Incorporating Web Conferencing into Online Training

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ABSTRACT

Many companies are making the switch from instructor-lead training to computer-based or web-based training in order to reduce costs. This move saves companies expenses in travel, lodging, classroom space and employee time. But this transition comes with a cost; the quality of having a mentor to encourage and interact with students.

Companies are trying to bridge this gap by providing their online courses with facilitation. A facilitator can monitor student progress and provide email feedback. But even this is proving to be not enough in some cases. There still remains a disconnect between the teacher and the students. They are missing the personal communication from teacher to student and between students. Corporate education has taken the next step and is blending their online courses with web conferencing.

This paper will examine the benefits and the drawbacks of web conferencing, and evaluate if it is beneficial overall. It will include a case study of NCR Corporation's use of web conferencing in their learning department.

LITERATURE REVIEW

Problems with Online Training

There are advantages to online courses in addition to those already mentioned. Better prepared students don't have to sit in class while concepts they already know are being discussed. This asynchronous form of training allows students to learn anytime and anyplace.

Most online courses were originally instructor lead courses that were later converted to online, but problems occurred when they tried to replicate the face-to-face experience. Interactive online course activities are reported as less effective than similar activities performed in the classroom (Coffey, 2010). Online courses often are heavily weighted toward text-based instruction which can be discouraging for students (Rao, Eady & Edelen-Smith, 2011). Students report feeling isolated and wishing for better contact with the instructor. It also increases the problem of plagiarism and test questions are easily copied or shared (Coffey, 2010).

Coffey reported several side effects to online training (2010).

- Significantly lower final grades

- Lower amount of students advancing to the next class

- Higher dropout rates than the instructor lead training counterpart

Adding Web Conferencing to Online Classes

Many online classes can be enhanced by adding web conferencing. By doing so, asynchronous classes are combined with material and training at times convenient for synchronous instruction. Synchronous systems, used in conjunction with asynchronous tools, can enhance the interaction and create a sense of connectedness, which helps to create an online learning community (Rao, Eady & Edelen-Smith, 2011).

For instructors wanting to move an instructor-lead course online, they find it is easier to develop an online course with web conferencing than to migrate to a fully online course (Coffey, 2010).

Web Conferencing for Instructor Presentations

There are two terms associated with web conferencing; webcasts (one-way broadcasts) and webinars (a presentation, lecture, workshop or seminar with limited audience interaction).

Webcasts may be good for company reports, but bad for training. Straight lecture without audience participation will cause remote learners to lose interest (Lietzau & Mann, 2009).

In webinars, instructors can provide a live narration for the presentation and use multimedia resources in addition to text. The instructor can provide interaction, immediate feedback and discussions with student questions and comments, contributing to the learning experience. Webinar sessions can also increase interaction by conducting polls with the students (Montgomery, 2010). Students like this blended approach to course

delivery, part face-to-face and part online (Coffey, 2010).

Sessions can be recorded so students don't have to borrow a fellow student's notes. This provides a better means of dealing with missed classes (Coffey, 2010).

Web Conferencing for Student Collaboration

Besides using web conferencing for instructors to deliver webinars, students can use web conferencing to collaborate. It is a good way to introduce students to each other, to provide a support system and a sense of community. Students who have some computer skills tend to help those who are newer to technology (Rao, Eady & Edelen-Smith, 2011). These informal discussions help students feel less alone in the learning process (Rao, Eady & Edelen-Smith, 2011). Student collaboration tends to be in one of three forms; higher-level constructive discussions, progressive discussions and lower-level social discussions (Jarvela & Hakkinen 2002).

When compared to instructor-lead training, student-centered activities result in a shift of learning responsibility from the teacher to the students. Collaboration under a student-centered learning design results in greater rates of student discourse, greater rates of student activity, and more student-directed learning (Bower, 2009).

Benefits

Students and faculty both consider web conferencing as an enhancement to learning in the online environment.

Lietzau & Mann found that web conferencing slightly increased students' motivation, confidence, and ability (2009). These systems provide a comfort level that eases anxiety (Lietzau & Mann, 2009), allowing more

students to participate in discussions (because students can choose to participate anonymously) and post their messages when they were ready, without feeling any time pressure (Angeli, Valanides & Bonk, 2003). It is also comfortable for students who spend much of their time online to have these virtual connections with other students (Montgomery, 2010). With web conferencing, teachers can provide needed emotional support to their students (Jarvela & Hakkinen 2002).

Many students enjoy the synchronous sessions; equating it to a social classroom (Lietzau & Mann, 2009; Kang & Lundeberg, 2010) which develops a sense of community among students (Coffey, 2010) and an inquiry-based learning environment (Angeli, Valanides & Bonk, 2003). Web conferences promote dialogue and discussion, and student perspectives are weighted equally (Rao, Eady & Edelen-Smith, 2011).

In this environment, instructors can address problems many students are likely to encounter and ask, benefiting every student in the discussion and creating a deeper understanding of the material (Coffey, 2010; Lietzau & Mann, 2009).

Web conferencing benefits distance students who can only participate in online only classrooms due to their location (Lietzau & Mann, 2009). As a side effect, sessions with students from other places may prepare students for a future position requiring global collaboration (Coffey, 2010). Students benefited in developing relationships with students of other cultures and this experience can influence the students' global perspective (Sugar & Bonk, 1995).

Fletcher and Tobias claim people learn more effectively from words and pictures than from words alone (2005). Presenting information in either visual mode and/or auditory mode can lead to more effective learning than text alone

(Low & Sweller, 2005). People have the ability for dual-processing of visual and auditory information simultaneously (Pavio, 1986). Audio used in small group situations enabled easier coordination of activity because students could contribute to the whiteboard or note pods concurrently with the discussions (Bower, 2011).

Instructors found they could use web conferencing sessions similar to an office visit, with the possibility of counseling and mentoring students. Virtual office hours may be an improvement over traditional office hours as more courses go online and students spend less time on-campus (Coffey, 2010)

Much of the research of web conferencing came from internet conferencing logs which served as the primary data source. This tracking enabled better teacher assessment and remediation, and teachers gained better insight into the progress the students were making (Bower, 2011; Coffey, 2010).

Drawbacks

Researchers did find some negatives with web conferencing. For many systems it is the cost associated with it, for both software and faculty time. Much of the software is expensive to license and maintain (Coffey, 2010).

For students going from an asynchronous class to a synchronous class, scheduling became a problem. It is difficult to get a single time that is good for every student. Instructors also find the time required to support online courses to be time-consuming in that the time required providing this service to students is significant. (Coffey, 2010)

Sessions that were not well facilitated found students' interest starting to diminish over time. Their initial interest and engagement began to fail after the first few weeks. In these

cases, students considered their participation as a requirement for passing the course, and it had no added value in their learning (Angeli, Valanides & Bonk, 2003).

A lack of technical knowledge is a factor for some students. In the student-centered approach, not understanding how to collaborate effectively using the technology leads to unnecessary technology-based discussion (Bower, 2009). Even some instructors require in-depth training in both the use of the software and teaching in the virtual environment (Lietzau & Mann, 2009). Common technical problems for student and instructors are with audio and the Internet connection (Lietzau & Mann, 2009).

Web conferencing is found to work best with graduate students and in corporate education which often requires critical thinking (Angeli, Valanides & Bonk, 2003). Researchers found that some student groups are limited to the amount of information they can process at any one time (van Merriënboer & Ayres, 2005). For attitude based courses, growing evidence demonstrates that web-based communication is not conducive to theory-based reflections (Jarvela & Hakkinen 2002).

Web Conferencing Platforms

When choosing a web conferencing system, it is important to select the one that best fits your needs. You should consider the number of attendees per session, the need for recording capabilities, video compression and streaming, cost and other features. There are many vendors to choose from.

Common Elements in Web Conferencing Software

Web conferencing systems are all different, but there are some common features that many of them share. This includes:

- Able to display documents and PowerPoints
- Share applications or the entire desktop of a computer
- Broadcast webcam and voice
- Text-chat (simultaneous sharing information)
- Note pods (organizing textual information among multiple users where sequencing, editing, copying, and deletion are required)
- Exchange files
- Collaboratively draw on whiteboard
- Voting tools
- Capacity to be recorded

CASE STUDY

NCR has used web conferencing for many years. They started by using their own in house product called NCR RoundTable in 1998. Since then they have used WebEx and now Saba Centra (bundled with the Saba LMS). They use a diagnostic tool called BrowserHawk to check students' browser configuration to make sure it is compatible with the web conferencing tool. The following is a list of the benefits and drawbacks as reported by NCR University (C. Kahler & K. Back, personal communication, 2011).

POSITIVES (Dependent on specific tool)

- "Classroom" like interface having all of the convenience of web-based learning with the benefits of ILT interaction.
- Allows for learner participation using interaction tools such as:
  - o Polling
  - o Quizzes
  - o Raising hand
  - o Yes/No indicators

- o Mark-up tools
- o Controlling a remote PC or application
- o Breakout rooms
- o Chat feature
- o Emoticons

- Technology allows for use of a webcam enhancing the live feel of the session.

- Cost effective - No travel expenses or lost time due to long flights and commutes

- Able to reach a diverse audience all over the world with a single learning event

- Instructor can be located anywhere

- Less lead time required in advance of the event because logistics are much less complex than ILT. (No room to book, no travel arrangements, no equipment to reserve, etc.)

- Events can be recorded and used as reference material or for viewing by participants who were not available to attend the original session

- Integration with existing conference call bridge to capture all audio from the presenter and attendees.

- Voice Over IP (VoIP) Capabilities

- Can be used as a rapid WBT course development tool (Recording Studio) for application demonstrations and simple presentations. Much less complex than Captivate or Presenter.

NEGATIVES (Dependent on specific tool)

- Technical challenges for users as they join

- Challenges with LMS integration

- Recording/Editing tools can be complex (not intuitive)

- Higher dependency on technology increases vulnerability. If the network is down or the virtual classroom tool isn't working, there is no work around. The session must be rescheduled.

- Content limitations for presenters (file sizes that can be uploaded into tool, limited streaming media capabilities, low screen resolution within the tool, etc.)

- Could require extra resources such as "facilitators" familiar with the tool to serve as support on each session.

- It can be difficult to keep the attention of the participants if the instructor doesn't focus on engaging the audience. This comes natural for instructors in a traditional classroom because being in front of a room of people is a constant reminder that you're "on stage." However, in a virtual classroom, it is easy to let presentation skills lag a bit since the feeling of being "on the spot" isn't nearly as strong.

- Instructor cannot use the audience reaction to gauge the pacing of the program.

- More challenging instructional design to make the session engaging. Lecture with PowerPoint slides for 30 minutes can make it very difficult for the participants to remain focused. More activities and interaction must be built into the content of the session.

- Seat count limitations

- Too many attendees reduces quality of session (issues with background noise, attendees talking at the same time, more technical issues due to bandwidth and user challenges)

- The technology can handle a very high number of participants, so the business finds it tempting to hold events with hundreds of participants. This degrades the quality of the event.

- Temptation to multi-task while attending the session, which can lower knowledge retention.

- Loss of face-to-face interaction between instructor and participants

- Participants don't always follow the rules of phone etiquette and that causes distractions.

NCR's Webinar Check List (K. Back, personal communication, 2011)

Prior to the session:

- Consider adjusting teleconference settings to turn off any 'beeps' or noises that might indicate a person has joined the conference call line or dropped, if the facilitator/presenter feels this might be distracting.

- Ensure the presenter/facilitator has administrative access to manually mute phone lines if needed through any conference call tools.

- Ask the presenter/facilitator to hold a "Dry Run" session to test their audio and content to ensure it will work well with the tool. Work out any issues prior to the live session.

- Limit the session to 50 attendees or less. This helps reduce audio issues, bandwidth issues and general ease of interaction with attendees during the session.

- Ensure all attendees receive proper troubleshooting guides/preparation instructions at least a few days prior to the event. This helps reduce a number of technical issues during the day of the live session.

- Always have a "back up" plan for any attendees that cannot get into the session.

- During the day of the live session, ask the presenter/facilitators to join at least 20 minutes early so they are fully prepared in the webinar tool and ready to present prior to attendees joining.

During the live session:

- Ask attendees to place their phones on "Mute."

- Ask attendees to fully utilize the webinar tools to interact during the session and demonstrate them at the beginning of the session (raise hand, applaud, etc.).

- In the very beginning, have the presenter/facilitator announce the process through which they prefer questions to be asked. For example, some presenters encourage questions throughout, some prefer to wait until the end to gather questions, and some prefer that questions only be submitted through the "chat" tool versus interrupting during the session.

- Announce a contact name of someone who may be emailed during the session if anyone is having trouble joining (since they are often still on the phone line). This way the contact may field questions and reply without interrupting the session and the session can still get started on time.

Things that Have Helped Enhance NCR's Webinar Experience

- Provide job aids aside from the default system documentation to help presenters, attendees and facilitators understand how to use the tool. Quick Reference Guides work best, and allow presenters to print off a one page document to have right next to them the day of the session as a reminder of what they need to do to get up and running quickly.

- Hold a serious of live sessions to train the learning team members on the interface. Record those sessions to create web based training for anyone new to the tool.

- Prior to setting up a webinar, work with the requestor to fully understand their needs. Sometimes a virtual class webinar is not really what they need. For example, sometimes a group would just like to hold a "virtual meeting" and want to be able to track attendance. In this case, refer them to the internal "Meetingplace" interface.

- To avoid any obstacles with presenters/facilitators during the live session or afterward, explain the limitations of the tool (seat limits, recording and editing functionality, limitations of the tool itself in regards to what types of content can be shared during the session, quizzes/polling limitations, etc.).

CONCLUSION

It would be foolish to think web conferencing is an equal substitute for face-to-face interaction. A great deal of personal information is conveyed by tone of voice, facial expressions and appearance, which may not transfer well through the webcam.

Switching from face-to-face to web conferencing requires planning and preparation. To create a learning project in web-based conferencing it is good to develop a pedagogical practice to enhance higher-level networked communication and make use of theoretical and expert knowledge (Jarvela & Hakkinen 2002). The use of global networks and computers for intellectual communication will enhance and expand human connections, communication, and create a sense of community (Bonk & King, 1998; Brown & Campione, 1996; Harasim, 1993). Web-based environments tend to be more task-oriented and contain less personal content than in immediate social interaction (Krauss & Fussell, 1990).

For web conferencing to be successful you must think about three factors; the application,

the presenter and the students. The tool alone neither supports nor hinders high-level interaction; it is the users who make the difference (Jarvela & Hakkinen 2002). When a synchronous web conference is combined with an asynchronous component, students benefit from a highly interactive virtual environment (Coffey, 2010).

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