Online webcast: Computer-mediated communications tools used with teachers and students in virtual communities of practice

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Introduction

This presentation was a demonstration of webcasting utilising freely available software tools operating at normal connection speeds over low-end computers. Participants in the demonstration were members of a community of practice known as *Webheads in Action* (WiA), whose members have been sharing each other's expertise and ideas for using computer-mediated communications (CMC) tools in education in online environments ranging over the globe since the group's inception in late 2001–2002. Group members correspond continually and meet regularly online, and often collaborate with one another in each other's web-based projects, including helping each other to make presentations at international conferences and workshops where these tools are of interest to other educators. The community has around 400 members, a very small proportion of whom have ever met face-to-face. Nevertheless, WiA is a long-running, robust, and highly interactive community whose members have proven to be consistently supportive of one another and reliable in their collaborations.

Two Webheads agreed in advance to support me in this presentation. They were Michael Coghlan, a teacher-trainer in Adelaide,[1] who talked to us from a distance about the use of virtual classroom tools in e-learning environments, particularly with focus on the theme of an online conference he was preparing: Strategies for Effective Learning. The other presenter was Sergei Gridyushko from Minsk[2] who talked about Webheads participation in a recent BelNATE conference in Belarus as one example of the use of CMC tools in building communities that in turn pitch in to train other teachers in their use. Two other Webheads also dropped in during the demonstration: Susanne Nyrop speaking from Denmark, and Rita Zeinstejer who visited from Argentina.

[1] http://users.chariot.net.au/ michaelc/usingvclassrooms.htm
[2] http://www.ir.bsu.by/kel/homesergei.htm

Webcasting is all at the same time a device utilised in strengthening cohesion among members of the community, a topic of interest among participants, and a vehicle through which group members can demonstrate the fruits of their collaborations, as shown in demonstrations such as that given at the METSMaC Conference. Webheads often organise events involving webcasting. Sometimes the events are recorded and placed online. Two recordings of conference presentations made using one or more of the tools discussed here are:

- I engaged Webhead community members joining me from their respective locations at many junctures during my talk entitled 'The future is now: How CMC tools for professional development enhance learning environments for students', delivered at the CALL-IS Academic Session, March 31, 2005 at the TESOL Conference in San Antonio. The online handout for the talk is cited below[3] while the webcast recording is available at the address provided.[4]

- I gave a workshop entitled 'Blogging in online communities of practice: Impact on language learning and teacher professional development', again with participation of online participants from the Webhead community, but with me in Abu Dhabi and the workshop participants physically at the QTEN Conference in Qatar on April 30, 2005. The online handout is available at the address provided below[5] and the webcast recording is also available.[6]

As educators with limited budgets bent on exploring the use of CMC in education, WiA members volunteer their time to promote each other's, and in return, their own, professional development. Interactions among members of the group are decidedly constructivist in nature, which is to say that group members interact in a zone of proximal development where scaffolding constantly occurs, and where members contribute to each other's development while acting out of mutual self-interest. In order to level the playing field, no assumptions are made about a member's means, expertise, or background in technology. Fortunately there are numerous CMC tools available on the Internet which are freely available and intuitively easy to use. WiA members excel in helping each other optimise these free technologies for educational purposes. Community members often provide suggestions as well as tangible help to supplement the intuitions of members who need to know how to use a CMC tool and for what purpose. There is evidence to suggest that members who learn through such dynamics within the community tend to understand more fully how to apply constructivist methods in their own interactions with students, so that there is a payoff in education deriving from participation in communities of practice such as WiA.

Webheads have engaged in analysing themselves in the context of communities of practice. Etienne Wenger is perhaps the best-known proponent of the concept of

[3] http://www.homestead.com/prosites-vstevens/files/efi/papers/tesol/2005/gvs_pres.htm

[4] http://home.learningtimes.net/learningtimes?go=774660 (beginning at counter 4:27:45 on the recording)

[5] http://prosites-vstevens.homestead.com/files/efi/papers/qten2005/vancestevens2005qten.htm

[6] http://home.learningtimes.net/learningtimes?go=805285

communities of practice. In one schematic diagram he defines communities of practice (CoP) as simply '... groups of people who share a passion for something that they know how to do and who interact regularly to learn how to do it better' (Wenger, 2004a). Wenger distinguishes CoPs from other communities (a neighbourhood for example) as sharing three crucial elements: (1) a common domain of interest (like a speciality, not necessarily recognised as a domain of expertise outside the CoP), (2) a cohesion and interaction within the community (as opposed to simply shared membership in an organisation), and (3) a practice or expertise (as opposed to a common passive interest, in books or movies for example) (Wenger, 2004b). Snyder (n.d.) elaborates further on CoPs, 'What holds them together is a common sense of purpose and a real need to know what each other knows'. Snyder's page is a portal for one of many CoPs which have come together out of an interest in CoPs themselves, and these are often excellent sources of material on the topic. Within Webheads there are members who have joined in order to experience participation in a vibrant CoP while studying the topic in the course of doctoral studies; e.g. Johnson (2001; 2003).

Wenger, McDermott, and Snyder (2002) use the term 'distributed' CoPs to refer to groups whose members meet online. It so happens that the tools such groups use to affect these meetings are the very ones that teachers are interested in to promote communication among students and peers, who may or may not be distant from one another, but who find their work is facilitated by meeting over the Internet in real time.

Many Webheads participants have incorporated techniques for community building creatively in their particular blended learning situations. One is Dafne González, who, while working on her doctorate at a university in Spain, used her experience with Webheads to create her own online video-enhanced English course for architecture students in Caracas (González, 2003). A second teacher is Buthaina Alothman from Kuwait University, who compares her work before her encounters with Webheads to her more recent work, as influenced by the community of practice (Alothman, 2003). Among Buthaina's accomplishments was to have her students make their end-of-term presentations online through a voice chat portal, and to invite community members to listen to and help evaluate the presentations (Alothman, 2004). A third Webhead to apply CMC techniques to her face-to-face classes is Aiden Yeh in Taiwan. Aiden has created web pages documenting her students' work with community members, for example a meeting with Webheads songwriter Michael Coghlan, where her students listened to his songs online, then met the composer to discuss his lyrics (Yeh, n.d.). These projects are more fully detailed in Stevens (2004b, 2004c).

Webheads in Action

Webheads meet regularly online to explore ways of using the latest free communications technologies that work over the Internet for language learning and teacher training. These technologies include asynchronous tools such as blogging and synchronous ones such as text, voice, and webcam-enabled chat services (see Stevens, 2004a). Webheads have consistently introduced novice computer user teachers and students to CMC environments that are educational in nature, documented their experiences with these

tools, and used them to work collaboratively on numerous student projects (Stevens, 2004b).

Webcasting is an important aspect of the domain of knowledge addressed by WiA. In a group that comes together to learn more about CMC, communications are both an object of study and the medium of dissemination of that knowledge. In fulfilling both these goals, group members with experience in earlier communities have moved from text chat in the 1990s to avatar-enhanced three-dimensional virtual environments at the turn of the century (text and graphics), and on to voice-enhanced synchronous communications from 2000 onwards. We have emerged into an era where, while we still extensively use text chat, voice and video have become more and more trouble-free, where operating systems allow truly plug and play installment of hardware, bandwidth versus compression have combined to accommodate improved Internet delivery, and the software for interfacing the user with the person at the other end can be quickly downloaded and installed and easily understood by all parties in the communications matrix.

The remainder of this paper describes how a webcast is set up and details the free software tools used in the broadcast from the METSMaC Conference held in Abu Dhabi on April 27, 2005.

Webcast components

As the demonstration was meant to show, webcasting for free over the Internet is not technologically challenging. Components for a successful webcast include:

- interactants with a reason to meet;
- an agreed date and time to meet – it is important to provide clear instructions on how participants can access the webcast venue. Time of the event should be given in GMT. Reliable time conversions worldwide can be found at the address below;[7]
- an Internet connection available on the correct date and time – using the tools mentioned here, it does not have to be broadband; the participant at the METSMaC webcast from Minsk was using a 33.6 kbps dial-up modem;
- a shared set of CMC software running on each computer and configured for any firewalls that might be present. This is described in more detail below.

It is important with regard to the latter to test the software at the location (meaning in the room and at the computers being used for the webcast) well before the date of the actual presentation. On computers used for the METSMaC Conference we specified:

- administrator privileges on our computer in order to do installations on the fly;

[7] http://www.timeanddate.com/worldclock/fixedtime.html

- ability to use *Elluminate* voice presentation software at Learning Times[8] and the *Alado* presentation portal at the address provided below;[9]
- ability to use *Yahoo Messenger* with voice and webcam capability (you need a microphone at minimum and a webcam installed, if you have one);
- ability to use *Tapped In* text chat. This is available at the address below;[10]
- ability to project the monitor and broadcast voices to the room via speakers attached to the computer.

The set of software ready for the webcast should include, in addition to the primary presentation webcast client software:

- a stable text chat in which to meet in case of problems with the preferred location, or in case any participants have trouble reaching that location. In either event participants can fall back to the meeting point and decide how to proceed with the webcast. Often such meetings take place among individuals without others in the webcast being aware that there is any problem (or the individuals might not have a problem, but are just taking advantage of the back-channel away from the prime chat area);
- an alternative to the preferred location. In case the preferred chat site is having server problems or is inaccessible by individuals needed in the chat, it is good to have an alternate plan thought out in advance.

The ideal presentation webcast client software itself might have most of the following features (or alternatively, a combination of tools might be used in order to have available as many of these features as possible):

Access

- by anyone; no prior registration or password required;
- smallest (fastest) possible download;
- by both Macintosh and PC; friendly to a range of browsers;
- allow detection of buddies online, so participants can see when the others are logged on to the Internet.

A robust text chat that allows

- copying on the fly from the chat log and pasting elsewhere;

[8] http://www.tinyurl.com/y3eh (may require update of plug-in and installation of Sun Java)

[9] http://www.alado.net/webheads (log on with any name and no password). Installation of iVocalize may be required.

[10] http://www.tappedin.org (also requires Sun Java).

- clicking on URLs given in the chat and having these open in a browser;
- a means of 'emoting';
- viewing 'profiles' of others in the chat (by clicking on their names);
- scrolling the logs easily;
- saving a record of the chat log;
- viewing what others are writing as they type (none of the chats we use do this though ICQ used to).

A clear and lucid voice chat

- duplex (though this can cause feedback if headphones not used);
- if simplex, then a means of letting participants queue for the microphone in hands free mode;
- a way for the moderator to regain the microphone in case of inattention or misuse.

Video webcam

- cams of numerous participants viewable at once;
- a variety of broadcast quality settings depending on bandwidth.

An interactive whiteboard that allows

- text;
- pasting of pictures from the OS environment;
- grouping/ungrouping, resizing, moving images;
- paint and graphics tools;
- load-in of PowerPoint and other prepared slide objects and a means of easily changing screens during presentations;
- an option for the moderator to browse screens alone or synchronise viewing with chat participants.

Browsing

- a means of displaying URLs to everyone in the chat, usually by opening new browser windows on participants' computers;

- participants can then browse at will until the moderator forces change to a synchronised window.

Application sharing

- allows applications on the host computer to run on other computers in the session.

Screen sharing

- allows the moderator to share the entire screen or just one window on the desktop archives;

Archives

- recordings can be made that replicate the entire session exactly;
- logs of the session distributed automatically to participants.

Details of webcast software used at METSMaC

There are many free tools available that include a number of these specifications. It is not in the scope of this paper to review the pros and cons of all software that fits these criteria. Rather, I will focus on the software used during the METSMaC Conference where the demonstration took place.

Yahoo Messenger

Yahoo Messenger is an instant messenger (IM) tool that allows detection of buddies online, so participants can see when the others are logged on to the Internet. Other IMs can be used as well, and in fact participants often will monitor several at once. However, we prefer *Yahoo Messenger* because it has other features that particularly suit it to voice and webcam conferencing.

Webcasts can be done with *Yahoo Messenger*. I have broadcast presentations and seminars from conferences using only this tool. *Yahoo Messenger* allows multiple webcams to be shown while participants interact in voice-enabled conference where the number of participants is limited only by bandwidth. *Yahoo Messenger* is unique among free webcast tools in that it allows multiple interactants in both webcam and voice mode, whereas the other free instant messenger services tend to limit participants, usually to one-on-one. However, *Yahoo Messenger* is not well adapted for serious professional broadcasts. Voice quality varies, especially in conjunction with video, and the program can crash or behave erratically. Furthermore its constant demands for attention to chat windows and micro-management of webcam and conference areas can be distracting to presenters already multitasking their presentations.

Here is how *Yahoo Messenger* compares to the ideal webcast client:

Access

- requires prior registration with Yahoo system;
- small download, easily installed;
- fully featured for PC but less friendly to Mac.

A robust text chat that allows

- copying from the chat log and pasting elsewhere;
- very graphic means of 'emoting';
- viewing 'profiles' of others (but profiles are rarely filled out);
- scrolling the logs easily;
- saving a record of the chat.

Voice chat

- medium quality;
- duplex (though this can cause feedback if loud speakers are used);
- hands free mode.

Video webcam

- numerous cams are viewable at once;
- quality settings control; super mode and image size.

Tapped In

When running a webcast you need a help desk that everyone can reach. I like to use http://www.tappedin.org as a reliable anchor for online events. *Tapped In* is a free and interactive portal for a community of educators that allows both member and guest access to the Java-based text chat. Participants in our webcasts are told that if help is needed, they can go to the text chat there (log in as a guest if not a member of *Tapped In*) and someone will be on hand to assist.

Access

- by anyone; registration advantageous but guest access allowed;
- acceptably fast download;
- by both Macintosh and PC.

A robust text chat

- copying from the chat entails sending chat contents to a 'pasteboard' and pasting from there;
- clicking on URLs given in the chat opens them in a browser;
- a means of 'emoting' in text;
- 'profiles' of others in the chat can be viewed by clicking on their names. As most users are registered educators, there is often useful information of a professional nature;
- the logs can be easily scrolled;
- a record of the chat is e-mailed to registered participants.

Whiteboard allows

- text messages only.

Browsing

- is only available if participants click on URLs in chat.

Archives

- logs of session are e-mailed automatically to registered participants.

Presentation webcast client software

Webheads are fortunate to have gained the informal support of two providers of voice interactive presentation technologies: *Learning Times* and *Alado*. This support has accrued from instances of chance collaboration followed by periods of working collaborative arrangements, followed again by grants of chat rooms dedicated to supporting Webheads education-oriented webcasting sessions. Whereas certain Webhead members are granted moderator privileges, anyone is free to access the chat rooms.

Alado

The *Alado* room is at http://www.alado.net/webheads. Its software is from *Talking Communities* and its plug-in is called *iVocalize*. To enter this room you select 'Login information' at the site URL and then key any name (no password) into the chat area you wish to enter. The *Talking Communities* client provides text and voice chat with the presentation screen controlled via moderator-driven Internet browsing, so that presentation materials have to be up on the Internet somewhere. There is no means of showing a webcam, or interacting on the whiteboard, or sharing the moderator's screen, windows, or applications. However, the *iVocalize* plug-in provides consistently clear sound along with:

Access

- by anyone; no prior registration or password is required;
- acceptably small download;
- by PC; working on Macintosh but there are still problems.

A small text chat window that allows

- copying from the chat log and pasting elsewhere;
- clicking on URLs given in the chat and having these open in a browser;
- no means of 'emoting';
- scrolling the logs easily;
- saving a record of the chat in the recording.

A clear and lucid voice chat

- simplex;
- hands free mode;
- means of letting participants queue for microphone;
- way for the moderator to regain the microphone in the case of misuse.

Browsing

- the moderator can display URLs to everyone in the session via the presentation window.

Archives

- recordings can be made that replicate the entire session exactly.

Learning Times

Learning Times (LT) provides *Elluminate Live* to its registered users. The normal entry to the *Elluminate* chat room via LT is from the login screen (select 'Meeting Room' in the left-hand frame). This room is available to anyone on a casual basis. Many LT members also have rooms which registered visitors to LT can click on and access, or visitors can go directly to the desired room (after log on) if the URL is available. As an example, the Webheads *Elluminate* room is available at the address provided.[11]

[11] http://home.learningtimes.net/learningtimes?go=273662

Potential attendees are always asked to register in advance and enter the room well ahead of the presentation in order to download and install the required software.

Of the software used in this demonstration, *Elluminate* has the most comprehensive set of webcast and online presentation tools:

Access

- prior registration with LT and password required;
- fairly hefty download;
- by both Macintosh and PC, both working well.

A barely sufficient text chat that allows

- copying from the chat log and pasting elsewhere;
- a good means of 'emoting';
- scrolling the logs, but not all that easily;
- saving a record of the chat only in the final recording.

A clear and lucid voice chat

- simplex;
- hands free mode;
- a means of letting participants queue for the microphone;
- a way for the moderator to regain the microphone in the case of misuse.

Video webcam

- only one cam is viewable at a time;
- has a variety of quality settings to accommodate the available bandwidth.

The highly interactive Whiteboard accommodates

- text, paint, and graphics tools;
- pasting of images and objects from the OS environment;
- grouping/ungrouping, resizing, moving images;
- the load-in of PowerPoint and other prepared slide objects and a means of easily changing screens during presentations;

- an option for the moderator to browse screens alone or synchronise browsing with the chat participants.

Browsing

- means of displaying URLs to everyone in the chat, usually by opening new browser windows on participants' computers;
- participants can then browse at will until the moderator forces change to a synchronised window.

Application sharing

- allows applications on the host computer to run on other computers in session screen sharing;
- can share the entire screen or certain windows archives.

Archives

- recordings can be made that replicate the entire session exactly.

Running the webcast

Assuming the ingredients are all in place and working, then participants convene online, usually in advance of the appointed time. When I log onto the Internet prior to webcasting, I launch *Yahoo Messenger* and it tells me at a glance if other people I expect to meet are already online. If so, I will greet them in *Yahoo Messenger* and find out if they are in touch with other participants. As others appear online, they may do the same.

I will then go to *Tapped In* and set its chat window down the left-hand side of my screen. Then I can tell if anyone speaks in the chat and enlarge the window if anyone does. I might keep an eye on this as we are setting up, but once the session begins I find it hard to monitor this chat, so I usually designate someone in our group to remain engaged there and alert me if there is anything said there that requires my attention.

I then launch the presentation client we will use for the day and after seeing that it works, start doing sound checks with others who have also come early, get their webcams on my screen via *Yahoo* perhaps, and upload slides for the presentation if possible. As this happens just prior to webcasts, depending on how formal the occasion, there might be a discussion in process online when the session is due to begin, possibly involving participants helping each other set sound levels and make sure microphones and webcams are working, helping each other troubleshoot, or just comparing vagaries of the weather. This sometimes continues in the presence of the audience, who often have the feeling of walking in on the middle of something rather than something about

to begin. At a previous engagement I was five minutes into a demonstration when someone from the audience spoke up and asked, 'What is going on here?'

Since most of the work in webcasting is essentially done in preparation, the webcast itself generally runs smoothly. With experience, one learns to position the webcam in the vicinity of the monitor so that eyes are looking into the camera when speaking, and it is good technique to pan the audience or solicit other speakers' videos when not. Lighting is important: try facing windows rather than having brightness at your back. I try to make my webcast presentations as interactive as possible. I switch off my microphone frequently to avoid the situation of speaking when no one hears, and at those times I solicit feedback in the form of smileys or questions online. I try to get people using the whiteboard. If there is a poll feature, I try to use that.

For the METSMaC Conference, we had planned to spend the first half of the programme in *Elluminate* and the second half in the Alado portal, but one of the online participants was not able to reach *Alado*, so we ended up staying in LT the whole time. However, we did visit the *Alado* portal, but in a novel way.

One of the interesting features of *Elluminate* is the ability to select a window on your desktop and send that out to all participants online. This is a remarkable feature, allowing participants not to only browse to the same URLs the moderator is visiting, but to see the moderator scroll on the page, or work in any application window selected, for that matter.

In this case I shared a browser window with all participants in *Elluminate* and in that window I logged on to *Alado*. Once into the *Talking Communities* chat the participants in the *Elluminate* portal could see me conversing in text chat with someone there. On my own computer, I could speak to that person, and then go back to the *Elluminate* client and speak to the participants there. The online participants could not hear each other's chat sessions, but the on-site audience could see and hear everything.

Connectivity was not good over the ISDN line at the conference venue. Timeouts occurred frequently when I was sending video or trying to talk, and at other times of high demand on bandwidth. Nevertheless, we were able to get the gist of the online presentations and take questions from the audience and handle them online. One of the questions was to ask how science teachers might use these tools, and off the top of my head, I suggested an online science fair.

If the connection had remained stable, it would have been a better presentation. We are perhaps pushing the limits of what we can get for free, but it is always encouraging to experience how the Webheads community pulls together to assist with professional development.

Conclusion

This paper has shown how webcasting can be implemented over the Internet using freely downloadable tools, especially with the help of a vibrant online community. It is argued that teachers who utilise social constructivist methods in their own professional

development are in turn better able to use them with students. For this reason involvement in webcasting for interaction with peers can lead eventually to positive outcomes in the classroom.

Appendix

All CMC tools and web portals used and/or referred to in this paper can be found at the following addresses:

Alado voice portal (for Webheads): http://www.alado.net/webheads

Elluminate: http://www.elluminate.com

Learning Times: http://www.learningtimes.net

Talking Communities: http://talkingcommunities.com

Tapped In: http://www.tappedin.org

Webheads in Action: http://www.webheads.info

Yahoo! Messenger: http://messenger.yahoo.com

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