

Interactive Webcasting + Audioconferencing + Media Archiving for Medical eLearning

Ron Baecker, Kelly Rankin, Peter Wolf

Knowledge Media Design Institute, University of Toronto

Poster with Software Demo Table Abstract, MEDNET 2006

Background: The standard approach to enhancing medical multimedia communications at a distance is videoconferencing [1]. Although videoconferencing ideally provides high-quality transmission of moving images and voices symmetrically among various sites, in practice it is limited to a small number of sites, is critically dependent upon having good bandwidth, and rarely incorporates effective mechanisms for archiving sessions in ways that allow flexible access to the content.

Objective: We shall present an alternative approach, the use of highly interactive webcasting with integrated conferencing and the automatic Web publishing of structured, navigable, and searchable archives. We shall articulate the pedagogical and technical issues involved in enabling effective remote participation in events transmitted in this manner.

Methods: In our poster and demonstration we shall exhibit key features of the design of our technology, which is called ePresence Interactive Media [2-5]. We shall illustrate use of the system by discussing how Computer Science graduate students and faculty from five Canadian universities used ePresence to participate in a *Computer Supported Collaborative Work course* offered at the University of Toronto during the fall semester 2005. We shall also summarize the experiences of a number of medical schools, hospitals, and medical research groups (University of Toronto, Memorial University of Newfoundland, Northern Ontario School of Medicine, Toronto Rehabilitation Institute, the Waterloo Institute for Health Informatics Research, and the Centre for Global eHealth Innovation) using the ePresence technology¹.

Results: Particular emphasis will be placed on six themes: 1) we shall report on the use of VoIP to enable voice questions and discussion periods; 2) we shall discuss how we facilitate interaction between remote webcast participants and participants at Toronto through text chat and experimental “awareness servers”; 3) we shall describe how remote students as well as those present in the lecture room also tune into the webcast and use the chat feature to communicate among themselves; 4) we shall enumerate the challenges of hosting lecturers from locations other than Toronto, which now happens increasingly often; 5) we shall review the importance of ePresence’s flexible retrospective access to archived presentation via structured, navigable, searchable archives; and 6) we shall discuss the software distribution approach which involves open source publishing and the formation of a contributing community of users.

Conclusions: Because of its scalability, resilience in the face of vagaries of Internet traffic, and ability to integrate with conference and web publishing, medical schools should increasingly consider interactive webcasting systems for eLearning and for distance education.

References:

1. North Network <http://www.northnetwork.com/>
2. Baecker, R.M. (2003). A Principled Design for Scalable Internet Visual Communications with Rich Media, Interactivity, and Structured Archives. *Proceedings of CASCON 2003*, 83-96.
3. Baecker, R.M. (2005). Open Source Strategies for Educational Multimedia, *Proceedings of ED-MEDIA 2005*, June 27-July 2, 2005, Montreal, P.Q.
4. Baecker, R.M. and Rankin, K. (2005). Open Source Webcasting and Media Archiving Software for E-learning, ACM eLearn Magazine, <http://elearnmag.org>, posted 12 October 2005.
5. Baecker, R.M., Wolf, P. and Rankin, K. (2004). The ePresence Interactive Webcasting System: Technology Overview and Current Research Issues, *Proceedings of Elearn 2004* & <http://epresence.tv>

¹ For example, Memorial University of Newfoundland Faculty of Medicine reports that it “has found ePresence to be an excellent tool for dissemination of educational presentations. Busy faculty and students in a geographically dispersed setting have traditionally found it difficult to attend educational presentations and “rounds”. ePresence realizes the potential of the Internet to economically and efficiently address faculty and student needs.”