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7. Building Educational Partnerships through Virtual IT

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Abstract.   This paper reviews the authors' experience in creating and implementing four educational videoconferences (VCs) for a three-week English language education program in 2004, and our proposal for VCs in 2006.   The focus of this paper concerns the building of partnerships to enable the delivery of educational VCs.

The VCs were established with four presenters: a professor specializing in Telecommunications at Ball State Univ.; the Dean of the Undergraduate College at Harvard University; a specialist at NASA on "International Business Etiquette"; and a playwright at the Indiana Repertory Theatre.   The required partnerships were each developed on unique paths: building on previous contacts at a Global Media Network (GMN) Symposium at HKBU, facilitated through alumni and organizational / fundraising networks to reach high-level educational administrators, the use of online VC discussion forums to contact free US-based government resources, and the exploration of online catalogs offered by non-profit organizations devoted to the coordination and delivery of VC presentations.

The three week English language program was organized by a non-profit charitable organization, and co-hosted by HKU.   It invited volunteer Harvard students to lead small groups of disadvantaged secondary students from schools in HK and mainland China in a range of language-oriented leadership activities.   In 2006, we plan to simultaneously operate two such three-week programs, one hosted by HKU, and the other by Fudan University in Shanghai.   VC technology will be utilized to virtually import real-time educational presentations from Harvard and other top universities, and also to enable cultural exchange between the students in all three locations.   In addition, we are implementing an "Observer" status, where staff and students at other remote locations can get the VC feed one-way, and watch the language program presentations and cultural exchange interactions.

The development of symbiotic partnerships is key to the implementation of educational VC-based distance learning and cultural exchange programs.   This paper presents the methodology of a successful recent implementation, and our plans for future development of increased technology-based interaction.

1. Introduction

This paper reviews prior experiences and advances recommendations for establishing effective real time distance learning video conferencing. Methodology and criteria are covered for the development of partnerships which enable meaningful cultural exchanges between diverse cultures and organizations throughout the world. The authors review the creation and implementation of four educational video conferences (VCs) developed for the Crimson Summer Exchange (CSE) English language program conducted in 2005, and the proposed expansion into additional Asian venues in 2006.

2. The Crimson Summer Exchange

The Crimson Summer Exchange (CSE) is an innovative three week course in English usage specifically designed for Asian students. The curriculum is designed both to help students develop oral proficiency in English, and to promote cultural exchange between students all over Asia and the West. Students of Harvard University are recruited to tutor Asian secondary students in a wide variety of activities designed to promote both classroom skills and leadership training. In light of these related ends, the curriculum has four specific aims:

1) ***To solidify the foundations of English usage***
   a. Reading, writing, listening and speaking
   b. Useful vocabulary, idiomatic expressions, and pronunciation.

2) ***To improve students' practical language skills through interaction***
   a. Discuss and debate current events
   b. Practice public speaking through class presentations
   c. Interact with tourists and via video conferencing

3) ***To expand students' cultural horizons***
   a. Comparative analyses of contemporary problems
   b. Video conferencing to expose students to western educational resources

4) **To build students' confidence**
   a. Students participate in fun and engaging activities designed to help students speak up and speak out

In addition to various English language games and activities, the students work on several multi-day modules based on: song writing, newspaper discussion, design and construction, translation of a children's book, tour guide, city planning, debate, and drama.

3. CSE Video Conferences

3.1 Background

The CSE began in 2004, founded by members of the Harvard Club of Hong Kong. They recruited Harvard students to volunteer to tutor Hong Kong students in a 3 week English language program. The venue was the University of Hong Kong campus, which offered high quality teaching facilities, largely unused during the summer months.

In 2005 the authors met, and discussed the advantages of adding video conferences to the upcoming CSE program. Brant Knutzen had prior experience setting up and operating educational web-based video conferences, and as CSE Director of Communications, Dr. Orris recognized the communications benefits they could offer the program. The authors felt that the benefits of adding VCs to the CSE included:

1) Incorporation of high-quality educational resources available in the West
2) Facilitation of cultural exchange between Hong Kong students and the West
3) A high-tech "strategic difference" which would set the CSE apart from other language programs

They presented their proposal to the board members of the Crimson China Cultural Exchange Foundation (CCCEF), which is the organizing body of the CSE. The CCCEF members enthusiastically endorsed the proposal, and authorized the addition of several VCs to the CSE 2005 curriculum. Brant Knutzen was appointed to lead this effort as IT Advisor to the CSE.

3.2 Research

Before planning any video conferences, it was necessary to investigate the facilities and infrastructure available at the University of Hong Kong (HKU). The HKU Computer Centre maintains three sets of video conferencing equipment, based on the Polycom Viewstation FX. This equipment supports VCs using both ISDN digital telephone calls (H.320 standard) and IP-based (H.323). Historically the ISDN method had proved to generally yield a better quality of service than IP, but the telephone call initiator had to bear the cost of the connection, which could easily exceed USD $200 for an hour-long video

conference.   With the advent of the Internet2 infrastructure deployment at HKU, however, this bias towards ISDN is changing.

3.3 Internet2

Internet2 is a consortium being led by 207 universities working in partnership with industry and government to develop and deploy advanced network applications and technologies, accelerating the creation of tomorrow's Internet.   Internet2 is recreating the partnership among academia, industry and government that fostered today's Internet in its infancy. The primary goals of Internet2 are to:

- Create a leading edge network capability for the national research community
- Enable revolutionary Internet applications
- Ensure the rapid transfer of new network services and applications to the broader Internet community (About Internet2)

A key feature of the Internet2 is its support for the prioritization of audio and video packets, so that real-time requirements are met in regards to video conference service quality.   While ISDN guarantees a bandwidth of 384 Kbps, the Internet2 system has a top speed of 768 Kbps.

3.4 The Global Media Network

At a recent Distance Learning Symposium at the Hong Kong Baptist University, Dr. Orris had met Dr. Maria Williams-Hawkins, a leader in the telecommunications field and professor at Ball State University (BSU) in Indiana, US.   She is a proponent of the Global Media Network (GMN), a consortium of universities around the world that provides a non-traditional learning experience using digital information technology.   The primary focus of the GMN at BSU is to enable students and faculty to experience a low-cost and easy-to-access alternative to a study abroad experience.   Brant contacted Dr. Hawkins, and she agreed to do a one-hour video conference for the CSE with the topic: "The current role of videoconferencing in education, and what role will it play in the future?"   The only other implementation issue was pre-registering on the BSU Gatekeeper, in order to prioritize the VC packets on the connection bandwidth.

3.5 The Alumni Network

The summer exchange language program was originally set up in 2004 by members of the Harvard Club of Hong Kong.   In order to best organize the CSE in 2005, some of the club members founded the CCCEF.   As alumni of Harvard University, they have a network of connections which led them to Dr. Dick Gross, Dean of the undergraduate college of Harvard.   After a meeting with Michelle Chen, Chairman of the CCCEF, he was impressed enough with the program to offer his time for a one hour video conference, with the topic "The Magic of Numbers".

3.6 Discussion Forums

Web-based resources dedicated to the support of video conferencing can be vital to the identification and contact of VC content providers.   One such resource is the VTC Talk Forums, an online discussion forum designed to support video conferencing professionals. This resource supports popular discussions involving VC issues such as:

- Hardware
  - Multipoint Control Units
  - Network
  - Integration issues
  - Secure Conferencing

- Connectivity
  - ISDN (H.320)
  - IP Telephony (H.323)

- Industry News and Announcements

- Distance Learning

This resource provided links to the free VC-based educational resources provided by NASA, the US space agency:

NASA Live is a series of free videoconferencing programs designed to extend and strengthen NASA's commitment to educational excellence at the pre-college (3-12) and university levels (13-18).   The goal of this program is to make full use of NASA's aerospace technology assets to produce exciting and meaningful learning experiences for students, educators, faculty, and adult learners across the nation and the world.
(NASA Live)

Through NASA Live Brant made contact with Professor Keisha Armistead, a project manager who was available to do a one-hour VC for the CSE program titled "International Business Etiquette".

3.7 Online Catalogues

Another valuable resource for identifying VC content providers is that of online catalogues, such as the Center for Interactive Learning and Communication (CILC.org).   This non-profit organization offers numerous resources, but the most useful is a large searchable database of VC content providers, which includes user evaluations of previous VCs with each provider.   Through this service the authors located the Indiana Repertory Theatre

(IRT), which offers VCs on a range of activities involving drama, and had consistently high user evaluation ratings.   As this well supported the CSE "Page to Stage" activity of adapting a story into a play, the CCCEF booked a one hour presentation with the IRT playwright, for a nominal cost of USD $175.   The IRT uses the Indiana Higher Education Telecommunications System (IHETS) to provide the high-bandwidth IP infrastructure for their VCs.   The involvement of these additional organizations also results in additional layers of bureaucracy: users must first register with the CILC, then get IHETS to assign a project number, brick number, and IP codec number, and then use this information to fill out CILC program request.   For VC testing and production there were now additional players: the IHETS technician had to be online real time and ready to act as an "operator" to connect the CSE in Hong Kong and the IRT in the US.

3.8   Partnerships

The development of successful educational partnerships for the support of a VC implementation involves a number of factors.   After locating the proper resource, contact must be made in such a way as to correctly present the requesting organization, and the need for a VC.   In the case of the CSE, the role of the CCCEF as a non-profit charitable educational organization certainly plays a part in obtaining the consent of the consent of the VC presenter to work for free.   In addition, the presenter must perceive the relationship as a symbiotic one, where both sides benefit from the interaction.   Presenters might be motivated by an altruistic drive to "spread the word" about the continuing role of VCs in distance education, or the potential for exposure and publicity for themselves or their organizations.

Other relationships integral to the success of a VC include the administration assistants (particularly in a university environment), Directors of the Communications departments, Production and Technology Coordinators, VC studio technicians, and supervisors of the VC presenters.

3.9   CSE 2005 Implementation

After a week or so of pre-testing each VC connection at least once, we had dealt with a number of issues, including misunderstandings regarding the time difference, and some equipment configuration issues at NASA.   During the three weeks of the CSE 2005 we successfully held the four planned VCs, with very few problems.   NASA still had some quality of service issues, and their screen resolution kept jumping up and down.   This could be ignored, as the audio continuity was fairly good.   Harvard, Indiana Repertory Theatre, and BSU all went off without a hitch, and despite a few dropped connections, the overall VC quality and level of interaction was good.

CSE 2005 Video Conferences	
Students used two wireless microphones to ask questions of the VC presenters	Dean Gross of Harvard speaks to the CSE students

Student ratings of the VC impact on them was quite positive, particularly in the areas of "helps me to understand life outside of Hong Kong", and "VC was interactive":

Crimson Summer Exchange 2005 Video-Conferencing Impact on Students

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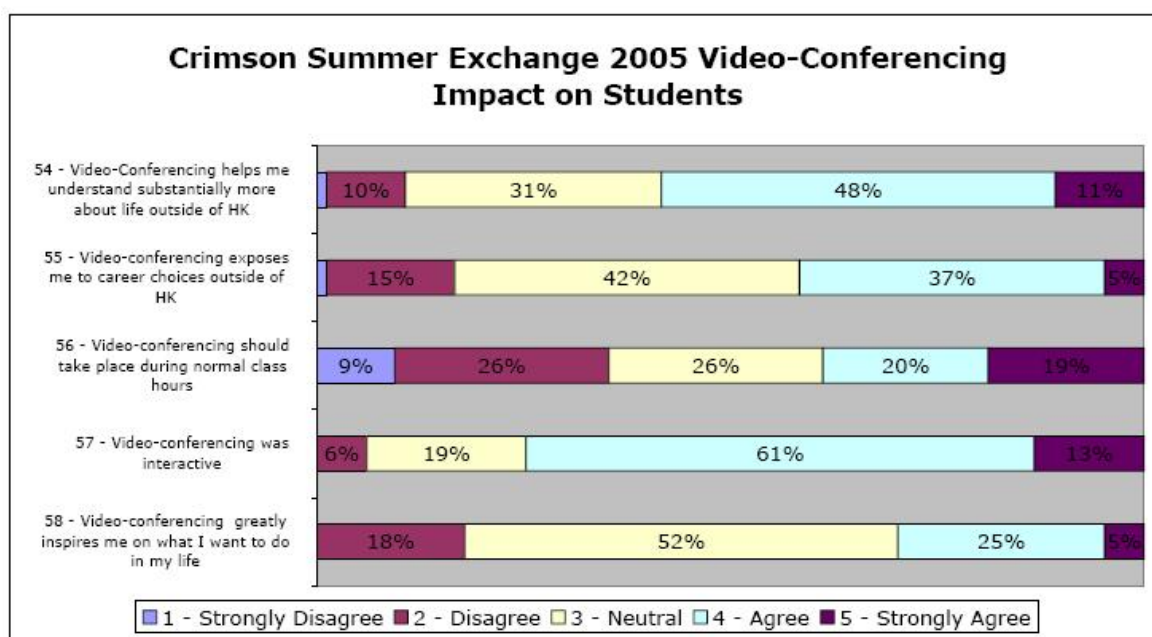
3.10 CSE 2006 Future Plans

For the CSE 2006 we plan to again host about 120 Hong Kong students in a 3 week program, held at the University of Hong Kong. In addition, the CSE will be also be held at venues in Beijing, Shanghai, Dongguan, and Wuhan. We plan to use a Multipoint Control Unit (MCU) at HKU to bridge the VC link out to these additional venues. We

may also implement a "gradient of involvement" to allow gradually increased participation in the CSE program:

Observer status: we can let interested universities just watch our CSE instructional and student presentation videoconferences, dialing into our videoconference bridge at HKU at no cost or overhead to us. They don't have to be Internet2 capable; just about any regular Internet-linked computer could do this.

Participant status: universities which are interested and are on the Internet2 grid and have videoconference capabilities, but don't have the momentum yet to do more, can join a videoconference of a student presentation.

Delegate status: a university which is very interested, but isn't quite ready to host a full CSE, can apply to the CCCEF to have a delegation of their students attend a CSE at a host city.

Host status: a university hosts a full 3-week language program, with US college scholars coming out to lead groups of disadvantaged honors secondary students from that city.

Another potential change would be to have a couple of videoconferences based on student presentations, instead of teachers. Two reasons to have student presentations: cultural exchange is the focus instead of instruction, and it is student-centric, instead of teacher-centric. A VC student presentation could be a 10 minute English-language drama skit about "Life in My City". Students in each city in the VC hookup put on a 10 minute skit, and then there would be a 10 or 15 minute Question & Answer session where the students ask questions about the skits, and the actor students answer.

4. Conclusion

The successful implementation of video conferences requires analysis of several factors:
- needs analysis to determine requirements
- technical resource identification
- identifying and finding presenters to satisfy the needs
- building a relationship with the presenter in a symbiotic manner
- implementation and management of the conferences
- evaluation of the implementation
- planning for future conferences

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