bates & Poole, 2003) meaning each learner may refer back to available videos as needed.

Organizational Issues

It is necessary that Company X's leaders understand the potential of video in training its CRAs. It is important that management realize that visuals in distance education help communicate abstract concepts better when compared to the face-to-face method of communicating the same concepts (Porto, 2004). And that Flash video and audio are most useful and can be recycled (2004). A video producer understands the potential and limitations of video and the most effective way to design and produce video materials. It is essential that management also realize the importance of planning and input in terms of instructional design of video (2004) so that the project management model of course development may be effectively used to produce videos. A project manager, a team of subject experts, and video producers may work with a timeline to realize their vision of the appropriate video-based training materials (Bates & Poole, 2003, p.143).

Novelty

Video is a technology that is essential to media learning and its creation, distribution, and management (Good, 2006). Mobile technologies allow storage and display of high definition video for review at any time. The multi-touch screen of the iPhone for instance allow for interaction with video (Apple, 2007). Apple, long favored by educators, has been investing in multi-touch LED screens that can break from mice and keyboards to allow unprecedented interaction with digital content including video. All of these are novel aspects of video that allow professional results without an entire TV studio. This novelty allows decision makers in Company X's distance training group to be excited about supporting video (Bates & Poole, 2003). Such sophisticated training methods may even be used to advertise the company as tech-savvy and attract new talent.

Speed

Digital video clips with audio can be incorporated within “most learning resource management systems” (Bates & Poole, 2003, p.261). Video can be shot or digitized from tape and edited quickly to the desired format while a well-designed template may make it easy for a web programmer to load materials and format each page quickly (2003). Harvard Business School offers some of its courses aimed at executives via video streaming. Video’s unique characteristics should be exploited. While longer videos may be produced and stored on learner computers, “short video clips made quickly and placed in content with additional learning materials are also useful” (2003, p.194). Faster connections will allow for “video to be streamed with increasing resolution and clarity” (2003, p.257). It is important to be selective and strategic in the use of video and if possible “to find and use existing material” (2003, p.194).

Conclusion

Company X’s CRAs and Project Managers must have excellent interpersonal skills in addition to knowing the rules of conduct in the field of clinical trials. Video is a powerful medium for capturing and holding attention and for conveying impressions. Because of its capability to show people interacting, video is a good medium for teaching interpersonal skills (Moore & Kearsley, 2005). Many large corporations “provide much of their employee and customer training in the form of videotape materials” (2005, p.77). The current generation of digital audio and video software has made it possible for more trainers to design and distribute learning objects inexpensively, similar to the impact that desktop publishing had on printed text (2005). It is essential that upper management realizes the potential of video and supports its production, distribution, and use by CRAs and Project Managers, so clients may be served by highly knowledgeable staff no matter where they work.

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