

**UNIVERSITY OF WALES COLLEGE OF CARDIFF**

**Survey of User Experience of the**  
**University of Wales Video Network**

**Survey Report**  
**and**  
**Staff and Tutors Guide**  
**and**  
**The Video-Conferencing Check-List**

**Roger Cannon**  
**John Martin**

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# **Survey of User Experience of the University of Wales Video Network**

## **Contents**

- I Executive Summary
  - II Survey Report
    - 1. Introduction
    - 2. Background
    - 3. The Survey
    - 4. Analysis of Questionnaire Returns
    - 5. Future Developments in Wales
    - 6. Conclusions
  - III Staff and Tutors Guide
  - IV The Video-Conferencing Check-List
  - V References and Literature
- Appendix 1: Individual User Comments
- Appendix 2: Survey Questionnaire Form

## **SECTION I: EXECUTIVE SUMMARY**

1. The University of Wales Video teaching network was set up in 1990. Studios equipped for both teaching and committee use are located at Bangor, Aberystwyth, Lampeter, Cardiff and Swansea. By 1994 a substantial community of regular users of the video network had developed. All academic subject categories are represented as well as many administrative and committee groups. About 350 teaching classes and committee meetings are held over the video network each year.
2. In late 1994 and early 1995 a survey was conducted amongst users of the University of Wales Video teaching network. The purpose of the survey was to make the knowledge of this experienced community available to the benefit of users of the pilot SuperJanet video network and other emerging video-conferencing facilities in higher education. The survey was intended to examine user attitudes and experiences, to identify particular factors leading to success and failure in video network use, and to provide a guide to good practice.
3. The survey was conducted by means of a substantial questionnaire form sent out in December 1994. Advice on the design of the questionnaire was taken from education research experts, and tested in a number of dry runs. The questionnaire was designed to obtain information on a series of specific points relating to usage for both teaching and committee meetings, user experience of both technical and human factors, and attitudes towards the medium. In addition, there were opportunities built into the questionnaire to elicit freely comments and advice from the respondents on how new users and non-specialists could get the best out of the video medium.
4. The questionnaire was sent out to 200 contacts who had made bookings of the network in the previous 4 years. 93 completed questionnaires were received. The respondents covered university academics and administrators representing most departments of the University of Wales. The profile of the respondents matches that of the general university population, and there was no evidence of bias towards high-technology groups who might be expected to have an inbuilt motivation and ability to use a novel medium.
5. Whilst most users of the network are now very confident in using the system, there was widespread agreement that training in the use of the system and in the booking procedures was very important. The booking system itself was felt to be good; this probably reflects the existence of official site contacts which makes booking a 'one-stop' exercise.
6. Teaching use accounted for about one quarter (23%) of the responses, whilst committee and meeting use (77%) comprised the remainder. Some 10% of respondents said that their sessions were held entirely in Welsh and a further 10% partly in Welsh. The collective experience represented by the responses was some 600 studio sessions and 1200 studio hours in 1994.

### **Teaching and Learning Use**

7. Under teaching and learning use, 16 subject areas were represented among the 21 responses. The majority of sessions were at post-graduate level, and a typical session involved 6 to 25 students at a time. The most popular forms of teaching sessions were lectures (57%), seminars (48%), and student feedback sessions (10%). Sessions were mostly of short duration, usually 1 hour.
8. A high proportion (87%) indicated that the network made it possible to run courses which could not otherwise take place. This included both the very specialised courses to more limited numbers of students, and some broader programme of seminars to post-graduate students.
9. Many of the teaching sessions made use of the complementary media, particularly the document camera (48%) and OHPs (33%), although the remaining AV facilities were also regularly used.
10. In teaching and learning use a large majority (82%) agreed that non-video sessions were important also (although some courses did not manage this). It was also regarded as important to let the students take the first 2-3 sessions to get used to the medium and for 'ice-breaking'. Certain features of session organisation were also regarded as important, for example the distribution of notes and problems in advance.

## **Committee and Meeting Use**

11. In committee use there was widespread agreement that meetings need more formal structuring than face-to-face meetings, if they are to succeed. A firm chair (or meeting facilitator) is required (84%) to make sure that all sites are drawn into the meeting. Formal introductions and close to each session are also felt to be important (75-83%). There was general agreement that video meetings lack a personal feel and that face-to-face meetings are also needed (76%).

12. Under committee and meeting use very little use was made of the available AV devices. The document camera was occasionally used.

13. In committee use the overwhelming motivation was in the savings in time (88%) and travel (84%) achieved. These were felt to outweigh any drawbacks of the medium. It was also felt that the video network made it easier for ad-hoc meetings to be called at short notice. This again reflects the time saving compared with travelling across Wales, where video network sites span a maximum distance of about 300 Km and typical travelling times between sites is 2-3 hours by car.

## **Future Use**

14. The majority of respondents were in favour of expansion of the number of other sites in the UK and worldwide. Progress in this has been achieved since the survey was conducted through the connection to the SuperJanet network, and through the introduction of ISDN capabilities.

## **Survey Outputs**

15. The survey outputs comprise:

- (1) A full Report, to be published in the SIMA (Support Initiative for Multimedia) series;
- (2) A Staff and Tutors Guide;
- (3) The Video-Conferencing Check-List (1 side aide-memoire).

## **Acknowledgements**

16. The survey was funded under the JISC New Technology Initiative and carried out with the support of the University of Wales Video Network Steering Committee. These and the individual respondents are thanked for their cooperation.

## SECTION II: SURVEY REPORT

### 1.0 INTRODUCTION

In 1990 the University of Wales set up a video teaching conferencing network to link its constituent Colleges. The system is referred to locally as 'C5C' or 'WelshNet'. This report uses the term Welshnet as a useful comparison with similar networks such as the University of London 'LiveNet' service (Butters, L et.al 1995). There are currently dedicated video-conferencing rooms in five centres, at Aberystwyth, Bangor, Cardiff Lampeter, and Swansea. The system's main use has always been for University teaching, research and administration. The facilities are however increasingly being used by outside organisations.

The five centres each contain a conference table for six participants, all of whom can be seen on screen at the other centres. There is also additional seating in each room which allows for presentations to larger groups. The total capacity of the rooms varies from 20 at Swansea to 50 at Bangor, with Aberystwyth, Cardiff and Lampeter each having room for 30.

The system as currently configured can link from two to all five centres, and can allow multiple conferences to be supported. It can also be linked by special arrangement to the BT network which allows access to other public video-conferencing rooms elsewhere in the UK. Usage data derived from the booking system indicates a range of different connection types, and is shown in Table 1.

| <b>Point-to-Point</b> | <b>3 way</b> | <b>4 way</b> | <b>5 way</b> |    |
|-----------------------|--------------|--------------|--------------|----|
| No of sessions        | 75           | 37           | 70           | 27 |
| No. of hours          | 123          | 70.5         | 131          | 57 |

**Table 1.**

Connection types (actual & booked Feb.1994 to Jan. 1995)

In particular the provision of a switched interface to the SuperJANET high speed digital video circuit now makes possible successful links to be established with several of the SuperJANET academic pilot centres.

### 2.0 BACKGROUND

A questionnaire survey was conducted amongst users of the University of Wales video network during December 1994 to January 1995 (Appendix 1). The questionnaire was circulated to all those who had made bookings of the video network in the previous 4 years. This involved university administrators and academics representing most departments across the five constituent colleges. For the most part users interests were not in the technicalities of videoconferencing, but the potential for remote communication, and presentation in their respective areas of responsibility.

A particular feature of the videoconference service is the potential to support and promote the delivery of sessions in the medium of Welsh. The survey indicated 10% of sessions were conducted entirely in Welsh, and 10% partly in Welsh. The survey was conducted as part of a small study commissioned by the Joint Information Systems Committee (JISC) of the HEFCs. Its purpose being to enable the experiences gained in the past 5 years on the University of Wales network for conferencing, committees, teaching and research use to be collected, summarised and made available to the users of the SuperJANET video network which is being established in the rest of the UK.

The outcome of the survey comprises:-

- (i) A comprehensive report on the survey,
- (ii) Recommendations on good practice applied to the conduct of meetings and for teaching use derived from the experiences reported in the survey,
- (iii) References and literature relating to good practice in videoconferencing.

### 3.0 THE SURVEY

#### 3.1 General Observations

199 questionnaires were distributed, and 93 (47%) returns made by mid January 1995. The encouraging return appears to reflect the degree of interest and enthusiasm expressed for using the video-conference service. Data consisting of over 200 variables was entered into the statistics package SPSS and basic summary descriptive results then used to inform the contents of this report.

The majority of users in the survey indicated that they first started using the videoconferencing system in 1992. The rate at which new users have then joined subsequently appears to have dropped away, although use overall is still increasing. There is no clear explanation for this although at some sites booking possibilities may have reached an optimum given existing resources.

Regular users are also very active - booking the system from once per term to once per week in some cases. Totals available from the booking statistics are provided (Table 2) for the six months February 1994 to July 1994 and indicate a high overall network usage. Academic departmental hours however do not disaggregate direct teaching use from meeting and committee use.

| College     | No of Sessions | Hours | No of Hours | Academic Dept |
|-------------|----------------|-------|-------------|---------------|
| Aberystwyth | 114            | 217   | 106         |               |
| Bangor      | 119            |       | 227         | 91            |
| Cardiff     | 141            |       | 256         | 128           |
| Lampeter    | 46             |       | 87          | 28            |
| Medicine    | 13             |       | 37          | -             |
| Registry    | 39             |       | 85          | -             |
| Swansea     | 118            |       | 212         | 104           |
| Totals      | 590            |       | 1121        | 457           |

**Table 2.**

Actual site usage (Feb.1994 to July. 1994)

This survey has addressed separately both the issue of committee & meeting use - including research - and teaching and learning use - involving course delivery and student activity. The survey however did not include sampling of student experience. Table 3 indicates the comparison of overall committee and direct teaching activity derived from the samples collected.

| College     | Committee Use | Teaching Use | Totals |
|-------------|---------------|--------------|--------|
| Aberystwyth | 5             | 14           | 9      |
| Bangor      | 13            | 4            | 17     |
| Cardiff     | 20            | 4            | 24     |
| Swansea     | 17            | 5            | 22     |
| Lampeter    | 11            | 3            | 14     |
| Medicine    | 2             | -            | 2      |
| Totals      | 72 (77%)      | 21 (23%)     | 93     |

**Table. 3**

Questionnaire samples by category of use

It would appear that whilst teaching and learning use has grown steadily with many different departments using the system over a period of time, meeting use has grown quickly and substantially. Committee and meeting use has now established itself as a regular pattern of video-communication for many users. As one user indicated, video-conferencing is now part of their vital "tools of the trade". Direct teaching is, however, also to be seen as a significant component in network use and involving a wide range of subject areas.

#### **4.0 ANALYSIS OF QUESTIONNAIRE RETURNS**

##### **4.1 User Experience & Training**

Welshnet users appear to be very confident in using the service. 76% indicated being very confident or confident in using the system, and none indicated any lack of confidence. In terms of initial induction, 21% of users had no experience of sitting-in and observing a session before taking part themselves, but did indicate that they had been given some advice on holding a video-conference meeting beforehand.

Almost half (46 %) were shown the basic controls as indicated in the BT Quick Reference Guide, but less than 40% were given additional advice on the operation of other AV equipment. (e.g. auxiliary camera, white board/flip chart, video recorder, screen based graphics from a PC)

A summary of the significant views held by users concerning general training needs is provided below in Table 4:-

| <b>Training Elements</b>      | <b>Views</b> | <b>Proportion (%)</b> |
|-------------------------------|--------------|-----------------------|
| Admin./Operational Procedures | Essential    | 57                    |
| Studio arrangements           | Essential    | 50                    |
| Background Technology         | Useful       | 58                    |
| Audio System                  | Useful       | 6                     |
| Personal Interaction          | Useful       | 40                    |
| Document Camera               | Useful       | 49                    |
| Clothing advice               | Not needed   | 46                    |
| Common Problems               | Useful       | 51                    |
| Regular Support               | Useful       | 50                    |

**Table 4.**

User views concerning training needs

Videoconferencing system are generally susceptible to distortion of the image caused by movement. This distortion is greatly emphasised when individuals are wearing bright jewellery, or heavily patterned clothing. It was therefore surprising that few users felt advice in this area to be necessary.

#### **4.2 Committee & Meeting Use**

Users are quite clear that preparation is very important. Most users (75-96%) favour a formal structure, a designated chair, a designated secretary with an agenda and other papers. Many users also commented that although video meetings should be largely treated just like any other meeting, in many cases much greater preparation is required in practice. 61% of participants also meet face-to-face; a point reinforced by individual comments.

Little use appears to be made of the additional AV facilities available in the studios (Table 5). Perhaps the time needed to prepare for a meeting, the facilities not being appropriate, or a lack of familiarity may account for this.

| <b>Studio AV facilities Used</b> |                  | <b>Proportion (%)</b> |
|----------------------------------|------------------|-----------------------|
| Document Camera                  | Never/Occasional | 72                    |
| OHP's                            | Never            | 63                    |
| Slides                           | Never            | 82                    |
| Additional Monitors              | Never            | 71                    |
| White Board                      | Never            | 73                    |

**Table 5.**

Facilities used at committee/meeting sessions

Opinions on actual use are summarised in Table 6. There is an overwhelming view that video-conferencing provides savings in time and travel. The importance of the organisational side of a video meeting is also emphasised. A clear view emerged that carefully rehearsed meetings, strong leadership by the chair, prior introductions, and face-to-face at some stage are necessary. Some users expressed the view (in their comments) that small informal meetings can however be successful.

| <b>Views on Use</b>                                | <b>Opinion</b> | <b>Proportion (%)</b> |
|--|----------------|-----------------------|
| Video conference meetings lack a personal feel     | Agree          | 57                    |
| Prior introductions are necessary                  | Agree          | 75                    |
| It is important to formally close meeting          | Agree          | 83                    |
| Face-to-face meetings are also needed              | Agree          | 76                    |
| It is easy for some studio groups to be overlooked | Uncertain      | 50                    |
| Firm chairing & leadership are important           | Agree          | 84                    |
| Saving in travel appreciated                       | Agree          | 84                    |
| Saving in time appreciated                         | Agree          | 88                    |
| Hospitality (food/drink) provided at a session     | Disagree       | 52                    |

**Table 6.**

Significant views on videoconferencing use

### 4.3 Teaching & Learning Use

16 subject areas were represented in the survey by the 21 respondents who indicated that they were using the network for course delivery. The schools or departments involved are listed in Table 7. The courses or modules delivered were for the most part at post-graduate level, and a typical teaching session involved 6 to 25 students at a time, with sessions lasting up to 1 hour, mostly involving 1 tutor, but sometimes 2.

| <b>College</b> | <b>Departments or Schools Involved in the Survey</b>                 |
|----------------|--|
| Aberystwyth    | Agricultural Science, International Politics, Physics.               |
| Bangor         | Mathematics, Education, Radiography.                                 |
| Swansea        | Mathematics, Computer Science, Physics, Classical & Ancient History. |
| Cardiff        | European Studies, Physics, History & Archaeology Ancient History.    |
| Lampeter       | Theology & Religious Studies, Modern Languages.                      |

**Table 7.**

Subject area responses to the survey

For the most part conference users indicated that their sessions were lecture or seminar based with some time devoted to feedback on coursework. A high (78%) proportion indicated that the network made it possible to run a course which would not be otherwise possible. Interestingly none of the respondents indicated use of the network for research supervision purposes (Table 8).

| <b>Mode of Delivery</b> | <b>No.</b> | <b>% (out of 21)</b> |
|-------------------------|------------|----------------------|
| Video lectures          | 12         | 57                   |
| Workshops               | 1          |                      |
| Seminars                | 10         | 48                   |
| Teamwork                | 1          |                      |
| Research                | 0          |                      |
| Supervision             |            |                      |
| Workshops               | 1          |                      |
| One-to-One              | 1          |                      |
| Tutorials               |            |                      |
| Student Feedback        | 3          | 14                   |

**Table 8.**

Significant modes of delivery

50% of the respondents used the document camera and OHP projector on a regular basis, although little use appears to be made of any other complementary media (Table 9).

| <b>Media Usage</b>   | <b>No.</b> | <b>% ( out of 21)</b> |
|----------------------|------------|-----------------------|
| Document delivery    | 10         | 48                    |
| OHPs                 | 7          | 33                    |
| Slides               | 2          | 10                    |
| Pre-recorded Video   | 2          | 10                    |
| Graphics             | 4          | 20                    |
| White Board          | 5          | 23                    |
| Flip Chart           | 2          | 10                    |
| Computer Based Media | 1          | 5                     |

**Table 9.**

Use of Complementary media

A high proportion of users adopt the view that non-video sessions are important in addition to the video-conference sessions (Table 10).

| <b>Running a Session</b>                     | <b>View</b>   | <b>Proportion (%)</b> |
|--|---------------|-----------------------|
| Importance of non-video sessions in addition | Important     | 82                    |
| The role of 'ice'-breaking sessions          | Important     | 59                    |
| Importance of training/warm-up sessions      | Important     | 69                    |
| Importance of providing an agenda            | Important     | 87                    |
| Importance site names and identifiers        | Not Important | 56                    |
| Importance of having participant name tags   | Not Important | 75                    |
| Importance of having pre-written questions   | Important     | 80                    |
| Importance of evaluation data on a session   | Not Important | 50                    |

**Table 10.**

User views on running a session

#### 4.4 Staff Reactions and Opinions

The video conference sessions appear to be successful in terms of meeting teaching objectives (Table 11).

| <b>Opinions</b>                              | <b>View</b> | <b>Proportion (%)</b> |
|--|-------------|-----------------------|
| I use more visual aids when via the network  | Agree       | 27                    |
| I use better quality materials               | Disagree    | 53                    |
| Can be better than a face-to-face session    | Disagree    | 59                    |
| Can promote group cohesiveness               | Agree       | 25                    |
| Can promote group independence               | Uncertain   | 71                    |
| Can promote better course management         | Uncertain   | 60                    |
| Discourages feedback                         | Agree       | 47                    |
| Difficult to balance needs of local students | Disagree    | 40                    |
| My teaching objectives were met              | Agree       | 87                    |

**Table 11.**

Views on videoconferencing for teaching purposes

## 5.0 FUTURE DEVELOPMENTS IN WALES

### 5.1 Promotion of Video-conferencing

A very high proportion of users were keen to support further use across a variety of applications and would recommend an extension of use. A majority view was that videoconferencing should be promoted for economic reasons.

| Opinions   | View  | Proportion (%) |
|--|-------|----------------|
| Videoconferencing should be extended for course delivery | Agree | 65             |
| There should be greater promotion of welshnet            | Agree | 85             |
| Promotion should be on economics grounds                 | Agree | 87             |
| Promotion should be for value for money reasons          | Agree | 81             |
| Promotion should be on the basis of quality              | Agree | 60             |

**Table 12**

User views on promotion of the service

### 5.2 Booking Arrangements

85% consider the booking arrangements work well and are adequate. 58% of users indicated that did not check the on-line booking system, possibly because there is a nominated contact who makes the bookings at each site, although 32% did check bookings on-line.

### 5.3 Expansion of the Network

Respondents were asked to indicate from a list of possible future video network links to Superjanet which connections they would use. The most popular future connections listed in order of importance are given below:-

1. *Cambridge*
2. *Manchester*
3. *Other Global Sites (not specified)*
4. *Glasgow*
5. *Edinburgh*
6. *UCL*
7. *Imperial College*
8. *Nottingham*
9. *Queen's University Belfast*
10. *Birmingham*
11. *Leeds*
12. *Newcastle*
13. *Rutherford Appleton Laboratory*
14. *Daresbury Laboratory*

## **6.0 CONCLUSIONS**

The following conclusions are a summary drawn from the large number of individual comments made by users (Appendix 1) and concern aspects of training, successes and failures, limitations in use, and future developments.

### **6.1 Training & Structure of Meetings**

The role of the chair or conference co-ordinator is considered vital to a successful conference meeting. In particular a chair sympathetic to how the network functions is essential - it is necessary in order to 'draw out' members in all centres. This also seems to depend on the size of a committee - 3 is very informal, 10 needs more formality to work effectively. The system can also be effective for more informal discussions for which no agenda is necessary. For a more formal meeting a Chairman, Agenda and Minute Secretary are considered vital.

### **6.2 Good Points**

Generally users feel that the video conference does not have the flow and momentum of face-to-face meetings - although this is seen as a positive benefit where groups are undisciplined. Also it is considered good for quick informal meetings at short notice to find out what other people are thinking. The video conference produces well structured tightly run meetings; little time is wasted. People say what they have to say without going on at length. It is less useful for formal meetings involving negotiations, as it is considered much less easy to pick up on non-verbal clues from the other participants. The framework of the conference seems to impose a beneficial structure on a meeting, and encourages participants to prepare before hand. It is considered extremely useful for research discussions and seminars, and allows for more frequent meetings than would otherwise be possible. It is also considered particularly good for one-to-one discussions. It should enable University-wide meetings to be called at short notice.

It is considered very efficient on time - with no real disadvantages compared with face-to-face meetings, and the next best thing to a personal meeting. The savings in travel time is really appreciated, and it is considered very useful and expedient in dealing with fairly routine matters or non controversial issues.

Many users felt that more training should be given before the first session on the network i.e. planning, preparation, camera presentation, more knowledge of the equipment, etc.

### **6.3 Activities Facilitated by Videoconferencing**

There have been a number of notable successes indicated by the survey. It has led to the setting up of an all-Wales specialist group in Electron Microscopy; a long series of seminars in Mathematical Physics and Physical Mathematics; liaison/tutor support with students on clinical placements in Mid and South Wales. Audiences large enough to put on specialised talks, and to make it worth while to get in outside speakers have been made possible. Travel expenses involved would have prevented Post-Graduate students from attending regular 'live' seminars across 3 campuses for a number of courses. Historical modules taught over the video-link were planned from the start as part of an inter-collegiate scheme. The careers service at Aberystwyth is linked into the SW regional training group of ACCAS. This involves institutions west of Oxford and south of a line from Oxford to Aberystwyth.

At Post-Graduate level particularly, the network is considered to help towards making courses more efficient. The facilities make it possible to mount a course which would otherwise be impossible on economic grounds. The Physics Departments across Wales are planning to greatly extend their teaching on the network, especially in post graduate and final year Physics courses. It is also considered very important for extending Welsh medium provision.

Overwhelming support is expressed for the saving of staff time in travel, for the spreading of expertise, and drawing expertise together. The experience at post-graduate level is that one can introduce students to a much wider range of topics than would be possible locally. This allows students access to the whole range of specialist teaching in the University.

Most users would recommend the system to a colleague as a viable means to facilitate events and courses which would not take place otherwise. The main benefits are perceived to be convenience and cost rather than quality.

#### **6.4 Bad Points Noted**

Videoconference meetings are not considered good for more open meetings where the purpose is to spark off and develop ideas. Lack of visible body language is a difficult problem especially for the 'non-speakers', largely because they are not seen. A major limitation is that it is impossible to judge in the absence of body language, the reaction of others to what is being said. It is difficult to judge the appropriate moment to intervene, and difficult to access the impact of proceedings on persons who are not visible on screen. It is felt to only work really successfully when the participants know each other beforehand.

The system is not at present suitable where detailed documents need to be consulted or edited jointly. This presents particular problems for some subject areas such as mathematics where the limitation of having only one writing screen for writing is a constraint. It is not possible for example to see the writing and the speaker's face at the same time.

The service is considered efficient, but can give poor images and sound quality. The time delay makes conversation awkward, and even with zoom documents on screen remain difficult to read. There are particular problems noted where a video network meetings is held with no technician present to support the meeting.

Some users were concerned about the level of discussion indicating that this can remain at a superficial level. As a result, little work of a high quality is achieved, convincing some people that there is no substitute for a face-to-face meeting if any real depth of thought is to be achieved.

#### **6.5 Limitations Affecting Teaching Use**

The limitation to six active participants at any one site is seen as a problem occasionally, and there are some difficulties associated with managing more than 2 sites in a link. Limitation of number of students who can participate at each site was noted as a constraint by a number of users, indicating the need for more studios or lecture rooms equipped with these facilities. The video conference facility in Cardiff is considered rather small particularly as no other major teaching rooms are connected as yet.

The contact between tutor and student can sometimes be rather formal and awkward due to time delay and failures of speakers to appear on screen. Contact between students on separate sites can be a limiting and inhibiting factor as there is a need to speak rather loudly. The difficulty expressed in reading documents from screen - placing monitors closer to the participants might help, it was suggested by a number of people.

It is difficult to gauge the 'feeling' of the entire group of students, and little has been done to obtain direct feedback from the students during a session. There is a need for a member of staff at each site to ensure questions are asked and encourage feedback. The feeling is that for a less active students, it would be difficult for her or him to participate effectively in the two-way communication in the lecture/seminar.

#### **6.6 Future Use and Promotion**

Sharing the resources in the University is considered very important, and for purposes of intercollegiate teaching and meetings the network is valuable. Most users are keen to explore connections to other Universities and make international links, and consider that such facilities should be made available and promoted. The improvement in the use of tutor time in not having to travel long distances and time saving is considered one of the greatest benefits.

## 6.7 Advice to Users

Participants in this survey provided useful insights into local usage and offered valuable guidance on how to avoid some of the negative factors associated with video meetings. It is of particular importance is that the local experience in Wales is largely based on non-technical users who now represent the majority of current users. There is a strong view that training before using the system is essential. Planning and preparation of material before the meeting is important. A whole new range of personal skills have to be learnt i.e. talking to the camera, producing handouts, editing video tape, slide presentations. It is felt that each site should develop courses to initiate new techniques which is required in this medium.

Experience seems to suggest that sessions work well where those involved know each other. When this is not the case it is suggested that it is important that all those taking part introduce themselves in rather more formal terms so as to facilitate any subsequent dealings. It is also felt important to make a previous visit to the video room before the first session. To make full use of the facilities it is necessary to prepare the lecture or meeting in more detail than normal. In particular it is useful to provide OHP material as handouts in advance; including discussion periods in each 'lecture' is also important. Students like to see a face, hence breaks between OHP, etc are important. Students also need 2 or 3 sessions before they are used to the medium. Spontaneity can be lacking and interactions over the video may need to be more 'measured' than a normal session. Problems with time lag between sound and vision, and occasional poor quality visual image on screen have to be taken into account. Essentially the system is considered to be practical and easy to use.- It also demands -and gets - an extra level of concentration from the students.

Many users requested an 'idiots' guide to the facilities including written guidelines for use of remote control unit. Users agreed that its necessary to forget about the cameras and just get on with the meeting. Just another meeting was a common view, a video-network meeting is not essentially different from a face-to-face meeting.

Since the system is sound activated, do not make any sound that is not part of the discussion. Be prepared to speak up because to get a point across. Voice activated switching means vocal interjections are necessary to catch the chairman's eye!. Experienced users all offered the following advice :- Beware of coughing, shuffling papers etc.; remember the sound activation- look at your own image to avoid split screens - and speak up. Adjust the temperature of the room. Relax - Don't think of yourself as being on camera, just behave and talk naturally, but don't wave your arms about or make sudden movements. Speak clearly (not too loud or soft). Don't rustle papers - remember the system is voice/sound switched. Remember to use the mute button if you want to whisper to a colleague. Beware of position of microphones and speak up. Don't rustle papers as this can switch monitor pictures. It is necessary to remember that, initially at least, there is some loss of spontaneity. Compensate for some voice clipping during interchanges. Prepared documents should use large type, and be not too wide.

*Always* look-in on a conference first was a common piece of advice.

## 6.8 Commentary

The risk is that new systems may be seen initially as a technical challenge and not one a of changing the relationships and communication practices among various remote sites. Videoconferencing can remove barriers to communication by improving both its quantity and its quality. Meetings & tutorials etc. can be delivered more effectively rather than the same amount done more cheaply. It is more likely to augment travel, not necessarily replace it.

Video-conferencing presents a different kind of challenge because it brings distant learners together with a live tutor, and also with each other. The technology is still in its developing phase as far as most users are concerned, but in the light of rapidly decreasing prices of video-conferencing equipment is becoming more easily available.

Developments in the technology available have now made possible the construction of equivalent digital networks (to analogue) and digitally based multimedia systems can now be constructed. This opens up the possibility of multi-service campus networks which can convey an range of multimedia information types on a single network, giving economies of scale, flexibility and ease of management. In this environment, campus-wide distribution of audio and video information becomes a realistic proposition.

## SECTION III: STAFF AND TUTORS GUIDE

The advice presented here is based on experience gained in using the Welshnet service at the University of Wales since 1990. It is designed to take users beyond the BT Quick Reference Guide (which covers technical procedures for operating the equipment) to include suggestions for using the medium effectively. Although related to a particular video-conference system, there is general applicability to other systems, including the use of the video facilities available via SuperJanet.

The Welshnet system is available as a self operated 'turnkey system', with bookings made through a local booking co-ordinator. A degree of self-reliance and self-help is required to operate it, but generally the system is easy to use.

Many users have welcomed the savings in time and travel and have seen this as justification for setting up a video-conference meeting or tutorial, rather than make personal trips to remote sites. In practice people travel between remote locations for a variety of reasons, only some of which can be accomplished by videoconferencing. Trips are very often used to build individual and group relationships, for example. It is necessary therefore to identify, encourage and support good practice in the use of video-conferencing.

It is hoped that these guidelines will help new users and others to decide when and where it is appropriate to use videoconferencing for a given need, and how best to manage and facilitate the interaction.

### 1. GETTING STARTED

Experienced users stress the importance of sitting in on a session before taking part in a conference for the first time and when involved with a conference making time to meet face to face with other participants at some stage. It is a good idea therefore to schedule video-conferencing meetings with colleagues at other sites to review possible uses, and experiment with the technology.

Characteristics of the medium to note are:-

- *The short delay as the video signal is "compressed" so that it can be transmitted over the network links.*
- *The moderate to good video quality. This is not (yet) broadcast - quality video, so that nuances of participant expressions and interactions are easy to miss.*
- *The distortion of movement - one consequence of video compression is that movement appears blurred and jerky.*

As a consequence of these characteristics the medium can introduce barriers.

Looking at a video screen for example is more tiring for participants and facilitators alike, rather than looking at a live presenter. This might suggest, for instance, it is desirable to design more breaks and different activities into a video session than you would for a regular meeting.

## 2. THE MEETING FACILITATOR

The most successful meetings and sessions are led by an experienced video-conference chairperson or facilitator.

The role might be:-

*Introducing participants at the beginning of the session and chairing a session. Liaison with facilitators at other sites. The local facilitator will intervene as necessary to ensure that the local perspective is brought in and all participants are heard. It is difficult to 'read' the remote room on the video monitor.*

*Co-ordinating activities such as identifying needs, participation, invitations and room set-up.*

*Conducting follow-up activities - this could include work or practice groups, distribution of materials, collecting evaluations etc.*

As a minimum facilitators should be involved in a detailed dry-runs of a session so that all concerned understand their roles and activities.

### **Dry Runs, Practice, Rehearsal, and Direction**

Planning needs to be rigorous, the flow of visual aids and exercises through the medium needs to be practised and smooth. Develop contingency plans for things going wrong - technologies always seems to fail when you can cope least. The Chair/Facilitator needs to be coached and ready with activities if there is disruption in the video connection. Fortunately disruptions are usually temporary.

There is very little you can do in conventional classroom setting that cannot be done via a videoconference providing you adjust to the demands of the technology. The medium is not as forgiving as an ordinary face to face session so allow for little flaws in your design, preparation, presentation. Almost everything you know about how to create a successful learning experience or run a meeting directly applies to videoconferencing.

### **Conduct Introductory Training Sessions**

Introductory sessions could follow and expand upon initial demonstrations. The purpose is to give people the feel for the way an actual video-conference works, to provide them with a hands-on experience and to start introducing prospective users from remote sites to each other. Ideally groups should be small - five or 10 people at each site - so that everyone gets a chance to experiment, the training sessions should let them do that as well.

A training programme could be offered in three parts:-

- *A demonstration and discussion session.*
- *An off-line session where each site can work independently to let participants practise basic operations of equipment.*
- *A conclusion with both sites back on-line with the video meeting.*

### **Provide Continuing Support**

It will be necessary make provision to answer questions and provide guidance on an ongoing basis, especially while everyone is learning to communicate via video-conferencing. There may be a case for setting up a formal video-conferencing help-desk. The goal is to support new users at the early stage, ensuring that their first experiences with video-conferencing are as successful as possible.

## 3. TEACHING VIA THE VIDEO NETWORK

Video-conferencing requires different strategies and practices, particularly when used for teaching. Video-conferencing does not lend itself for example to workshops in which small groups of people are challenged to change their behaviours. This sort of teaching usually requires close interaction and feedback between a

facilitator. There are some answers to this problem, and it is possible to end up with a learning event that is more powerful and effective than if you were forced to travel to the remote site to run the session.

A standard course could for example be run over a longer period giving participants a greater chance to practice new skills between sessions. Introductory meetings can be held ahead of time to let participants get to know each other and to work on any barriers that may exist.

As a general rule the standard good practice for the design and delivery of classroom teaching applies to videoconferencing. However many rules must be followed more rigorously, and a few new ones must be added. The instructional design process, for example usually needs to be more exact. Impromptu take up of a discussion on a flip chart or a white board is more difficult if you do not have an appropriate camera pre-set. Tutors have less flexibility in expanding the number of participants or changing the room set-up if everyone is to be included in the picture.

### **Separating Learning Objectives**

Lectures and presentations that introduce facts, concepts and background information lend themselves well to direct adaptation in the videoconference medium. Skills development requires practice and related face to face sessions for reinforcement; such feedback is best done off-line. If significant changes are required of participants they will need the opportunity to challenge assumptions. This suggests a locally led discussion. Long workshops can be redesigned into several shorter modules. Take advantage of the opportunities to travel instantaneously via the conferenc itself.

Video-conferencing is a fatiguing medium ; a good rule is to allow for sessions to be 1 hour maximum. For the 'special' guest lecture it might be possible to allow for more than one hour, but plan to break up sessions. As a rule of thumb allow more time for everything because of extra pauses due to transmission delays 5-10 % longer might be typical compared to a conventional classroom.

Design in some opportunity for the facilitators at other sites to take the limelight - the medium does inhibit participation. Remain conscious of the need to draw out participants and encourage interaction especially at remote sites.

## **4. PREPARATION FOR A SESSION**

### **Checklist**

- *Arrive early (say 10mins); test all equipment you will be using.*
- *Adjust the monitors, cameras, tables, chairs for minimum movement during the session and enter camera presets.*
- *Adjust lights (if necessary and possible); lighting should be on the front of participants to avoid distracting shadows.*
- *Make contact with your receiving facilitators.*
- *While people are assembling, focus the main camera on some non distracting visual object; and make sure the microphone is on mute. A good idea is to use a flip-chart or white board displaying the agenda or a welcoming message. Muting the microphone alleviates confusion caused by miscellaneous noise and conversation being transmitted.*
- *Avoid bright jewellery or clothing that is heavily patterned. This can cause greater distortion of the video image during movement.*

## **5. RUNNING THE SESSION**

Have all participants introduce themselves, maybe through an introductory ice-breaking session, Introductions are critical in this environment to help alleviate its inherently less intimate and less personal nature.

If there are large numbers of participants at both delivery and receiving sites, avoid focusing on one group or the other. A common tendency is to present just to the video monitor and not to the participants - try to avoid this. Support your other facilitators by introducing them, describing their role and thanking them at the conclusion of the meeting.

Project your voice and speak clearly; keep language free of jargon and needless complex words. All participants need to be able to hear and understand easily.

Keep physical movements to a minimum. Excessive movements of the camera will cause distortion of the video image. Remember the transmission delay and allow extended pauses for others to comment. Discourage side conversations that limit discussion and cause distractions. Don't shuffle papers or tap objects near the microphone

Go well prepared for a meeting. Be prepared to speak up because if you do not, you will not get the point across. People need a certain level of confidence to take part in a meeting. Keep to a well defined agenda. A video-network meeting is not essentially different from a face-to-face meeting, but remember only 'one' person at each centre is chosen to handle the controls.

Voice activated switching means vocal interjections are necessary to catch the chair's eye! Video conferencing is more intense and demanding than meetings on a face-to-face basis.

Ensure you understand how the system works, especially that any sound you make puts you on screen i.e.. the system is noise activated. Beware of coughing, shuffling papers etc.; remember its sound activated. Look at your own image to avoid split screens. Speak up. Adjust the temperature of the room.

Relax - Don't think of yourself as being on camera, just behave and talk naturally, but don't wave your arms about or make sudden movements. Speak clearly (not too loud or soft). Don't rustle papers - remember the system is voice/sound switched. Remember to use the mute button if you want to whisper to a colleague.

Training before using the system is essential. Planning and preparation of material before the meeting is important. A whole new range of personal skills have to be learnt i.e. talking to the camera, producing handouts, editing video tape, slide presentations. Each site should develop courses to initiate new techniques which are required in this medium.

Experience suggests that sessions work well where those involved know each other. When this is not the case; it is important that all those taking part introduce themselves in rather more formal terms so as to facilitate subsequent dealings. Make a preliminary visit to the video room before your first real session. To make full use of the facilities remember to prepare the lecture or meeting with more detail than normal.

## **6. VISUAL AIDS**

Regardless of which type of AV you use always send a hard copy to the receiving sites prior to the session. Fax or mail/email copies of everything you have prepared ahead of time. Videos are always clearer if they have accompanying notes.

Graphics such as charts are better than text. Tables etc. are difficult to read at remote sites because of the distortion in the video signals. Use handouts together with your own verbal description. Prepare overhead slides as normal, but each visual should be limited to one idea or point; use large letters (36-point fonts) and limit yourself to 5-8 lines per transparency

## **The Document Camera (Display Stand)**

### *Advantages:*

There is consistency between what is seen at all sites. It is easy to photocopy and mail documents to each site. The Welshent studios are equipped to send pictures of documents, objects, OHP, or 35mm slides. OHP and documents can be written on during presentation.

### *Disadvantages*

Poorly constructed visuals will detract from the presentation - the image may not be very clear at remote sites. It is only possible to see the current image transmitted and other participants cannot be seen at same

### *Techniques*

Establish camera presets (Zoom /Focus) before a meeting starts. Send hard copy to remote sites before the session starts. Use a suitable pointers (e.g. pencil) to identify a points. Remember to keep physical movements to a minimum to avoid distortion and distraction.

### *Suitability:*

Delivery to large local audiences, and smaller remote audiences, when content of visual is a valuable focal point. Remember the visual can be treated as a 'working' document- you might wish to write on it during a session.

## **Using the Auxiliary Camera**

### **Flip Charts/White Board**

#### *Advantages:*

Useful for spontaneous exposition. Takes little preparation or experience to use.

#### *Disadvantages:*

Hand-written images may not be clear or legible. Usually requires more physical movement - producing distortion. Difficult to provide hard copy for remote sites.

#### *Techniques:*

Use a black pen to ensure legibility; establish appropriate camera presets (Zoom/Focus) before meeting. Verbally check legibility with other sites.

#### *Suitable where:*

Groups are small and informal. Meeting involves free-flow discussion, and visuals need to be created during the meeting.

## **Video Player-Recorder/PC Graphics**

### *Advantages:*

Image sent will be clearer than OHP, and can be written to interactively if a PC. The video recorder can present lengthy moving image clips, derived from a variety of sources.

### *Disadvantages:*

When in use it is not possible to see participants at the sending site at the same time (graphic will appear on one monitor and your own image on the other). It is difficult for remote participants to participate in discussion. Rapidly moving images will be distorted.

### *Techniques:*

Actively facilitate participation at remote sites by allowing pauses and asking questions. Keep physical movements to a minimum to avoid distortion.

### *Used:*

When visual is an information resource, and participants do not need to see people and documents at the same time.

## **SECTION IV: THE VIDEO-CONFERENCING CHECK-LIST**

This one-page summary of the staff and tutors guide has been prepared as an aide-memoire and a studio handout.

# THE VIDEO-CONFERENCE CHECKLIST

## Planning a Session

*Being well-organised and rehearsing anything new is important so:*

- \* Decide who will chair the meeting, and who will make the booking arrangements.
- \* Decide who will be the local facilitators at each site, responsible for making sure the studio is unlocked and set up for the meeting.
- \* If you have not used videoconferencing before, try to sit in another meeting and get a 'feel' for the medium, and have someone show you the controls.
- \* Note the phone numbers of the other studios, sites, AV & network support contacts.
- \* Circulate agenda, papers, or hand-outs in advance.

## Before Starting

- \* Adjust monitors, cameras, tables, chairs for minimum movement during the session; enter camera presets if any.

## Running a Session

*Role of the Chair/Facilitator*

- \* Start the meeting with a round of introductions, inviting each site to introduce themselves in turn.
- \* Support co-facilitators by introducing them, describing their role and thank them at the end of the meeting.
- \* For each major topic, pause regularly - ensure all sites are invited to speak.
- \* Close the meeting with another round of farewells.

*Role of the Participants:-*

- \* Check that you appear properly on camera (use the 'confidence' monitor).
- \* Be ready to respond to the chair's initial round of introductions.
- \* Have a list of the phone numbers of the other studios to hand - just in case.
- \* Use the mute button if you want to whisper to a colleague.
- \* Avoid frequent interruptions - once on camera it is better to make your contribution as a collected statement.
- \* Avoid shuffling papers or tapping objects near the microphone.

*General:-*

- \* Relax - don't think of yourself as being on camera, just behave and talk naturally.

## Visual Aids

*A clear simple image is important so:-*

- \* Use charts and graphics in preference to text.
- \* Keep visuals limited to one idea or point; use large letters (36-point fonts)
- \* Send hard copies to partner sites prior to the session.

## Teaching

*Video is a 'remote' medium so:-*

- \* Try to arrange for the class to meet face-to-face as well as through video.
- \* Use the first 1-2 sessions as acclimatisation for the class to get used to the medium.
- \* Have a local course tutor/mentor available at each site - useful for both students and staff!

## **SECTION V: REFERENCES AND LITERATURE**

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## APPENDIX 1: INDIVIDUAL USER COMMENTS

Each section of the questionnaire form (see Appendix II) contained space for individual user comments to be recorded. This appendix contains the text of the comments received, sorted and numbered under the original questions.

Q8. *"Please indicate the extent of basic training you received before taking part"*

No formal training, but I learnt by observation.

Q9. *"How would you rate the importance of training received"*

I had virtually no training but got on okay- a little training would be helpful.

Better communication between the booking office and the porters lodge (Redwood) Please.

Immediate help is needed to deal with problems e.g. no sound!!

Training for on screen 'body language' and 'eye contact' needed.

My answers are largely non-committal. My colleagues and I have learned how to use the system 'on the job'. I have no doubt that with a careful training session, we could use the network more effectively.

Training in preparation of materials (e.g.. correct sizing) is essential.

I was not involved in training and I think it is probably unnecessary except for a few printed guidelines.

Q13. *"Please comment on the structure of a video-conference meeting"*

It depends - large meetings need to be more formal - small meetings (4 or less) can be less formal.

The network works well if meeting is fairly structured.

The system also works very well for more informal discussions for which no agenda is necessary. For a formal meeting a Chairman, Agenda and Minute Secretary are vital.

The joy of the network is that it enables informal meetings for discussion to take place without chaos ensuing.

The structure of a video-meeting should correspond to a normal face-to- face meeting.

It also depends on the type of meeting; research discussions can be ad-hoc and exploratory and work well.

The Secretary and Chairman should be at the same site (very important)

A chair sympathetic to how the network functions is essential - it is necessary in order to 'draw out' members in all centres.

It depends on the size of committee - 3 is very informal, 10 needs more formality to work effectively.

Q17. *"Please comment on any point where you found the video network to be especially useful, or especially unhelpful in conducting a meeting"*

I would like to see the system expanded to include all H.E. institutions in Wales, but there technical problems with sound delays, and slow motion.

Delay in picking up speakers, organisational and structural chaos at other ends.

Routine business can be done quickly

I like the University of Wales equipment and set up, and that it is in my building!; my problems outweigh the any convenience for me.

It doesn't have the flow and momentum of face-to-face meetings - although that can be a positive benefit when you have chatty or undisciplined groups.!

Constraint on time is a good description of how it works - meetings tend to be shorter than 'eyeball' type.

Its not as good as face-to-face meetings, but the cost-benefit is positive.

Useful for meetings with a fixed or limited agenda. Particularly useful for Project Grace - an all Wales project involving the 4 Adult Education/Extra-mural Departments. Its a wonderful time saver, and wonderful back-up to face-to-face meetings.

Saving in time and travel mean that its more likely that a member of a committee /group will participate.

Good for quick informal meetings at short notice to find out what other people are thinking. Less useful for formal meetings involving negotiations as its much less easy to pick up on non-verbally from the other participants. Not so good for more open meetings where the purpose is to spark off/ develop ideas.

Helps to structure conduct of a meeting; ad-hoc intervention is difficult.

Good point is the ability to put supplementary written material on the system via the document camera. Problem is the lack of visual feedback when speaking particularly if you are in the chair.

Lack of body language is very difficult problem especially of non-speakers, because not seen.

Imposes a structure on a meeting, need to give the chair a stronger hand, makes people prepare before hand. Not as suitable where detailed documents need to be consulted or edited jointly.

Extremely useful for research discussions and seminars. Allows for more frequent meetings than otherwise possible. Particular good for one-to-one discussions. Allows for meetings with a limited time span. limited to one writing screen and not so good for mathematics. Cannot see writing or speakers face at same time. Lack of a computer link on current Welshnet.

Requires very good time management, and the inconsistent sound quality is very annoying.

We can 'meet' quickly and easily, discuss and identify way forward etc. - and it saves so much hassle.

Should enable University- wide meetings to be called at short notice.

Enables contact to be made - with minimum cost to department.

Quality of pictures, and poor sound poor, problem is video network meetings are held with no technician present to support meeting.

Saves valuable time normally spent travelling; Voice activated of camera can be irritating when people drop books, pencils etc.

I feel the use will not improve until more participants can see and be seen at the same time.

It only works really successfully when the participants know each other beforehand. It is a disadvantage that you cannot see your own 'team' and the speaker at any given time.

The Swansea Computer Centre cannot always be relied on to throw the vital switch - It should be controlled from the audio visual suite.

The sound quality is inadequate: though in technical terms the video channel carries more information than the sound channel, in human terms the reverse is often the case.

The video conference produces well structured tightly run meetings; little time is wasted. People say what they have to say without going on at length. I guess it cuts meeting times by 30%.

Problem, there is no chance for informal 'testing the air' before or after a meeting!

Very efficient on time - no real disadvantage compared with face-to-face meetings.  
Higher resolutions transmission of data is required (particularly document cameras).

Usually guarantees a fairly good attendance especially for Bangor representatives, as meetings are usually held in Cardiff.

Problem is I can't table papers at the meeting now.

Since I have been involved with the network from the start, I find I regard it as very much part of my 'tools of the trade' and find it very easy and user friendly.

When technical faults occur, it can be very frustrating because one is usually helpless to do anything to put it right.

Big problem is no help available for breakdowns, meeting becomes an absolute waste of time.

Saving of time, but for Pure Maths Seminars (my only experience) the medium is poor.

Problem is timing and body behaviour assume different forms over the network

Discussion highly focused, and keeps to the point. Delayed image and slow voice controlled switching is sometimes disconcerting.

USPs are a bloody waste of time so I have nothing to add!!!

Wonderful not to travel, but meetings can be a little stilted.

Saves time/travel, but very poor for committees which require detailed, technical discussion.

Frequency of contact is increased.

Saves time and money; concentrates members attention to agenda items - USP would be virtually impossible for secretaries without it now.

It is bad that there are few opportunities for individuals to 'connect' over the network.

Next best thing to a personal meeting, but discussions are limited to one person at a time.

An efficient system, but gives poor images/sound quality and is technically unreliable.

Saving time - "knitting" colleagues together, making lecture courses possible.

Lack of access to the remote location at Cardiff is a problem.

The system provides low quality pictures - primitive technology?

Good point is- saving in travel, and greater facility for organising meetings.

Bad point - inability to have more than one site on screen, and the time delay makes conversation awkward, even with zoom, documents on screen remain difficult to read.

Very useful and expedient in dealing with fairly routine matters or un controversial issues. It is difficult to access the impact of proceedings on persons not visible on screen - need multiple monitors to enable all centres to be simultaneously displayed.

Saves time;

I have now had 20 meetings on the video network and the thing which I note thinking about them is that the level of discussion always remains at a superficial level. As a result, little work of a high quality is achieved. With each meeting I go to I think less and less of the system as a communication tool. I am now convinced there is no substitute for a face-to-face meeting if any real depth of thought is to be achieved. The reverse of this is that the Video-conference is a good system for forcing something through a committee with little comment!!.

Quick response for an urgent meeting between sites (24hrs). Break down of equipment is a problem. More training should be given before the first session on the network i.e. planning, preparation, camera presentation, more knowledge of the equipment.

The major focus is the saving of travel/time which make up for any deficiencies.

Bad points:- limitation is that it is impossible to judge in the absence of body language, the reaction of others to what is being said. It is difficult to judge the appropriate moment to intervene.

Q20. *"Has the videoconference facility made it possible to run a course which otherwise would not have happened?"*

No use yet made of the network for teaching. I am looking into the possibilities /practicality of using the Network for teaching options/modules of Welsh Women's History which might be open to individuals on Women's Studies Masters courses involving Bangor, Cardiff, and Swansea.

Wonderful way to expand Welsh medium provision cost-effective and convenient.

It has led to the setting up of an all-Wales specialist group in Electron Microscopy.

A long series of seminars in Mathematical Physics and Physical Mathematics.

Aids in liaison/tutor support with students on clinical placements in Mid/S.Wales.

We can provide audiences large enough to put on specialised talks, and to make it worth while to get in outside speakers.

Preparatory and back-up lectures and tutorials for Post-Grad. courses are essential.

Travel expenses would have prevented Post-Grads from attending regular 'live' seminars across 3 campuses.

Assembles a 'critical mass' of students that makes lecture worthwhile.

It was planned from the start as a inter-collegiate scheme, with Historical modules taught over the video-link.

Q30. *"What are the major limitations in using the system?"*

Booking is difficult. Can't we access directly via Internet (or something!) ?

Biggest problem - Swansea studio is used for general teaching. Surely it would be better to have dedicated studios as in Aberystwyth.

- It is useful to provide OHP material as handouts in advance.
- Discussion periods at each 'lecture' are important.
- Students like to see a face hence breaks between OHP, etc are important.

Limitation of number of students at each site. Multiple lines out of each site will be needed as use develops. Urgently need more studios or lecture rooms equipped with these facilities.

Transmission of only one image from each site is a problem- you can't see the lecturer and what they might be writing. To some extent, image quality and difficulty of using blackboards with the system. Occasional unreliability of the system is still a problem.

Students need 2 or 3 sessions before they are used to the medium - spontaneity is a bit lacking - Interactions over the video need to be more 'measured' than a normal session. Problems with time lag between sound and vision, and sometimes poor quality visual image on screen. Essentially the system is practical and easy to use - It also demands (and gets) an extra level of concentration from the students.

The video conference facility in Cardiff is too small and no major teaching rooms are connected - Swansea seems to have done better.

Size of studio, fact that monitors do not show remote site and transmitted documents. Remoteness of UWCC studio facility from my department. Students tend to be inhibited about asking questions.

- Contact between tutor and student rather formal and sometimes awkward due to time delay and failures of speakers to appear on screen.
- Contact between students on separate sites limited/inhibited - need to speak rather loudly (more sensitive microphones would help).
- Difficulty in reading documents from screen (monitors closer to participants might help??).
- Limitation to six active participants on one site has been a problem occasionally.

Little or no direct feedback from the students . It is more difficult to gauge the 'feeling' of the entire group of students. You do need a member of staff at the 'other end' to ensure questions are asked to get some feedback.

Difficult to manage if using more than 2 sites in a link.

Transmission of only one image from each site - you can't see the lecturer and what they might be writing. To some extent, image quality and difficulty of using blackboards with the system. Occasional unreliability of the system is still a problem.

I use the network for the entire term, and I was not able to meet students personally. This was the greatest drawback. I have drafted a paper on these issues - available on request.

For a less active students, it would be difficult for her/him to participate the two-way communication in the lecture.

Q31. *"Please comment on future use and promotion"*

Sharing the resources in the University.

For purposes of intercollegiate teaching and meetings the network is valuable, but I do not see the scope for further promoting its use.

At Post-Grad level, network makes courses efficient

I have found the system impressive for 'looking in' on special lectures.

Under present arrangements the scheme makes a course possible which would otherwise be impossible on economic grounds.

The Physics Dept's. are planning to greatly extend their teaching on the network, especially in post graduate and final year Physics courses.

Connections to other Universities should also be made available and promoted.

Very important for extending Welsh medium provision.

International links need to be improved/developed

Improves use of tutor time in not having to travel long distances.

Saving of staff time in travel; spreading of expertise, drawing expertise together.

The experience at post-grad level is that one can introduce students to a much wider range of topics than would be possible locally.

Time saving is greatest benefit for me.

I see considerable institutional disadvantage in promoting the video network. there are also teaching quality assurance problems.

Allows students access to the whole range of specialist teaching in the University.

Q35. *"Please comment on the booking arrangements"*

The video is now more heavily used than a year ago (it seems ) and one needs to book in advance.

I have never had problems getting slots required - though greater use may make that more difficult.

The computerised booking system is efficient. The central 'bookers' are effective.

The only problem I have had is, on rare occasions the local studio has been locked and not ready for use at the booked time

Very friendly and efficient technical assistance, but some lack of communication ( especially bookings made at SWANSEA!).

Very occasionally there are difficulties in getting onto the system and subsequent delays.

I make the bookings on behalf of the Registry and therefore I have completely free access to the booking system which is obviously very useful since I can check on availability etc.

Problems with unbooked sites or site switching in/at awkward times can cause severe technical problems. Sometime caused by network switchings not being controlled from/by the conference itself.

A direct booking facility via computer terminal would be preferable - there are too many intermediaries in the booking chain at Aberystwyth.

Because it is not well promoted, the procedures can involve phoning for a booking form, and therefore a time delay. I have also once ended up being double booked!

Q39. *"Is there any advice or comment which you think would be particularly helpful to give to people before they start to attend a video network meetings"*

Forget about the cameras and just get on with the meeting.

It's easier than you think!

Go well prepared if its a meeting. Be prepared to speak up because if you don't , you won't get the point across. People need a certain level of confidence to take part in a meeting.

Organise effective training sessions.

The careers service at Aberystwyth is linked into the SW regional training group of ACCAS. This involves all institutions west of Oxford and south of a line from Oxford to Aberystwyth. It would be helpful for these institutions to be linked together.

It is not that mysterious! This questionnaire seems to neglect the research potential, and value for communication between research groups.

A Welsh language version should have been provided of this questionnaire

(i) Don't be scared - it doesn't bite!

(ii) Use an OHP pen (black) for writing and do not cram too much on your page.

(iii) Try out the facilities before hand - especially if the outcome is important to you.

Keep to a well defined agenda.

A video-network meeting is not essentially different from a face-to-face meeting. Only 'one' person at each centre be chosen to handle the controls.

Participants should not be slow in coming forward!. Voice activated switching means vocal interjections are necessary to catch the chairman's eye!

Video conferencing is more intense and demanding than meetings on face-to-face basis.

An 'idiots' guide to the facilities available would be helpful. Many people like myself were unaware of things like the document camera and how you can show the participants plus the document on a split screen.

There is initially at least , some loss of spontaneity , and bit of voice clipping during interchanges.

Written guidelines for use of remote control i.e.. which button does what.

Make sure you get the required 10 min training and rules of etiquette.

The college should give some technical support and advice to those using the service.

Speak clearly and firmly to activate the controls.

MAJOR POINT - I want the video-conferencing on MY desk please! Lets catch up with the technology.

Prepared documents should use large type, and not too wide.

Ensure you understand how the system works, especially that any sound you make puts you on screen i.e.. the system is noise activated.

Beware of coughing, shuffling papers etc.; remember its sound activated- Look at your own image to avoid split screens - Speak up. Adjust the temperature of the room.

Relax - Don't think of yourself as being on camera, just behave and talk naturally, but don't wave your arms about or make sudden movements. Speak clearly (not too loud or soft). Don't rustle papers - remember the system is voice/sound switched. Remember to use the mute button if you want to whisper to a colleague.

Beware of position of microphones and speak up. Don't rustle papers as this can switch monitor pictures.

Just another meeting - Don't think about the technology, or the circumstances.

Since the system is sound activated, Don't make any sound that is not part of the discussion. People who mutter, are a menace!!.

*Always look-in on a conference first.*

There appears to be no definite procedure for making bookings. The departmental secretary had to make several calls simply to find out who might take bookings.

Important to speak audible into the microphone.

training before using the system is essential. Planning and preparation of material before the meeting. A whole new range of personal skills have to be learnt i.e. talking to the camera, producing handouts, editing video tape, slide presentations. Each site should develop courses to initiate new techniques which is required in this medium.

My experience suggests that sessions work well where those involved know each other. When this is not the case I suggest that it is important that all those taking part introduce themselves in rather more formal terms so as to facilitate subsequent difficulties.

Make a previous visit to the video room before the first use. To make full use of the facilities one has to prepare the lecture or meeting with more detail than normal.

Q40. *"If you have used the network in the past but do not intend to use it again - please explain"*

I do not intend to use the conference for teaching. For meetings it is useful - for teaching it threatens the structure of academic institutions, and is unsuitable for the student contact part of quality assurance.