

Final report

Teaching via videoconference/ expertise sharing

Background

In fall 2002, the first initiative of exchanging lectures between Brock University and the University of Otago, Dunedin/New Zealand, via real time videoconferencing, was tested in a lecture given by Prof. C. Michael Hall and Dr. James Higham to students of the Brock course TOUR 4F01 (Contemporary Issues in Tourism). This lecture went exceptionally well, and all faculty and staff involved agreed to further develop this innovative method for teaching. Subsequently, colleagues from Napier University in Edinburgh, Scotland, joined this project.

Dr. Michael Lück subsequently applied for a grant at the Brock University Technology Grant Competition, and received a grant over \$1,000 to further develop the videoconferencing in cooperation with Mike Laurence of CTLET (at that time ELRDL). The money was primarily used to fund a student (Christian Burnaccioni) in a research assistant position.

Progress and Results

CTLET employees Christian Burnaccioni and Matt Clare have been engaged in experimentation with multiple procedural protocols, as well as the relevant physical arrangements of several educational technologies, in order to address the varied needs arising from participation with remotely located partner institutions in both New Zealand and Scotland. Instruction originates at Brock or alternatively is received at Brock. Christian and Matt have worked to choreograph the actions of faculty members at the University of Otago, Napier University, and Brock during these sessions.

Christian's primary tasks during the first phase of this study included:

1. establish technology setups for the various instructional activities
2. familiarize faculty members and technical support personnel at all three institutions with the integration of broadband videoconferencing, data conferencing and application sharing
3. collaboration with Brock's R & D partner, Smart Technologies (Calgary) to facilitate improvements to the technologies employed (Bridgit, Conference Pilot) during the remote expertise sharing sessions
4. engage in feedback sessions with the technical support personnel at the partner institutions

During this project the following videoconferencing protocols have been developed:

1. “Single Point Control Interface” was a concept that we’ve envisioned for faculty members who use videoconferencing in WH 147. This grant provided an opportunity for collaboration between the aforementioned CTLET staff members, Dan McMahon (Smart Technologies, of Calgary), and this researcher towards the development of **ConferencePilot**, now a Smart Technologies product (note: as a result, Brock has acquired access to this product at no cost). ConferencePilot provides an easy to use interface that enables the professor to initiate and manage the entire collaboration (video, audio, data) from an interactive whiteboard.
2. Interactive White Board (presentation data) Integration was viewed as a desirable feature for videoconferencing – the capability for the lecturer and the learners to interact with text and/ or graphical interfaces in a way that both parties, although separated by distance, could view each other’s revisions while discussing their implications. This project enabled us to investigate several solutions to this interactive participation in the teaching and learning process. The most effective technology we tested, and subsequently developed – again in concert with our research partner, Smart Technologies - enabled us to bridge the “geographical gaps” between participants. **Bridgit** enables us to easily share presentation data with multiple participants in different locations, while videoconferencing (or audio conferencing) with them.

To date there have been six remote lecture events conducted between the partner institutions, as well as four training / feedback sessions. The next remote lecture is scheduled to occur on March 29th (Table 1).

In addition to the initiative of Dr. Lück, a number of videoconferences were conducted during the period of this project with several other institutions/organizations:

Primary Project-related Videoconferences

1. CANARIE, Ottawa, Canada
2. Smart Technologies, Calgary, Canada

Secondary Videoconferences (CTLET staff training using developed technologies)

1. Bethel University, St. Paul, Minnesota
2. University of British Columbia, Vancouver, BC
3. University of Calgary, Calgary, AB
4. University of Ottawa, Ottawa, ON
5. Guelph University, Guelph ON
6. University of South Carolina, Columbia, SC
7. University of Western Ontario, London, ON

Table 1: Teaching plan for Videoconference Lectures in 2003/2004

Date	Teaching Institute	Instructor	Receiving Institute	Instructor	Course
2 April 2003	University of Otago	Prof. C. Michael Hall/ Dr. James Higham	Brock University	Dr. Michael Lück	Contemporary Issues in Tourism
19 August 2003	Brock University	Dr. Michael Lück/ Dr. David Fennell	University of Otago	Dr. James Higham	Wilderness and Marine Tourism
21 October 2003	Napier University	Mrs. Elizabeth Carnegie	Brock University	Mr. Cory Kulczycki	Heritage Tourism
20 November 2003	Napier University	Mr. Martin Robertson	Brock University	Dr. Michael Lück	Tourism Industry Operations
24 February 2004	University of Otago	Dr. James Higham	Brock University	Dr. Michael Lück	Ecotourism
2 March 2004	University of Otago	Prof. C. Michael Hall	Brock University	Dr. Michael Lück	Contemporary Issues in Tourism
Planned					
29 March 2004	Brock University	Dr. Michael Lück	Napier University	Mr. Martin Robertson	International Case Studies in Tourism
25 May 2004	Brock University	Dr. Michael Lück	University of Otago	Dr. David T. Duval	Tourism Transport Management
August 2004	Brock University	Dr. Michael Lück	University of Otago	Dr. James Higham	Wilderness and Marine Tourism

The development between the initial and subsequent lectures was significant. Teaching faculty were eventually able to remotely control camera movement and Powerpoint slides visible at the remote location, a valuable progress for a less disruptive teaching. For all incoming videoconferences, participating students were asked to fill in an evaluation form (Appendix A). The evaluations were very positive, and indicated that students appreciated the respective videoconference as something new and different, but also the chance to hear from other faculty around the globe.

Challenges

Despite the success of the videoconferences, there were also some significant challenges, particularly on a pedagogic basis. We noticed the following points, and endeavor to subsequently limit or mitigate these problems.

Pedagogical Challenges

1. After the first videoconference, students noted that it would have been beneficial to have the lecture notes (handout of Powerpoint slides) in advance, so that they can prepare for class, and have questions ready. Although this was conveyed to the teaching faculty at the partner institutions, there was still a slight problem due to the time difference. Lecture material was sent to Brock in time for the videoconference, but too late in order to distribute handouts to the students. For future conferences we will contact the respective partner well in advance and encourage them to send the material as early as possible.
2. The evaluations, as well as personal conversation with students, revealed that even mature and outgoing students felt intimidated by two facts. Firstly, students felt uncomfortable being able to talk to well-known researchers. Although all faculty involved are very outgoing and “easy going”, for students it still seemed to be a barrier to actually talk to someone who is one of the best known tourism researchers in the world.
3. Adding to the previous problem is the unfamiliar situation to “talk to a camera”. Students felt intimidated and uncomfortable to talk to a microphone or camera, without having the addressed person in the same room. During the first videoconference, as a courtesy to the presenter, the camera was zooming on the student asking a question. This, however, made students extremely uncomfortable, because the picture could be seen in a small control window on the screen. We have still used the picture in picture technology in all further videoconferences; however, the control picture showed the class as a whole, and did not zoom in on a particular student.
4. Most lectures were designed in a way that the presenter first introduced himself/herself, and then gave a lecture of approximately one hour, with time for questions and discussion afterwards. The lecture of Elizabeth Carnegie was a notable exception, with lots of interaction throughout her presentation. Some student feedback suggested that listening to a lecture via videoconference is tiring if there is not interaction throughout the presentation. Thus, we will encourage future presenters to change the lecture style, and build some interaction (e.g. discussion activities) into their presentations.

Other Challenges

1. We encountered problems resulting from an inconsistency in partner university technical proficiency in videoconferencing. This caused us to revisit the nature of our preliminary test conferences, thus we developed a checklist of questions to pose to our remote partners (attached as Appendix B).
2. During a training session for CTLET staff, a legacy technology usage – ISDN – by a remote videoconference partner required the use of a “bridging” service (Los Angeles) to enable the conference between Brock and Bethel University, Minnesota.
3. Insufficient bandwidth for high quality resolution of video with remote partners resulted in occasional “freezing” of video feed, although in almost every case audio was unaltered. The solution to this problem, normally addressed in a preliminary test conference, was to hang up and redial at a lower “bit rate”.
4. Another challenge was scheduling of the videoconferences. In particular, the sessions with New Zealand are very limited in time. For those conferences, we can employ time slots only after 3pm (9am next morning in New Zealand). Since most of the classes were scheduled between 8am and 2pm, students had to come to the videoconference outside their regular class time. This proved to be a challenge for some students, because they had other classes, and sometimes even mid-term exams, scheduled during these slots. Unfortunately this challenge continues to evade easy solutions. Videoconferencing with Napier University was not as difficult, because the UK is only five hours ahead, i.e. our colleagues in Scotland can teach our morning classes during their afternoon.
5. We encountered two conditions which were seen as problems not directly related to the technology, but rather to the setting of the Smart Room (WH 147). Firstly, due to the equipment, the temperature in the room is relatively high. It is difficult for students to literally not fall asleep. The fact that the room does not have windows adds to this problem. Physical Plant has not succeeded in finding a lasting solution to this dilemma. Secondly, below the Smart Room is a lab for Physical Education, and during a few videoconferences the noise level coming from treadmill skating tests in the lab was fairly disruptive.

Budget

Through the Brock University Technology Grant, we received \$1,000 to support the development of videoconferencing as an effective teaching tool. The majority of this grant was used to fund the 25% share of the Research Assistant Christian Burnaccioni (75% of the stipend was funded through Career Services). However, the project overall was more expensive, as shown in our final budget below:

Christian Burnaccioni's time (12.50 / hour X 85 hours).....	1062.50
Matt Clare's time (22.50 / hour X 13 hours).....	292.50
Technology utilization (R & R costs) (\$20 X 46 hours).....	920.00
Long Distance Phone Charges	48.00
Total	2323.00

In addition, Mike Laurence and Michael Lück spent numerous hours for strategic meetings, preparation, and realization of the videoconferences.

Evaluations

As mentioned before, participating students of all incoming videoconferences were asked to fill in an evaluation form (Appendix A). Overall, the results were very positive and encouraging. We take these evaluations seriously, and we will keep working to remedy the problems raised by students. All evaluations can be found in Appendix C. In addition to these course evaluations, there were a number of positive comments in the regular course evaluations, mostly with the content that students would like to see more of such videoconferences, and that the videoconference was one of the strengths of that particular course.

Dissemination of Results

Currently, Mike Laurence and Michael Lück are working on articles to be submitted to peer reviewed academic journals. One will be in the field of educational technology in the publication entitled *Networks: An On-Line Journal for Teacher Research*, and one will be in the field of tourism studies, such as *Annals of Tourism Research*, *Journal of Travel Research*, or *Tourism Management*.

In addition a presentation of the results of this project will be delivered at the CTLET Open House on May 6, 2004.

The Future

Although the grant period comes to an end, we will continue working on various improvements of the videoconferencing. This includes the further integration of Smartboard, as well as screen set-up and layout for more effective work. It is also anticipated to get graduate students involved. We want to encourage students to share projects and expertise in their specific research areas, and communicate with graduate

students at the respective partner universities. Currently, access to some vital parts of this technology (for example, the Smartboard), is coming to an end. The utilization of these technologies, a time limited research partnership, is non-renewable, and Brock University will be asked to purchase the equipment. We are still waiting for a quote from the provider, and subsequently a decision from various parts of Brock University. If for whatever reason the equipment cannot be purchased, the videoconferences would be back at the old standard of just using the video camera. The integration of the Smartboard and Bridgit software was a vital part of this project. It made videoconferencing much more sophisticated and user friendly for both sides, and thus it would be very unfortunate to see this work having been in vain.

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