Using Information and Communications Technology (ICT) to support Action Research and Distance Learning

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Abstract

The session "The Potential of Technology to support Action Research" formed part of the "Action Research and the Politics of Educational Knowledge" Conference, organised by the Educational Studies of Ireland in association with the School of Education at Trinity College Dublin in November 1998. This paper reflects on the session.

Margaret Farren of Dublin City University, Jack Whitehead of University of Bath and Fionnuala Howard of Sutton Park School, Dublin, used video conferencing and Microsoft NetMeeting to link up with Ed Tweedy at Rockingham Community College (RCC) U.S.A. Margaret introduced the session making use of several multimedia features of PowerPoint. Ed then demonstrated the Introduction to Computing course which, RCC offers via the Internet. Next, both Ed and Margaret showed the use of the NetMeeting program for collaborative work. After that, Jack Whitehead showed how he was making use of the Internet to create a World College of Teachers and Educators. Finally, Fionnuala Howard showed how she used the features of Microsoft Word for making presentations. This practical demonstration explored how appropriate technology can be a useful tool in support of Action Research and Distance Education.

Introduction

The paper consists of four sections. Each section reports and reflects on different features and uses of ICT in support of action research and distance learning. It may be helpful to clarify the terms: action researches, and distance learning. Action Research: In simple terms, a form of enquiry, where practitioners reflect systematically on their practice, implementing informed action in order to bring about improvement in their practice. Distance Learning: Refers generally to a course where the person delivering the course is at different locations from the person taking the course. Learning is done over distance using appropriate technology and media in place of the traditional face to face contact between teacher and student. Distance Learning can be accomplished by a variety of teaching methods. Some of the technologies include Internet courses designed by course deliverers, Internet courses marketed commercially, video courses, TV broadcasts, video streaming, and video conferencing. Teaching methods range from presenting information to the student, in lecture note format, and then having him submit assignments and/or sit for exams, to interaction between students, lecturers, and the use of a variety of media, for example visuals and audio.

Features of Videoconferencing

Video conferencing is the process of using appropriate hardware and software to conduct a conference between groups of people, not physically located in the same place. Video conferencing technology allows two or more people, in different locations, to see and hear each other at the same time, sometimes even sharing computer applications for collaboration. This technology offers many possibilities for distance learning, including communicating with speakers, collaborating on projects and sharing ideas. Placing a video call is similar to making a phone call, except that in addition to hearing the voice of the other person, you can see his image, share applications and documents, collaborate on document and project development, transfer files, and chat on a given topic. Most of these features can be shared among several people in various locations around the world who are participating in the videoconference or electronic meeting. Connections between users can be direct connections using expensive ISDN lines for optimum quality or dial-up lines for less cost but with much poorer quality. For our conferences we tried to balance the cost and quality and chose to use transmissions over the Internet from PCs connected to local area networks. There is minimum cost for such Internet transmissions and the quality of audio, video, and shared applications is quite acceptable.

Section One - Features of Rockingham Community College Internet Course

In the conference session, a PowerPoint presentation from Rockingham Community College (RCC) was viewed at Trinity College. The participants in Dublin were able to hear the presenter and see his slides in the course of the presentation. Then, the main features of the RCC Internet course were shown. This course is on the following Web address http://welcome.to/rcc These features are: communication and collaboration via e-mail, communication via Web pages, use of chat rooms and forums, resources through Internet searches, communications via audio and video. Below is an account of the features.

E-mail

E-mail provides the student with a tool he can use to communicate with other students, educators and resources. Collaboration via e-mail is very important for teamwork and project work in the Internet based class, and the same kind of collaboration is possible between students, teachers, and peers. E-mail has been widely used to support teachers in their action research enquiries and makes it possible to easily communicate with other members of the class or project team. For the RCC Internet course, each student is assigned his own e-mail address. If he does not already have an address, one of several free sources is used to get him one, as e-mail is a vital part of this course. The students are trained in the use of e-mail to communicate and transfer files as part of their orientation session.

Web Pages

Web Pages are another communication tool used in this Internet course. There are web pages for the course syllabus, schedule and outline. Web pages are used to publish assignments, lab projects, news and Internet links relevant to the classes. Students are encouraged to check these web pages daily just as they would check their e-mail. The web pages are maintained by the course tutor, and can be updated to reflect current information, schedules, assignments and course activities. It is highly recommended that any group working on a significant project set up web pages to communicate their findings and provide information to others.

Discussion Forums

Discussion Forums are used in the Internet course for posting questions and ideas and getting responses from the group. In the Introduction to Computers class, for example, the questions are posted to the discussion forum each week by the tutor, and the students enter their responses at a second level. Then, at lower levels there can be responses to responses, etc. The forum is a way to

have discussion among participants in a class or project without the need for them all to be connected to the Internet at the same time. This technique is valuable, as students typically cannot get together at a common time, one of the reasons they are taking the courses in the Internet format. The forum allows anyone to post ideas and debate those ideas with other class members at a convenient time for each person, replacing classroom discussions. One important feature of this technique is that it allows one to get a printout of the entire threaded string of comments and responses for future reference and documentation.

WebCT and Lotus Notes are other examples of collaborative learning tools, which have been used by the presenters for on-line professional development courses.

Chat Rooms

Chat Rooms are useful on Internet courses, as all students in a work group, or possibly an entire class, can get online at one time and have a discussion. In the chat room, a participant types in his contributions, and the other participants can identify the writer. Like the forum, the chat room provides for the printing out of the entire conversation, labelled by speaker, for future study and reference. The difficulties of using a chat room can be getting everyone together at the same time, and managing a large group discussion. Time did not allow us during this session to show various Search Engines that are, of course, also useful in online courses, as they can provide links to useful material.

Session Two - NetMeeting for Collaborative Learning

Below, is an account of how Margaret Farren and Ed Tweedy used the Microsoft NetMeeting program and videoconferencing to share applications during the session. The following features of videoconferencing were demonstrated in the session.

- Sharing of Applications and Files
- Collaboration on Projects
- Presentations from Remote Sites
- Chat Rooms and White Boards
- Record of Chats and Discussions
- Audio and Video Capabilities

We demonstrated how participants in different locations could work simultaneously on the same application. For example, through the use of the share feature of NetMeeting, Ed was able to share an Excel spreadsheet on his computer at RCC in the U.S.A. with the presenters at Trinity College in Dublin. Changes could be made on the spreadsheet at Trinity College and sent back to

the host computer. Next, the spreadsheet could be saved and printed where it was created. Finally, the file could be transferred electronically to the remote PC for printing and further use. The share facility of NetMeeting could be used for collaborating on Action Research projects.

We also showed the use of the Chat Room on NetMeeting. This feature allows participants to meet online at a planned time, and join in an ongoing typed discussion, with all comments labeled by speakers. The sessions can be saved and printed for documentation and further review.

We used the White Board feature of NetMeeting. These boards allow all users to draw on the same white board simultaneously to produce a finished product. Pictures can be pasted to the white board by any one attending the videoconference. These can be moved, modified, and reviewed by any participant in the video conferencing session.

A participant with an inexpensive PC camera at his location, can capture a picture, paste it to the white board, and share it with the audience attending the video conferencing session. To illustrate this feature, Ed pasted a copy of the picture of the Dublin audience that he saw to the white board so that the Dublin audience could see themselves on the RCC screen. The white board is certainly a good tool for sharing graphic images with others in multiple locations! Chat sessions, graphic images and whiteboards can be saved for possible future use. Audio and Video capabilities wrap up the list of features of videoconferencing. Good quality video is important for a live presentation, but, in our link up, it was found that the communication via shared applications, whiteboards, chat sessions, along with voice, minimised the need for good on-line video. With Internet transmissions using NetMeeting, audio presents the greatest challenge. Sometimes it can be advantageous to communicate on the telephone line, using handsets or speaker-phones. However, in the RCC transmissions to Ireland, there was reasonably good audio, especially when the video was paused during the presentation. This can be credited to reasonably good equipment, and the fact that most live presentations were done at a time when Internet traffic was not at its highest volume.

Many of the features of videoconferencing that were useful in this session could be useful in action research projects for collaborating, and communication. In fact, when preparing for the Conference presentations, Ed and Margaret made extensive use of NetMeeting. The entire presentation was developed and reviewed, making as much use of these features as possible, thus saving time, costs, and effort.

Section Three - World College of Teachers and Educators

Jack Whitehead discussed how he was making use of the Internet to create a World College of Teachers and Educators. His Acton Research homepage at http://www.bath.ac.uk/~edsajw has links to Action Research Masters and Ph.D.

dissertations. There are links to Action Research Web sites world-wide, for example Ontario Action Research, Action Research Ireland, and Teaching Today for Tomorrow. He also showed links, which he created, to relevant online journals. Jack showed the Chat Room, which he has set up, on his homepage. Its purpose is to help practitioners to share and take their ideas forward. He has included relevant articles on the chat room, in case people wish to respond or follow any correspondence. He showed sample conversations. These showed typical interactions within a chat room. For example, he showed how a Ph.D. student, who had a question about a particular article was able to make contact with the author of the article, through the chat room. Jack is particularly focusing on the development of multimedia for communicating the nature of standards of practice of teachers around the world. We viewed a video clip of a teacher in her classroom in order to show how the visual medium can communicate the teacher's educational values in a way, which would be difficult for text alone.

Section Four - The Potential of Microsoft Word for Qualitative Research

Fionnuala Howard of Sutton Park school, Dublin, showed the features of Microsoft Word which she had used in presenting her case study, which formed part of her Masters Degree with the School of Education, Dublin City University. She found that the program had all the features she needed to manage, analyse and present her study. Her data was collected through participant observation, interviews and photographs. Her diary entries and interviews were transcribed and then stored in Word. The *Find* command allowed her to retrieve chunks of data, which were copied and pasted into individual files under numerous headings. As Word allows paragraph and page numbering, it was possible to reference data selected to illustrate particular points. The use of multiple windows allowed reflection, as she was able to toggle back and forth between data, notes on literature and the emerging research account. The feature*s cut, copy, paste*, helped her to juxtapose her ideas and concepts. Once style sheets are appropriately assigned in Word, the task of compiling tables of contents and lists of exhibits takes only a few seconds. Through using *style sheets* she could experiment with visual presentations. This, she claims, assisted greatly in the cognitive process of reflection and synthesis.

Conclusion

The presenters of this paper had not met face to face to prepare this session prior to the Conference. Technology allowed us to plan, organise and carry out our session effectively, despite the fact that we were continents apart.

We were able to show, in the presence of a live audience, how technology allowed us to introduce one another, and the session; how technology could be integrated into a particular course; how it could enable collaborative work; how it

could assist practitioners to share ideas and thereby make improvements to their practice; and finally how technology could assist practitioners in their research, and in presenting their findings. From our reflection on this session, it is evident that ICT can be useful in Action Research and Distance Learning.

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