1 | Desktop Video Conferencing

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Introduction: What is Desktop Video Conferencing?

This guide aims to provide an introduction to Desktop Video Conferencing. You may be familiar with video conferencing, where participants typically book a designated conference room and communicate with another group in a similar room on another site via a large screen display. Desktop video conferencing (DVC), as the name suggests, allows users to video conference from the comfort of their own office, workplace or home via a desktop/laptop Personal Computer. DVC provides live audio and visual communication in real time from a standard PC and allows one to one and multiple user conferences by participants in different physical locations. Some software features a 'whiteboard' on the computer screen for information exchange and the option to show or share documents and websites between the participants.

What are the benefits of Desktop Video Conferencing to students and teacher educators?

E-learning, facilitated by the rapid growth in personal computer ownership and internet access is sometimes cited as a panacea for many of the challenges facing Higher Education. DVC as a particular example of e-technology has much to offer to students and teacher educators. The ensuing bullet-pointed statements summarise some benefits of DVC, whilst text following expands the statement.

- DVC is synchronous, that is, participants meet in 'real time', offering greater immediacy and interactivity; when compared with other asynchronous e-learning tools such as websites, e-mail and virtual learning environments.

Whilst such asynchronous technologies do enhance the opportunities for communication, it can be argued that such communication is qualitatively poor. Russell (2005:3) for example, contends that in low-bandwidth communications such as e-mail, the affective domain is compromised:

> Teachers and students interacting via computer have little access to the body language, social subtext, and relational cues that abound in face-to-face communication.

If we agree that teaching and learning are essentially social activities and that our education system has been constructed around this social reality; then, as Palmer (1995 p282), argues:

> Face to face communication, the standard of the traditional classroom, is the 'paradigmatic social context and medium' and it is critical for interpersonal processes.

Palmer proposes 'blended' learning solutions that combine programmes of face-to-face and online learning and high-band width solutions that allow for synchronous video, audio and text communication. Desktop video conferencing is one such electronic solution. When students are geographically distanced from the college, for example, because of their home address; because they are on placement; or because they are distance learning students, then:·

- DVC can promote communication and reduce feelings of isolation

Hearnshaw (1997:57) found that DVC 'Supports distance learning by linking up students, and also offers a means of reassurance and social contact for schools.' BECTA (2003:2) also suggests that video conferencing promotes participation within the session: 'Students who normally stay in the background participate more; they are motivated to take part in video-conferencing.

Where meetings require travel between sites, or participants wish to work from home then:·

- **DVC can lead to the elimination of travel costs and subsequent time saving**
- **DVC can facilitate availability to meet** because only meeting time rather than travel *and* meeting time is required.
- In the wider context, **a reduction in the stress of modern travel and the environmental benefits** should also be acknowledged.

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How can Desktop Video Conferencing be incorporated into current practice?

Within the context of Higher Education and Initial Teacher Training, there is huge latent potential for the application of DVC. Communication between tutors, between students and staff and also student to student might all be enhanced. The following examples illustrate a number of ways that DVC can enhance communication, teaching and learning:

Facilitating cross-site meetings for planning, moderation etc.

Particularly in the context of a multi-site institution, cross-campus meetings, for example to plan courses or moderate assessment, can be time-consuming and problematic to co-ordinate. Within the authors' institution, DVC is already being used for tutor meetings between distant campuses.

Facilitating meetings with students at a distance.

Staff – student DVC interactions might include individual or small group tutorials. Increasing numbers of students choose to live at home and commute to college such that a 'local' student might make a round trip of eighty miles or more their HE (Higher Education) institution. DVC might allow a more student-focused approach to tutorials; with students accessing the system from their own home, should this better meet their needs.

Supporting students on placement.

DVC can also be used to support students at a distance from college whilst on school placements. Academic staff from the ITT institution might normally visit the school, liaising with both students and school staff, however such visits are necessarily limited. The nature of DVC might allow greater contact time, diminishing feelings of remoteness, providing support and enhancing links between the college course and school-based learning. A related finding by Sharpe (2000:62) was that DVC led to more frank discussion between students and HE staff:

> Students on teaching practice feel 'a safety in distance' when using video conferencing to communicate with their supervisors, resulting in a more frank interaction.

Students on placement might be further supported by their peers, via student to student DVC. This might be particularly appropriate where students are grouped in the same classroom and are required to plan collaboratively outside the normal school day; or where there is a lone student in an individual school who can collaborate with a partner from another school.

Key-note lectures and utilising external experts

Other possible applications of DVC might include keynote lectures given on one campus, for example by programme leaders or external experts, transmitted via DVC to groups of students at other campuses (Freeman, 1998, Gilbert, 1999, Carville and Mitchell, 2000). The convenience for external experts to provide input to one or more campuses from a distant location might facilitate greater exploitation of such resources.

What do I need in order to be able to desktop video conference?

For participants in HE institutions already engaged in DVC the start-up requirements for a new participant are relatively inexpensive. Each participant will need:

- Webcam
- Headset
- Client software (often a free download)

A good quality webcam and headset can be purchased for approximately £40 (see possible supplier list) and as a one-off start up cost; this should be affordable for most departments. For participants working from home/other locations the following additional requirements should be considered:

- A high bandwidth connection (Broadband or Local Area Network)
- A modern computer with a USB port

For HE institutions not currently engaged in DVC, the institution will need to consider purchasing:

- DVC server software

There are currently a number of DVC software packages available, ranging from the entirely free to commercial products. Some free services can be problematic to set up for more than simple 'point to point' contact' and also generally use a 'public' remote server which inevitably raises issues of speed and security for HE business. The authors' institution makes use of the 'Marratech' software which, although having a relatively high initial purchase cost, is then free to use with no per minute or per hour charges.

The ‘client software’ can be installed on numerous computers and the only limitation is the number of concurrent users which is limited by the number of ‘seats’ purchased. The benefits of the Marratech software are that it is fast and secure and delivers high quality video and audio. It also allows users to share applications and web pages as well as giving participants the opportunity to record the meeting for later analysis. Staff and students need only to download the free client software, be equipped with a simple web-camera and headset and they are ready to communicate.

Considerations for Project leaders

In addition to the basic IT skills that users require, there are other issues of which project leaders should be aware. Depending on the individual level of proficiency, participants may require assistance to install hardware and software. Also, firewalls, which can be both hardware or software based, and act to protect computers and networks from unauthorised access, can be a source of frustration. Although the required configuration changes are relatively straightforward and swift; it is possible that some Regional Broadband Consortia, understandably concerned about the security of their network, may view any modification requests with suspicion and consequently make access to schools problematic.

Promoting effective Desktop Video Conferencing

To promote the effectiveness of DVC, the following suggestions might be considered:

- Ensure participants are seated appropriately, so that the webcam is correctly focused upon their face; and the participant is facing the webcam (webcams are usually sited on the top of the computer monitor). The participant should be well lit to the front, so that they can be clearly seen (for example, avoid sitting with your back to a brightly lit window).
- There may be a slight time lag in audio communication, so aim to speak in whole sentences, i.e. avoid leaving a long pause and then recommencing. This facilitates turn-taking in conversation.
- ‘Log-on’ a few minutes before a scheduled meeting to ensure that connections are functioning correctly.
- So that participants can adjust to the on-line environment, it is usually worthwhile to have one or two socialisation sessions prior to commencing ‘business’ meetings (Cloke and Sharif, 2001, Salmon, 2003).
- When inducting new participants, it is sensible to exchange alternative contact information such as telephone numbers, so that if minor technical hitches occur (for example an incorrectly connected microphone) participants can be appropriately advised.
- In multi-user conferences, agree an etiquette for dealing with technical problems which may be experienced by one participant. For example, if one member is unable to join the conference for technical difficulties, the chair may agree to contact this participant after the conference, so that the conference is not disrupted for all.

Conclusion

Whilst DVC is successfully used by a number of staff in the authors’ ITT institution, the potential of the emerging technology to be utilised more widely in some of the ways described is still limited, largely, by access to hardware. It is not yet commonplace to find staff or students with webcams and headsets; in the same way that a decade ago students were unlikely to have access to e-mail prior to entering Higher Education. Anecdotal evidence suggests that many students now arrive at college with their own e-mail account. Similarly, with the affordability of the hardware and availability of internet communication systems, it might be anticipated that in the near future, ownership/access to such hardware will increasingly be the norm. An interim solution might be to instigate a library loan system where staff and students would borrow hardware for the duration of a project or placement. It is not envisaged that DVC will totally replace the more traditional video-conferencing, where participants meet in a designated video-conference room with large screen display. Rather it is a case of fitness for purpose; meetings of larger groups might be better catered for in video-conference suites whilst smaller meetings, of one or two individuals at each location, might enjoy the benefits of Desktop Video Conferencing (DVC). The authors are currently exploring the possibility of linking both systems so that DVC users are able to join conventional video conferences. DVC is a promising, if still embryonic, technology that can be used to complement both existing face-to-face and distant learning techniques. The compelling nature of synchronous communication with video and audio offers a glittering opportunity to enhance the quality and breadth of teaching and

learning in Initial Teacher Training and Higher Education.

Supplier list

◆ DVC Software	Marratech:	www.marratech.co.uk
◆ Web cameras	Logitech:	www.logitech.com
	Creative:	www.creative.com
◆ Headsets	Plantronics:	www.plantronics.com

Glossary

The following definitions refer to the meaning of the terms in this document.

◆ Asynchronous communication:
Asynchronous communication happens at different times; there is a time delay between sending a communication, and the communication between being received and responded to, as with postal mail and e-mail.

◆ 'Blended' learning:
A combination of teaching approaches; in this case a combination of teaching via electronic solutions e.g. VLEs (Virtual Learning Environments) and more traditional face-to-face learning.

◆ Client software:
The DVC software located on the user's computer.

◆ Desktop Video Conferencing:
Video conferencing from one laptop or desktop computer to another.

◆ E-learning:
Learning which makes use of electronic solutions, often computer-based such as e-mail and websites.

◆ Headset:
Headphones with an attached microphone.

◆ Server Software:
The DVC software, located on a server, which is used to set up the on-line meeting room.

◆ Synchronous communication:
Synchronous communication happens at the same time; that is the participants communicate with one another simultaneously, as in a telephone conversation.

◆ Web cameras.
A video camera, attached to a computer, which relays visual information to the server DVC software.

◆ Virtual learning environments (VLEs):
An internet-based resource, usually accessible by those within a particular organisation, that features options such as: availability of teaching and learning resources via web-pages; and facilitates communication via e-mail and discussion boards.

◆ Video Conferencing:
Simultaneous communication between two or more groups in different locations via large screen display and audio communication usually in dedicated video-conferencing rooms.

Finding out more: Bibliography

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