

QUIC Briefing Paper

Using Access Grid Technology for the Provision of Software Training

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This research project forms part of the capacity building elements of the Qualitative Innovations in CAQDAS (QUIC), a Research Node funded by the ESRC National Centre of Research Methods (NCRM). It is being conducted by Christina Silver, Christine Rivers, Nigel Fielding and Nigel Woodger. More information about QUIC Capacity Building can be found at <http://caqdas.soc.surrey.ac.uk/tcb.html>

INTRODUCTION

Access Grid Nodes (AGNs) are devices enabling visual images and audio to be exchanged in real time between different computers. Cameras and microphones relay images of participants, and their utterances, to other AGN sites, without limits on how many sites can be connected. AGNs provide large format images and high fidelity sound, aiming to make AGN communication as much like being co-present as possible. Images of computer displays, such as presentation slides, can also be displayed, so everyone involved can see common objects. For more information on AG technology see <http://www.accessgrid.surrey.ac.uk/whatis.html>

Members of the project team have used AGNs to conduct virtual interviews and 'focus groups' with remote respondents (Fielding & Macintyre 2006), and have run AG-based training sessions for a number of years. This experience has identified different aspects of interest which this project will take into consideration in order to improve distance learning and training, including aspects of communication and non-verbal behaviour (e.g., gesture, eye contact). As well as logging the learning process, our evaluation will use techniques developed in education research. This includes assessing the communication process between instructors and learners to identify communication qualities that help to design successful sessions.

This project will contribute to the continued evaluation of Access Grid (AG) technology as a medium for delivering teaching sessions to learners at remote sites. We believe that with appropriate collaboration tools, AG-based learning can emulate the human-to-human and human-to-computer elements of conventional teaching, achieve real savings in travel costs, and make specialist expertise more widely available. This potential will be tested by comparing conventional and AG-based sessions delivered by the CAQDAS Networking Project (CNP), which trains researchers in the use qualitative software. For more information on the CNP see <http://caqdas.soc.surrey.ac.uk>

The following section of this briefing paper introduces the project research design including the outline of research objectives and questions, session formats and technical aspects, processes of data collection and analysis. Future publications will outline findings and discuss analytic procedures in more detail.

RESEARCH DESIGN

This project considers pilot training sessions run via Access Grid technology in 2007 and 2010. The aim is to evaluate Access Grid (AG) technology as a medium for delivering teaching sessions to learners at remote sites. The research aims of this project are:

1. To identify and draw on the experiences and evaluations of participants taking part in AG-mediated training events.
2. To identify the technical and pedagogical factors involved in planning and delivering AG-mediated training events.

3. To develop a 'walk-in' solution to delivering AG-mediated sessions which minimises technical and time resources and to develop guidelines for doing so.

Session formats and technical aspects

This section explains the design of the sessions (held in 2007 and 2010) and technical aspects that had to be considered. Two types of training sessions are compared for this project: awareness raising sessions (AWR) and intermediate support sessions (ISS). Awareness raising sessions are essentially lecture-style sessions comprising demonstration and discussion of several CAQDAS packages with the aim of enabling participants to make informed decisions about which package will be most suitable for their research project. Intermediate Support Sessions are interactive hands-on teaching sessions in which participants have a laptop with their work in progress loaded within their chosen CAQDAS package. The tutor provides project-specific support to individual participants as well as providing general advice on more advanced software features to the group as a whole. Table 1 gives an overview of session designs.

Session Number	Number of Locations	Cameras and Video Output	Total number of participants		Training session type	Type of Data	Session Date
			Location 1 (Host)	Location 2 (Remote)			
AG1-AWR-ST	2	5	1	3	Awareness-raising Lecture style (AWR)	Multiple Videos synchronized	June 2007
AG2-ISS-MC	2	4	1	2	Intermediate support session (ISS)	Multiple Video synchronized	June 2007
AG3-AWR-BS+GU	2	6	6	5	Awareness-raising Lecture style (AWR)	Multiple Videos	July 2010

Table 1 : Breakdown of AG-mediated sessions

The intention in both awareness raising sessions was to include demonstrations of qualitative software applications. In the 2007 session, however, this was not possible as the remote location was unable to install the desktop sharing application which was planned to be used to stream the software demonstrations. Therefore this session comprised an extended power point presentation without any software demonstration.

Figure 1 illustrates the set up of the participations and technical features during the AGN sessions. The two awareness raising sessions were held in lecture-style format, whereby the trainer initially talked through a power point presentation which was transmitted to the remote locations via the Access Grid.

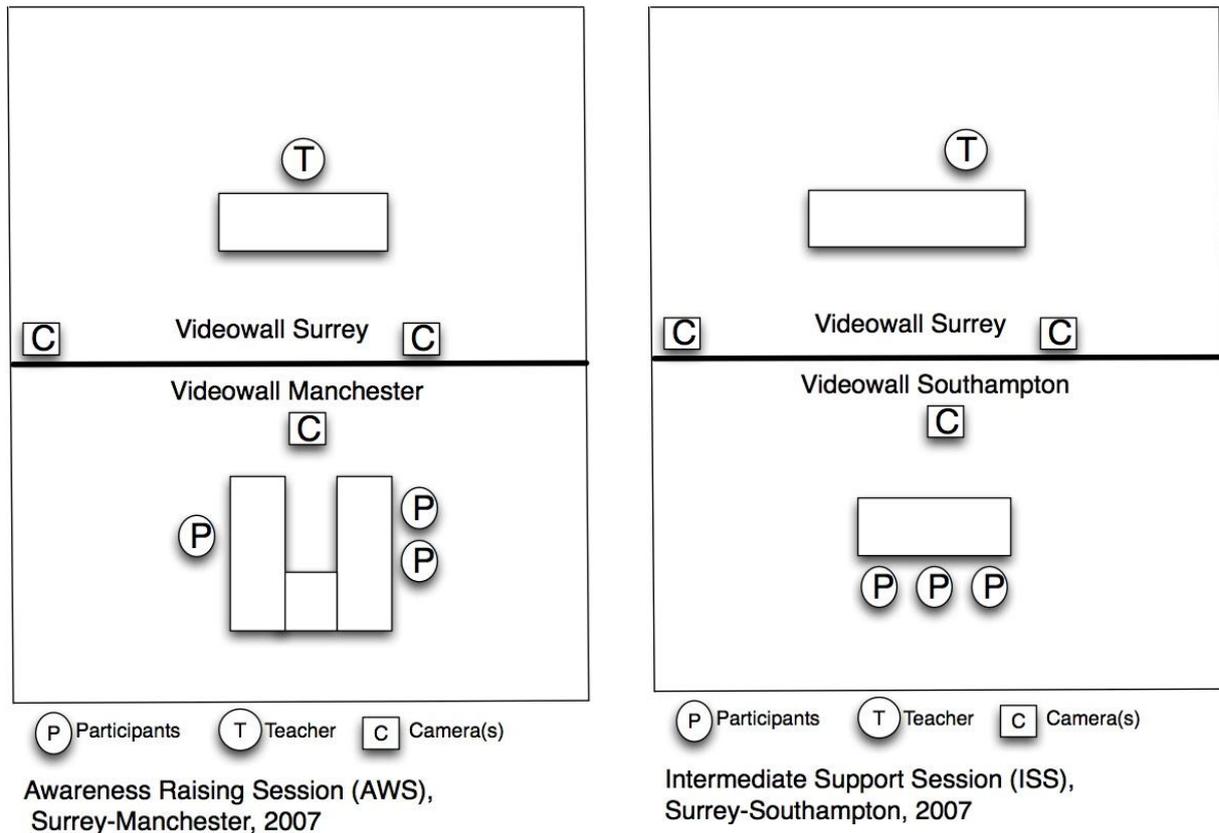
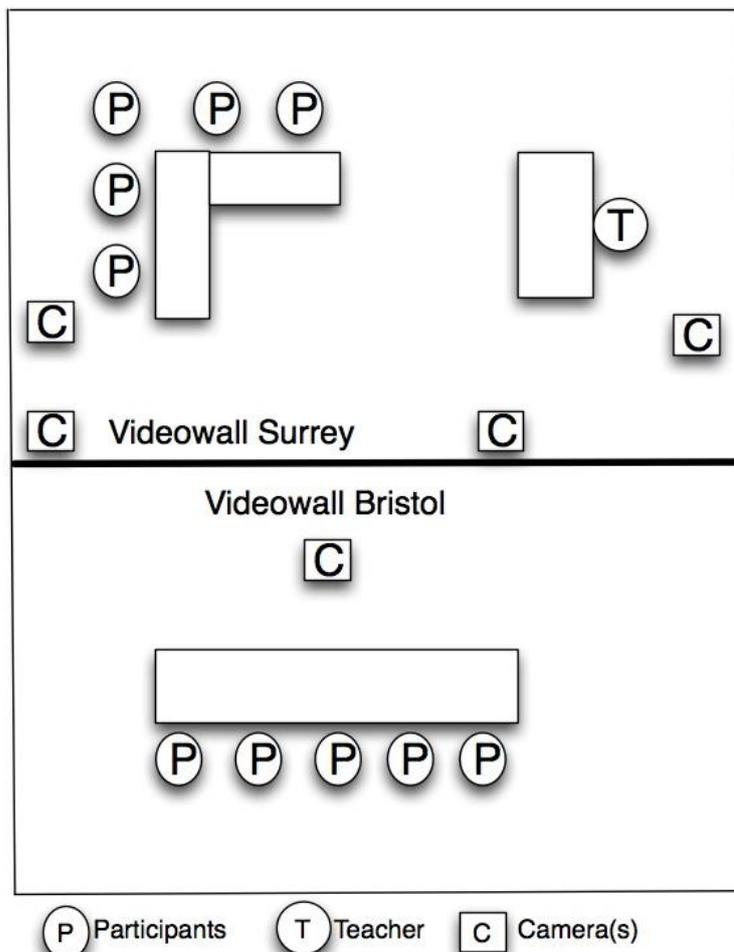


Figure 1: Room set up and participants for AGN sessions in 2007

The 2007 intermediate support session involved three participants working on the same research project using the CAQDAS package ATLAS.ti. They were located together at a remote site and the trainer was at the host location. Ahead of the session the participants had notified the trainer about their project and progress with the software, highlighting a number of issues they were having and specific questions about software functionality. One of the participants loaded up a working version of the ATLAS.ti project and shared their desktop with the trainer via the beta version of MS Shared View. This was visible on the trainer's computer desktop. The session comprised discussion of the project, progress with the software, and trouble-shooting of particular problems whereby the trainer talked the participants through tasks and processes. The participants in this session were familiar with the basic workings of the software, having previously attended an introductory training workshop. Therefore the simple desktop sharing technology was sufficient for the purpose of showing the tutor around the working project and highlighting where difficulties lay. The tutor was able to troubleshoot these issues simply by describing how to access particular functions or to demonstrate more complex procedures.

The 2010 session can be understood as a follow-up study of the 2007 session. The technical and pedagogic aspects that had been raised and identified during the 2007 session were considered and influenced the design of the 2010 session. Figure 2 illustrates the set up of the room. Based on the insights gained in the 2007 session, the group size for the 2010 session was increased and participants in both host and remote locations formed so called 'mixed presence groups' (Tang et al, 2006), which consisted of six participants including the teacher in the host location and five participants in the remote location. As a result the 2010 session took a different technical approach, utilising the web-based desktop sharing tool LogMeIn Express. This tool provides convenient and user-friendly means of desktop sharing without the need to install an application. Two remote locations were recruited for the 2010 session but unforeseen technical issues with the Access Grid hardware at one remote location during set-up resulted in this location having to withdraw from the session at short notice.



Awareness Raising Session, Surrey-Bristol, 2010

Figure 2: Room set up and participants for AGN session in 2010

In both awareness-raising sessions participants were encouraged to ask questions throughout in order to emulate the way a co-present awareness-raising session would flow.

Recruitment of participants

The participants who took part in the three sessions were recruited through the Project website, on which the sessions were advertised and participation requested. For the 2010 AWR session, participants attending one of the remote sites were recruited by a local contact who advertised the sessions to interested students. An incentive payment of £10.00 was paid to all participants at the end of each session.

Consent

Due to the visual nature of the data generated, it was important to ensure participants were fully aware that their image and real name, as well as the content of their feedback may be used for analytic and dissemination purposes. The consent form therefore provided participants with the opportunity to specify that they would prefer to have their image obscured in any resultant publications or conference presentations. See the Appendix to this document for an example of the Consent Form used. However, none of the participants requested this option.

Room Arrangement and Camera Set-up

In setting up an AG-mediated session the arrangement of the room and node camera placement are of paramount importance as these two aspects are the prime means of ensuring the experience emulates co-present interactions as much as possible. Feedback from participants taking part in the 2007 session and technical experiences of working with remote sites informed the set-up design for the follow-up session in 2010.

A key area of interest in this project relates to the nature of the interaction between the trainer and participants in an AG-mediated context. It was therefore important to capture the sessions from different angles. The Access Grid Node Computer itself was used to record two of the visual streams on view in each location. This included the main camera view transmitted to the remote location, (which in all cases was a close-up view of the trainer), the remote location's rear camera view (which included the layout of all the views displayed at the remote location), and two views of the remote location visible in the host location (typically a general view showing all the participants and their seating arrangements, and a close up view in order to elucidate some facial expressions). These four camera views were prepared such that they constituted one video stream for analytic purposes. As well as the AG Node computer recordings, two free-standing digital camcorders were used to capture additional angles and to act as back-ups.

Data collection

A total of three AG-mediated training sessions (two awareness-raising lecture-style sessions and one intermediate support session) have been conducted and multiple video recordings of the various sites have been collected for further analytical use. Table 1 illustrates the break-down of these sessions according to training type, participant structure but also shows how the data has been collected; having different locations and multiple cameras in each location results in multiple videos. These videos have to be synchronized in order to view and follow the interaction in both locations and further to analyse the data from different camera angles. Figure 3 shows the synchronized video of one of the AGN session in 2007 captured from six different cameras, which highlights the complexity of collecting multiple videos and preparing them for further analysis.



Figure 3: Screenshot of synchronised videos of AGN session 2007 (captured from 6 cameras)

DATA ANALYSIS

The CAQDAS packages Transana and DRS will be used to analyse the data collected during the AGN sessions in 2007 and 2010. Both packages offer different possibilities to analyse video data and both allow multiple video streams to be synchronised which is of great advantage as multiple video streams of each location have been collected and require precise synchronisation in order to be analysed. The analysis of the data from the AGN sessions will consider two different aspects: the impact and effect of delivering teaching sessions via the Access Grid, and an evaluation of the substantial analytical tools the CAQDAS packages provide for this. Regarding analysing the impact of delivering teaching sessions via the AG, different aspects will be taken into account; for instance user experience, social interaction, communication problems, and the effects of presentation, as well as technical aspects. These will be compared to face-to-face sessions in order to identify differences and similarities between different types of teaching (remote versus face-to-face).

ETHICS

The QUIC project has received University of Surrey internal ethical approval and therefore does not need to secure separate ethical approval for this project. We will be following standard practice in terms of confidentiality and anonymity of materials provided by respondents and we will seek permission to release examples of this work for teaching purposes.

FURTHER INFORMATION

The QUIC project will be publishing interim and final results from this project during 2011 as part of the Working Paper series. There will also be opportunities to discuss the implications via our Methodological Seminar Series (see <http://caqdas.soc.surrey.ac.uk/methodseminars.html>).

References

- Fielding N & Macintyre M (2006) [Access Grid Nodes in Field Research](#), Sociological Research Online, Volume 11(2)
- Tang, A., Boyle, M. & Greenberg, S. (2004). Display and Presence Disparity of Mixed Presence Groups. *5th Australasian User Interface Conference (AUIC2004)*. Dunedin, NZ, Conferences in Journal Research and Practice in Information Technology. 37(2). 73-82.

Appendix One : Consent Form

Access Grid Mediated CAQDAS training session: Video consent form

I understand that the CAQDAS training session that I am attending is being recorded as part of a larger study exploring the use of the Access Grid Nodes for CAQDAS training sessions. I understand that the video and audio data from this training session will normally be preserved at the University of Surrey and will be kept confidential. The material will be preserved as a research resource for use in research and publication under a set of terms and conditions agreed by this research team. My contribution will be kept safely and securely with access only to those with permission from the researchers. I understand that I can ask the University of Surrey's research team any questions concerning the study.

I understand that my participation is voluntary and that I can withdraw my consent at any time during the study by contacting the research team.

I understand that the video and audio clips may be used for dissemination, publication or for teaching purposes and that a transcript may be made of the session. However, my name and personal information will not be revealed in any output from the research, or in any other way.

Please tick as appropriate

I am happy for my video image to be used in this way

I would not like my video image to be used in this way and would like my image to be distorted in some way to obscure my visual identity

I give my informed consent to participate in this study.

Signed:Name (PLEASE PRINT)

Date: I can be contacted on this telephone number:

Date, time and location of session: **29th June 2006, University of Manchester**

Countersigned on behalf of the Surrey AGN project:.....Dr Christina Silver

Date:

Thanks again for your time and help! Please provide your home address in order that we can send you a £10 Boots gift voucher as recompense for your participation.

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This information will be retained separately and securely from the research data.