STRATEGIES TO INTEGRATE WEB VIDEOCONFERENCING SOFTWARE INTO AN ONLINE COUNSELOR EDUCATION COURSE

By

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ABSTRACT

This article outlines how a web based video conferencing system (Marratech) was used in a graduate online counselor education course as part of a blended online graduate degree in Counseling. Since the course is open to students from around North America, a variety of e-delivery methods of instruction is significant to the program's success. A rationale for using web conferencing will be presented followed by details on how to integrate web videoconferencing into an online course. Recommendations on using this e-learning tool in online courses are also provided.

Key Words: Web conferencing, Web videoconferencing, Marratech, Online courses, Counselor Education.

INTRODUCTION

With the advance of broadband networks using high-speed transmissions, gone are the days where groups of students are huddled in windowless, darkened classrooms to interact with another group of students at a different site using television transmitted or telephone conference technology. Using this form of conferencing to visually communicate with each other was often "chunky" or delayed and poor sound quality was often the norm. Further, audio and video were frequently not synchronized as they are being transmitted separately. Today, thanks to the availability of powerful desktops/laptops, easy-to-install web cams, and the rapid distribution of cost effective, high-speed internet with broadband technology, "the richness of videoconferencing [is] to a much closer approximation of natural communication, is creating opportunities for more creative uses for the medium" (Smyth, 2005, p. 805).

It is this medium, web videoconferencing, will be demonstrated through this paper, and how it was integrated into an online graduate counsellor education course is explained. The paper will first focus on defining web conferencing systems followed by a rationale for using it in online delivered courses. Thereafter, information on how to select and integrate web conferencing into online courses will be presented using a graduate counsellor education foundational course as an example. Particular attention will be paid to the role and recommendations that IT staff can offer so the merger and use of the conferencing system during course time is uneventful for all stakeholders. In addition, reference will be made to how students and instructors should be introduced to the technology so it is used without fear or intimidation. The paper will conclude with final recommendations for using a web video conferencing system in online courses.

Definition of Web Conferencing

Working with the definitions of online conferencing provided by Angelo (2007) and Smyth (2006), this paper describes web videoconferencing in the following way: A independent desktop or laptop, loaded with specialized client software, is fitted with a small web camera to enable real-time video and audio communication (synchronous/live) with another users (usually up to 50 users) where verbal and non verbal language communication nearly resembles a face-to-face format. More specifically, simultaneous multiple streams of images (e.g.,video, audio, files) are transmitted between multiple sites through high-speed broadband internet connections.

A distinguishing feature of some web video conferencing software, such as Marratech, is application sharing. This feature enables users to see, when invited to do so, written and graphic material on each other's screens. It also

allows for collaboration and modification on a common document in real-time with all invited users providing visual and/or audio feedback to the changes. For example, "whiteboarding" is where users write, draw, or type messages to each other using a virtual whiteboard. The transmission of the whiteboard content is simultaneously transmitted to the other users while the author is composing the material on the whiteboard.

Pedagogical Rationale for Using Web Video conferencing

The advances of technology offer new opportunities for teaching, learning and supervision practices (Symth, 2005). These practices can be even further enhanced with the integration of multiple and interactive technologies, such as web video conferencing and web based platforms (e.g., Blackboard), as it allows faculty to cater to a variety of student learning styles (Boye & Hogan, 2004). This technological development is timely because of the rapid and significant growth of online course delivery in higher education (Bedi & Lange, 2007). Yet, a common criticism associated with online courses is the lack of live interaction with the instructor and fellow students (Kerr, 2007; Pattillo, 2007). Web video conferencing easily addresses this concern since all stakeholders are invited to interact in a virtual face-to-face setting.

Interaction

It has been known for quite some time that a key predictor of student satisfaction with distance education courses is the perceived high degree of interaction with students and the instructor (see Fulford & Zhang, 1993). Numerous studies, as summarized by Sutton (1999), have shown that increased levels of interaction tends to increase students' ratings that the course was meaningful. Students tend to be more pleased with their achievement in the course and identify more positive beliefs toward learning are being motivated to succeed. These results support Gunawardena's theory of social presence in the classroom, which describes intimacy and immediacy as being necessary factors to promote a positive and effective learning environment (Peterson, 2004).

This level of connection with classmates and instructors ties well with Vygotsky's teaching concept of scaffolding. This is a strategy where instructors and others, such as classmates, support a student's learning by providing temporary "support structures" to help the student reach the next learning stage (Raymond, 1999). A prime example for the need to offer scaffolding is when students, new to online learning, "have difficulty transitioning to the freedom of the distance learning format" (Boyle & Hogan, 2004, p. 232) and require extensive technological support. In terms of the latter, extensive orientation training to the technology used in the course is a must (Hillman, Willis, & Gunawardena, 1994). In addition, there is significant merit in offering students an online IT forum for them to post their technical themed questions. This type of forum, although advantageous because of its potential 24-hour availability, lacks the intimacy element addressed by Gunawardena (Peterson, 2004). Therefore, it would be advantageous to offer virtual office hours, using web videoconferencing with IT helpdesk personal hosting the forum.

The support of a Teaching Assistant (TA) can be valuable in addressing intimacy and immediacy issues in the utilization of technology in online classes. As in the Q & A IT forum, a TA could also hold virtual office hours using web videoconferencing. These real-time meetings would offer an immediate and natural connection to a leader who can guide (scaffold) the likely frustrated and/or overwhelmed student through the perceived maze of how to use technology efficiently. The technical support role of the TA would fade as the students gain competency and confidence in solving their own IT issues. For example, in the online graduate program the first writer is involved in, it is not uncommon for the TA in the program's entry level online course to spend up to 10 hours in the first week engaging in extensive "virtual" handholding with the 15-20 enrolled students. However, by the third week, a TA may spend less than half-an-hour on this type of interaction. Students are gently guided to engage in peer support and independent problem solving, such as figuring out on their own questions, such

as why Marratech is not opening for them.

Course Example: Context

The Counselling Theories and Client Change course is the entry level, 13 week foundational course in the Master of Counselling (M.C.) graduate degree applied program offered at the University of Lethbridge, Canada. The M.C. program uses WebCT as its learning platform and the majority of courses are offered online and/or in some form of a blended approach. The program usually attracts professionals, who are looking for a second career as a psychologist. Consequently, the M.C. student, compared to the traditional on campus counsellor education student, are typically older, have more life experience and seem less confident using technology. This last observation has important implications for providing IT support. More information on the program can be viewed from http://www.uleth.ca/edu/caap/

The Counselling Theories and Client Change course has been offered since the program began in 2002. The writer has taught it every year and served as course coordinator when multiple sections of it are offered. The course has undergone a series of revisions, and in 2007 web videoconferencing was carefully integrated into the course. This integration will be the focus of the rest of the paper with the overarching theme of encouraging instructors to use web videoconferencing in their courses but to take the necessary precautions so its implementation and use are successful.

Integrating Web Video Conferencing into the Course

Software options

Web videoconferencing software is available in a variety of business models. Often, the conferencing system is licensed by the vendor. In this case user group hosts the conference on their own server. The user group then distributes client software to the users to allow them access to the system. Vendor licensing fees can be on a per user, per server, or per system basis. A second possibility is the free distribution of client software. The vendor hosts the actual conference, charging a fee for the use of their servers and bandwidth. Charges can be based on the length of the conference and/or number of users. A third possibility is the distribution of server and client software through open source. This may be created by enthusiasts or corporately, with the latter charging for a support contract. To learn about the various web conferencing software options available, an informative website to consult is David Strom's (2008) webpage as he compared over 25 web conferencing projects, noting system requirements and pricing details. Another useful resource is the work of David Woolley (n.d.) who notes his webpage is an independent and objective listing of online communication tools.

A good example of web videoconferencing software is Marratech (n.d.), which is used by the institution of the first author and is hosted on a partner institution's server. According to its website, highlights of this system include: (i) the software is available for Windows, MAC OS, and Linux and it has low hardware requirements; (ii) it allows for public or private messages between users; (iii) meetings can be recorded by any participant; (iv) the connections are encrypted; (v) the server can be installed on Windows, Linux, MAC, or Solaris OS; (vi) video and voice over IP (VOIP) support, which means you can talk using the system without having to have a separate telephone connection; and (vii) virtual whiteboard is available for document collaboration.

Software selection and implementation

In order to determine the best software it will be critical to consider three perspectives: instructional, learner, and infrastructure capabilities. From an instructional perspective, three critical questions are: (i) what types of content do instructors want to deliver in real time? (e.g., PowerPoint slides? PDF Documents? Word Documents? MP3, MPG files?); (ii) how do the instructors wish to interact with their students? (e.g., Instructor led lecture? Individual Discussion groups? Instructor facilitated discussions? Whiteboard drawings, points?); and (iii) what other tools do instructors wish to utilize? (e.g., Share your desktop? Share desktop applications? Remote control workstations?).

On the learner side, factors to consider in selection of web conferencing software are ease of use and intuitiveness of navigating the features of the software. The students

are the "customer" of the system so adapting to their technical needs are paramount to a successful integration of new technology. If the web conferencing system is difficult to understand and navigate, then technology becomes the student's focus; not the course material. Having a student on the software selection committee can give invaluable input on what the "customers" would find useful and confusing about the web conferencing system.

Once input has been obtained from instructors and the learners, technical capabilities of the software need to be examined to ensure a smooth integration with the institution's IT infrastructure. Factors to be assessed by the IT staff and instructors are: (a) what server platforms are supported to ensure the software can be integrated into existing infrastructure? (b) what client operating systems are supported as the software needs to be adaptable to a wide variety of operating systems? (c) what are the bandwidth necessities for both the server and the client? There are implications on cost and availability of the required services; and (d) how many simultaneous connections are needed? This has implications for the server capacity, high speed connections, and bandwidth utilization.

In the program, the first author of the paper is affiliated with the software selection involved a faculty member, taking the lead to investigate various software options and testing them out with vendor support and soliciting instructor, technical, and support staff feedback. This process took approximately six months. After the joint decision to purchase the software Marratech, testing and implementation of the software was completed by the IT staff. This process took approximately a month and involved in software installation on the host servers. Further, firewall ports had to open to allow stakeholder access to the server.

Generally, an IT staff person takes the technical lead to become the 'expert" of the system. For software of this nature, it may be necessary to have more than one on-site consultant, so as there would be a rotation of available IT staff for support and training, particularly on the weekends when many distance education students tend to complete their online work. This IT staff usually coordinates the orientation material.

Orientation

After the first author's institution adopted the web video conferencing system, a series of brief orientation sessions for the program staff, IT helpdesk staff, and instructors were held. It was deemed important to get the support of staff and faculty, comfortably using the software. So that they would be supporters of it and spread the word as well as be mentors to future instructors who needed to learn the system. One strategy to encourage the use of the videoconferencing software was hosting a regularly scheduled meeting using the "virtual" meeting option rather than meeting in person. Once these stakeholders expressed competency in using the software, the IT staff created a short and simple "how to" handout (Powell, 2007). This handout was designed with a lot of white space and ample screen shots with inserted graphics to make it a user friendly document for faculty and students. This material was previewed by all involved in the testing phase of the software to ensure that it would serve as an effective introduction of the technology.

The orientation material to Marratech was posted in WebCT for students to access at their convenience. In addition, they were supplied with the names of the IT support staff who could be contacted if they ran into any difficulties. Additionally, some informal tips in the Q & A Technology forum was offered to students. For example, one of the tips were "the most trouble free way to enter a meeting room is to close down (quit) all your browsers (i.e., Safari, Explorer, Netscape, Firefox, etc.), then launch Marratech. Once it is launched, paste the meeting room URL directly into the Marratech URL window (near the top of the Marratech window)".

Integrating Marratech into lesson one

Before outlining how web conferencing was used in the course, it is necessary to note this technology was new to the faculty and support staff of the M.C. program, so integration proceeded cautiously and in a limited manner. The course is in progress (2008) at the time of writing, so formal comments on it are not available.

However, preliminary comments about web videoconferencing and the software from the students/instructors seem very favorable.

In lesson 1 students were gently nudged to try Marratech during the first few days of class as a part of a "get to know you" partner activity. The written directions were "Once you have a partner, choose how you will connect with each other to complete the ice breaker activity. Options include e-mail, chat room, Marratech, or over the phone. Negotiate the method that works best for the two of you" (McBride, Hope, & Luong, 2008). It was felt that an open ended invite would be best early in the course to let students know 'Marratech will be used in this course' as it might spark curiosity. The instructors were also aware of not wanting to pressure. Once the initial ice breaker activities were well underway and the students were getting a feel for the general technology (e.g., WebCT) and lesson content, students were directed to use install and use Marratech in order to complete a required activity. The directions were:

Lesson 1

Meet the Instructor in web based video conferencing program:

> *Later this week you will have an opportunity to meet your instructor "face to face" using the web based videoconferencing application, Marratech. Your instructor has posted in the "Course Announcements" forum 2 3 timings she will be available to meet students in this virtual study group-like setting. Please choose one of these timings, and post a message back to the instructor letting her know which group session you will attend. During this study group session you and your classmates will participate in a discussion of the course content with the instructor acting as a facilitator (McBride, Hope, & Luong, 2008, p. 16).*

Main assignment using Marratech

In week four, students were required to participate in a total of four Peer Consultation Groups (PCG) over a period of nine course weeks using the Marratech conferencing system (Luong, McBride, & Hope, 2008). Each group had three to four students. The overall purpose of this bi-weekly gathering was for students to explain and then debrief with each other how they applied various counselling theories to a personal problem they identified as their self-change project for the next 13 weeks (e.g., overcome public speaking fear, improve self image, decrease procrastination). The students had various roles (counsellor, summarizer of the discussion, consultant) during each PCG and each role was rotated among members. The students were instructed in the reflective consultation method based on the work of Pare (1999). They were also provided with an agenda for each PCG to ensure on task behavior. Summaries of each PCG were submitted to the instructor for review and feedback. The following was posted for the students about the role of the instructor in the PCGs:

Does the instructor join us? Your instructor or TA will make every effort to be involved in at least one of your four consultation sessions using Marratech. Once you have established your consultation schedule please forward your potential meeting dates to your instructor and TA who will notify you in advance as to which meeting (s) they will be participating in (Luong, McBride, & Hope, 2008, p. 11).

Informal strategies to integrate Marratech into the course

Instructors and students were encouraged to use Marratech in at least four additional ways: (a) host "virtual" office hours, (b) deliver a lecture and facilitate class discussion on the course content using the "virtual" class auditorium and then cancel the online theory discussion forums for the week as incentive for all to try the new technology, (c) use Marratech for small group work and consultations, and (d) encourage students to use web conferencing when seeking instantaneous feedback from their peers on the drafts of their work since Marratech allows for application sharing. Additional ways to use web conferencing can be found in an informative article by Even and Ismail (2006) and the work by Knapczyk, Frey, and Wall-Marencik (2005). In terms of the latter, the authors described the use of team exercises in online course. We recommend their activities could be easily adapted to using web conferencing to cater to those who

prefer more direct contact with their peers.

Recommendations for Integrating Web Conferencing into Online Courses

Enable software tools: Before the web conferencing presentation or discussion, the manager of the session should activate as many of the software tools available to ensure maximum productivity. For example, allow users to use the chat room, particularly when there are more five participants in a room. This tool seems to help the conference participants stay focused, since users can privately post to each other (e.g., ask a clarification question) without disrupting the large group dialogue. Thomases (2002) also suggests during formal web conferencing presentations, users post their questions in the presenter's chat room rather than interrupt the web presentation.

Establish booking procedures: To ensure availability of web videoconferencing discussion (private) rooms for small group work and that the software is being used by course participants only, have students book the "virtual" rooms in advance. In the M.C. program, an administrative assistant coordinates the room bookings and emails the URL that specifies which virtual room will be available at the students' requested time. The booking of private rooms also prevents unwanted visitors to the rooms.

Labeling the conferencing system: In the M.C. program, it has been decided to move away from naming the web conferencing system by its vendor's name, because if a new software program is decided to adopt, all the references to this name in the web assignments and web course tabs are needed to be changes. The function is labelled as "web videoconferencing".

Orientation: Similar to the suggestion made by Hillman, Frey, and Wall-Marencik (2005), it is strongly recommended that orientations to online technology are incorporated into the course; so the value of using the new technology can be directly realized by completing course assignments and lesson activities. It is relevant to note informal feedback from M.C. students suggests the necessity of having available IT support desk in the evenings and weekends during the first few weeks of using the new technology since students encountered challenges, which prevented them using the software when required to do so.

Rules of conduct: Students should be provided with a set of expectations regarding code of conduct when using the web videoconferencing system. Alternatively, have the class gather in the "virtual" course auditorium to develop a list of rules after they have reviewed sample code of conduct websites such as Netiquette Home Page (Ross, n.d.). Sample rules include, only students can participate in web conferencing; friends and family are not permitted to use the service. And, all conferencing sessions will start and end on time. If there are no shows after 15 minutes of the session to the virtual room, which impact the quality of the small group discussion, then the session is canceled and rebooked for another time. Other behavioral expectations that could be incorporated into rules of conduct are listed by Zelenka (2007) and Coyner (n.d). For example, Zelenka addresses the proper use of the mute button in her list of 27 tips of proper conduct during conferencing sessions. Coyner recommends when preparing a PPT presentation within web conferencing software, the presenter should examine both the presenter and student views before finalizing the presentation to ensure that the format is correct in both views.

Conclusion

Web videoconferencing "combines the power of a live meeting with the cost-effectiveness of a conference call" (Coyner, n.d., p 1). The amount of success of a web based video conferencing system to enable interaction between students and instructors depends on at least three factors. i) The availability of client software such as Marratech. ii) The speed of the connection between the client and server hosting the session; so users can connect with classmates in a format comparable to a traditional on campus course (Knapczyk, Frey, & Wall-Marencik, 2005) iii) The skill and flexibility of the course instructor to integrate web videoconferencing into the course design; so the students are given the option to engage in learning in an online community.

References

[1]. Angelo, J. (2007, April). Getting a bigger picture. Retrieved January 22, 2008, from http://www.universitybusiness.com/viewarticle.aspx?articleid=727&pf=1

[2]. Bedi, K., & Lange, H. (2007). The impact of faculty interaction on the learning experience and outcomes of online learners. Proceedings from Ascilite Singapore 2007. Retrieved January 22, 2008,from http://www.ascilite.org.au/conferences/singapore07/procs/bedi.pdf

[3]. Boye, J., & Hogan, M. (2004). Theory application for online learning success. Academic Exchange Quarterly, 8(4). Retrieved January 22, 2008, from http://www.rapidintellect.com/AEQweb/

[4]. Coyner, D. (n.d.). Webconferencing 101: A dozen ideas to improve your next online event. The Advisor. Retrieved January 22, 2008, from http://www.isquare.com/webconf.cfm

[5]. Even, R., & Ismail, N. (2006). Conferencing scenarios [White paper]. Retrieved from The Internet Engineering Task Force: http://www.ietf.org/rfc/rfc4597.txt

[6]. Fulford, C., & Zhang, S. (1993). Perceptions of interaction: The critical predictor in distance education. The American Journal of Distance Education, 7(3), 8-21.

[7]. Hillman, D., Willis., & Gunawardena, C. (1994). Learner-interface interaction in distance education. The American Journal of Distance Education, 8(2), 30-42.

[8]. Kerr, M. (2007). Teaching psychology online: Approaching excellence and avoiding defeat. E-xcellence in Teaching, 7. Retrieved January 22, 2008, from http://list.kennesaw.edu/archives/psychteacher.html

[9]. Knapczyk, D., Frey, T., & Wall-Marencik, W. (2005). An evaluation of web conferencing in online teacher preparation. Teacher Education and Special Education, 28(2), 114-124.

[10]. Luong, E., McBride, D., & Hope, T. (2008). CAAP 6601: Assignment 1: Self change project [course materials]. Retrieved January 4, 2008 from Campus Alberta Applied Psychology at the University of Lethbridge Web site: http://www.uleth.ca/edu/caap/

[11]. Marratech (n.d.). [Software]. Available from http://www.maratech.com/

[12]. McBride. D., Hope, T., & Luong, E. (2008). CAAP 6601: Lesson 1 overview [course materials]. Retrieved January 4, 2008 from http://www.uleth.ca/edu/caap/

[13]. Paré, A. (1999).The use of reflective teams in clinical training. Canadian Journal of Counselling, 33(4), 293-306.

[14]. Pattillo, R. (2007). Decreasing transactional distance in a web-based course. Nurse Educator, 32(3), 109-112.

[15]. Peterson, C. (2004). Making interactivity count: Best practices in video conferencing. Journal of Interactive Learning Research,15(1), 63-74.

[16]. Powell, S. (2007). Marratech: Getting started in Mac OS X. Retrieved January 28, 2008, from http://people.uleth.ca/~scott.powell/marratech/

[17]. Raymond, E. (1999). Learners with mild disabilities: A characteristics approach. Needham Heights, MA: Allyn & Bacon.

[18]. Ross, S. (n.d.). Netiquette home page. Retrieved January 6, 2008, from www.albion.com/netiquette/

[19]. Smyth, R. (2005). Broadband videoconferencing as a tool for learner-centered distance learning in higher education. British Journal of Education Technology, 36(5), 805-820.

[20]. Strom, D. (2008, January 22). Web-based conferencing services. Retrieved January 28, 2008, from www.strom.com/places/wc.html

[21]. Sutton, L. (1999). Interaction. Retrieved January 6, 2008, from http://seamonkey.ed.asu.edu/~mcisaac/emc 703 /leah5.html

[22]. Thomases, H. (2002, April 18). Web conferencing – A powerful presentation tool. Internet Marketing Strategies and Solutions. Retrieved January 6, 2008, from http://www.webadvantage.net/tip_archive.cfm?tip_id=199&&a=1

[23]. Woolley, D. (n.d.). Web conferencing review. Retrieved January 28, 2008, from http://thinkofit.com/webconf/ index.htm

[24]. Zelenka, A. (2007, January 28). 27 tips for teleconferencing. Web Worker Daily. Retrieved January 6, 2008, from http://webworkerdaily.com/2007/01/28/27-tips-for-teleconferencing/

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