Managing, Delivering and Supporting Lecture Room Services for the Multimedia Age

Workshop

28th April 1997

Burleigh Court

Loughborough University

Contents

Managing, Delivering and Supporting Lecture Room Services for the Multimedia Age

Executive Summary

A workshop was held on 28th April to discuss this very important topic. The workshop was oversubscribed reflecting the timeliness of this workshop supported under the JISC Technology Applications Programme (JTAP). There were 67 people from 49 institutions participating in the event which involved presentations and, importantly, group discussions allowing time for debate of the issues raised by speakers and by participants in their application for the event. The aims of the workshop were to discuss the issues at strategic, management and operational levels in supporting lecture room services for the multimedia age and to come up with recommendations for institutions and for funding bodies such as JISC.

In introducing the workshop, Dr Anne Mumford noted 2 extracts from the JISC Strategy:

> "The very rapid rate of technological change in IS and IT makes it essential that the community is well informed of developments when they are of proven value. The difficult financial climate in HE makes it essential that these opportunities are identified in a well focused way, in consultation with the community, and that duplication of effort is avoided."

and

> " ... the opportunities presented by IT are outstripping the ability of the sector to assimilate and exploit them."

This workshop was held to address these points with regard to the provision and support of lecture room service.

This event followed an earlier event on "Multimedia Presentations" which was presented by Sue Cunningham at the workshop and which is reported in AGOCG Report 29.

The Issues

Technology is moving fast and we cannot predict what the requirements will be in 5 years time (or perhaps even next year!). This makes it difficult to plan long term upgrades to lecture theatres to support the demands of teachers. Unless we do, and we provide support for lecturers wishing to use technology in any facility they may wish to use, then we will not encourage use of information systems and people will use the safest option of lowest common facilities available. In opening the event, Professor Ted Smith urged a brave, adventurous and flexible approach to introducing technology which we cannot predict and which we have to accept will become obsolete within 5 years (at best).

Barbara Watson noted that the use of IT in lecture theatres is one aspect of the wider issue of the effective use of IT in Higher Education. The forthcoming Dearing report was referred to a number of times during the day as it is widely expected that the use of IT will form a major part of the report. Barbara noted that although lecturers did need support and training, that systems needed to be easy to set up and use with problems able to be solved when they occur with minimum disruption. Multimedia offers the lecturer many benefits including: satisfying educational objectives; increasing students understanding; demonstrating events, showing places, conducting experiments which would otherwise be impossible. Lecturers do not use equipment because they may not know of its existence and potential; because they have (real or imagined) concerns about reliability; because they are not confident about its use.

Discussions

Each of the groups took an area of discussion under one of the following themes:

- • strategy and management issues
- • providing teaching facilities
- • supporting and encouraging lecturers
- • supporting flexible learning

The recommendations which came out of group discussions noted that any solutions incur costs in terms of equipment purchase and upgrade as well as ongoing support and maintenance The recommendations also note that the "people issues" are as great as the technical ones and that training, awareness and ongoing support need to be properly resourced if we are to take advantage of the technology.

The main discussion points from the groups were as follows:

Management

There is a lot to be said for the provision of central services for lecture room equipping and ongoing maintenance and support. Sites need to be encouraged to define service levels. We must be able to justify the financial investment and to be able to measure the costs, effectiveness (for both lecturers and students) and cost recovery. Technology might provide quicker and slicker solutions, but are they better? The workshop recommended that a series of case studies should be undertaken which describe different approaches taken to making technology available in lecture rooms. Such case studies would enable sites to learn from each other. These should include sites of different sizes and should also consider the option of leasing. It was also recommended that a set of business plans and other material (cost benefits, examples, quotes from strategic documents) should be put together as a portfolio for making cases for equipment provision and support.

Staff Development

This is critical if sites are to be successful in introducing equipment which gets used. A minimum critical mass of support staff is a pre-requisite for success.

Evaluations

Evaluations should be carried out of equipment to support lecture room services and to underpin the increasing need for flexible learning. Any evaluation should provide criteria for evaluation and then conduct an evaluation. The criteria can be used again by a site wishing to conduct a market survey at any point in time. A database of the information collected should be made available via the WWW. It is necessary to update this and a mechanism for this needs to be put in place. Minimum specifications need to be proposed for different types of facilities. A further suggestion to have "show rooms", perhaps provided by industry to show latest technology, would help those seeking solutions at any point in time.

Standards

If facilities are to be successful in the lecture room and elsewhere, standards are an important aspect of the service provision. Online demonstrations for use in the classroom and teaching resources for self study need to be able to be provided in a predictable, reliable way. Acceptance of standards by those developing materials which have central funding followed by promulgation and adoption at a local level is needed.

Institutional Capital Projects

Sites need to be encouraged to think about potential technologies when upgrading their buildings. Even if equipment is not put in place it is important to ensure that wiring is available for the equipment which may be installed at a later date.

Summary of Recommendations

Strategy and Management

Advice to Sites

1 sites should set up Service Level Agreements (SLAs) with a minimum specification on what can be delivered to particular facilities.

2 sites should have strategies to work towards self-drive of equipment by lecturers.

3 facility booking should be a service spanning a range of services (rooms, computers, AV).

4 national facilities should be promoted within sites.

5 sites should have a plan for equipment security.

To JISC/AGOCG

6 a set of case studies should be commissioned to report on current practice (good/bad). This should include the approach taken to facilities of differing sizes across different types of institution. It should address the effect of different management models and the provision of learning resource centres (one-stop-shops).

7 a report should be commissioned to study the possible benefits of leasing rather than purchasing equipment.

8 a portfolio should be put together containing management-persuading quotes (e.g. from JISC Strategy) and examples of good practice. It should also contain statements on the cost benefits of introducing IT into teaching and learning and widely into the classroom situation.

9 advice should be provided on minimum requirements for lecture facilities.

10 national support facilities and services should be better promoted.

Provision of Teaching Facilities

11 a database should be set up containing criteria for selection and evaluation of technology available for lecture room services and, based on these, an evaluation should be conducted. This should include mobile kit for a short term solution. It needs to be ongoing if it is to be useful over a period of time.

12 sites should be encouraged to set up cross departmental support for facilities, such as video conferencing.

13 we should liaise with industry to set up show rooms of facilities for people to look at when they need equipment.

Staff Development

14 sites should put in place (and JISC and others (UCISA, UCoSDA) should encourage) staff development programmes at a range of levels to make staff comfortable with the technology available.

15 JISC and other national agencies, as well as sites, should have a strategy for staff development to ensure full advantage is taken of technology and of national initiatives such as TLTP.

Standards

16 we need to maintain a dynamic approach to standard development and adoption.

17 information and advice on standards should be made available through a WWW site. This should include information on internet, hardware and video conferencing standards.

Managing, Delivering and Supporting Lecture Room Services for the Multimedia Age
Dr Anne Mumford

Sites are under pressure to make provision for multimedia delivery in lecture rooms and conference facilities. The provision is difficult to manage in terms of supplying suitable facilities to those with the requirement. Teaching staff wish to make use of resources generated through programmes such as TLTP as well as in-house initiatives. Appropriate facilities need to be provided for both teaching and student self-study. At the same time, the technology is moving on and it is difficult to manage a phased implementation to ensure the provision of up-to-date equipment which meets the demands.

This workshop addressed the issues caused by these demands and made recommendations for ways in which sites could be assisted in taking on these new technologies in the classroom.

The workshop is part of the programme being run by JISC (Joint Information Systems Committee of the HE Funding Bodies) to examine the potential use of technology within a range of areas of concern to Higher Education. This JTAP (JISC Technology Application Programme) project is being run through the Advisory Group On Computer Graphics (AGOCG) who run a programme of technology awareness activities concerned with the potential and use of computer graphics, visualization, multimedia and virtual reality.

The recently published JISC Strategy states:

"The very rapid rate of technological change in IS and IT makes it essential that the community is well informed of developments when they are of proven value. The difficult financial climate in HE makes it essential that these opportunities are identified in a well focused way, in consultation with the community, and that duplication of effort is avoided."

and:

"the opportunities presented by IT are outstripping the ability of the sector to assimilate and exploit them. More guidance and education is required, as is a greater degree of awareness of the benefits and pitfalls of technological opportunities."

This workshop was aimed at addressing issues which reflect the concern of JISC, through AGOCG in this case, to examine the potential of technologies and to address the issues of introducing the technology both in terms of the technical problems and the human and organisational issues.

The aims of the workshop were to:

- • identify the issues
- • exchange ideas
- • make recommendations
- • start the action

The workshop attracted 67 people from 49 sites reflecting the considerable interest in the topic being addressed and the timeliness of the workshop.

The format of the workshop was a series of introductory presentations followed by group sessions to tease out the issues and make recommendations to a plenary session for approval and subsequent forwarding to funding and decision making bodies through AGOCG. The presentations and group discussions are presented in this report. The agenda for the event and the list of participants are given at the end of this report.

Presentation Systems — Professor Ted Smith

We have had many advances in presentation technologies over the years. The teacher has had tools from blackboard to whiteboard to bandas to photocopiers to slides and TV and video. The pupil has moved from slate to ink well to fountain pen to biro and now has access to printers and plotters.

Ted Smith challenged the group to consider the question:

> "could your parents have predicted what you are doing today?"

and, if not:

> "can you predict what your children will be doing tomorrow?"

He led from this to suggest that if 80% of today's IT systems will be obsolete in 5 years time, we need to be adventurous in our aims and always ready to alter plans.

We need to be addressing the needs of a range of people participating in Higher Education, including: students, lecturers, researchers, support staff and we must be catering for special needs.

In the future we will have access to:

- • multimedia input and output -— text, audio, graphics, data, video
- • virtual worlds -— both immersive and non-immersive
- • we will be able to provide systems which offer stimulation of new modalities -— taste, feel, smell

and we must be able to take advantage of these whilst recognising our responsibility to offer support for special needs.

Ted Smith's vision of the future sees the teaching room of the future geared up with lots of high technology features. We will have virtual reality facilities to extend the learning process. There will be fully equipped media and sensory labs in all major buildings. All teaching rooms will have SVGA-quality projection facilities. Lecturers and students will have lightweight portable workstations with gigabytes of memory, wireless transmission and full screen real-time video. We will be able to "print" in 3D to the desktop for design and modelling applications.

We need this and will be driven this way because we live in a visual world. Jobs will demand multimedia literacy. This technology will enable better communication with electronic media enabling easy transmission and access to facilitate groupwork, home study and just-in-time learning.

All staff and students will need to respond by gaining IT and presentation skills which will become a job requirement. All staff will have a workstation on their desk and easy access to media labs for input and output.

In conclusion, Ted Smith suggested that:

- • we are moving towards a visual, sometimes virtual, wireless world
- • we need to work in 3D
- • we need to use all sensory modalities

and......

- • we ain't seen nothing yet!

Increasing Awareness on Using Multimedia in Education — Barbara Watson

Barbara Watson started her presentation by noting that the use of multimedia in teaching is, of course, just one aspect of the wider issue of the effective use of IT in Higher Education.

In encouraging use of multimedia in teaching, there are 3 main issues:

- • cost —- reliable equipment is very expensive
- • awareness -— lecturers will make effective use of the technology if they are aware of its potential and trained in its use
- • training —- ongoing and intensive training programmes are needed

Lack of awareness is a major problem for many academic staff who may not be fully appreciative of the educational potential of IT when appropriately used, or of CAL applications which may be available. Even if they are aware of the potential, they may not have reliable access to suitable lecture theatre facilities or sufficient support to feel comfortable with making use of facilities available. Barbara noted that few lecturers watched other staff teaching and that this could prove a useful training method. The use of IT at conferences is becoming more common (though not always better!) and this may be an additional incentive to staff to use presentation technology.

Staff need support within institutions from:

- • educational technologists —- to advise on the evaluation of IT materials and the integration of IT within the curriculum.
- • trainers -— to train academics how to use the equipment confidently and to be able to set equipment up in 10 minutes. They need to be shown the pros and cons of different types of equipment. The training needs to be ongoing to ensure confidence is maintained and knowledge kept up-to-date.
- • technicians —- to ensure the equipment functions, is reliable and works when it is meant to.

Teaching staff need to make decisions about whether they will develop their own materials or use existing systems.

For presentations do-it-yourself is clearly appropriate and there are many tools and an emerging set of experience of good practice. Software tools such as PowerPoint, authoring packages such as ToolBook and HTML editors such as Netscape Gold offer suitable technology for putting together a presentation. All allow inclusion of text, images and video and presenters should be using the technology to good effect if the end result is to be an improvement on simple transparencies and slides. Use of video can be very effective. The incorporation of already existing "clips" of images, video, models etc can make presentations effective and less time-consuming to produce.

Teachers considering embarking on development of CAL packages need to do so with some caution. Training is a requirement but the major barrier is the time involved in creating quality resources. Teachers should look at materials which are available through TLTP (Teaching and Learning Technology Programme) and other sources.

There is a need for institutional support in causing a change in culture if IT is to be taken on board in teaching and learning in a way which is time-effective for the teacher and enhances learning for the student. This needs to happen despite the sometimes conflicting pressures caused by assessments of research and teaching. Not an easy balance to strike. External support is available to staff through CTI Centres (Computers in Teaching Initiative) and the TLTP Support Network (TLTSN).

Barbara described the activity of the Teaching and Learning Technology Service at the University of Durham which was set up in 1992. The aims are to encourage, support and develop the use of IT in teaching and learning. This is a service to all departments offering advice, information and courseware development. The University has about 70 lecture rooms spread over (a hilly and river dissected) 3 miles. Nearly all rooms have OHPs and slide projectors and most larger theatres are networked. New lecture facilities have been built with data video projection, twin slide projectors and data network connection. The central service also has some portable equipment which is in constant use. In addition some departments and colleges (with conference trade in mind) have their own equipment. A major problem for both fixed and portable equipment is in timetabling, with matching lecturers' needs and expectations to the available equipment. There is also a problem with transporting portable equipment around various University sites. Support is provided by 2 technicians though there is no formal training programme on the use of the facilities.

Modern teaching and learning requires access to self study facilities for students and Durham has 350 open access PCs (including some multimedia PCs) for their 9000 undergraduates. There are to be a further 150 PCs in a new library extension.

Lecturers often wish to conduct presentations away from their own institutions and use the facilities of other institutions. The technology can still present considerable problems with software and hardware variations and with the need for technical support and a suitable physical environment (darkness of room, OHP power). A backup of OHPs is always a good idea!

In conclusion, Barbara noted the following requirements to improve the current situation:

- • increased spending —- none of this comes cheap
- • increased awareness —- by teaching staff, students and at a strategic level within the institution
- • increased support for teaching staff
- • greater co-ordination of support services, administration (timetables) within institutions.

Finally, it is critical that we see these issues as part of the wider issue of integrating IT into the curriculum.

Multimedia Presentations, the story so far........
Sue Cunningham

In April 1996 a workshop to consider Multimedia Presentations was held as part of the AGOCG programme (through the Support Initiative for Multimedia Applications (SIMA) project funded under the JISC New Technologies Initiative). This workshop addressed the questions:

- • are multimedia presentations useful?
- • why don't more people use them?

Multimedia presentations can be useful if well used in that they can increase student motivation and result in increased understanding and retention. They can involve the provision of ancillary support material for student use.

The workshop came up with a number of issues and recommendations given below together with some of the actions which AGOCG have started to take as a result.

Issue:

Multimedia presentations are time consuming to produce.

Recommendations:

- • a database of media clips should be made available which should include commercial resources
- • there needs to be academic recognition for the work involved in producing online courseware
- • there are national facilities which need to be better promoted
- • standards are important and these need to be promoted
- • there needs to be a cost/benefit analysis of the benefits of using multimedia presentations

Recent Activity:

JISC are working with a commercial consortium to develop the Knowledge Gallery which will act as a gateway to a range of multimedia resources - initially images - with JISC developing content and the commercial consortium providing a gateway. The gateway will have a business infrastructure allowing authentication and charging giving a shop window to resources from the UK HE sector.

There is a growing recognition of the need to take account of teaching and research publications and development which are online and not on paper.

Issue:

There are perceived problems moving from traditional methods of generating presentations to electronic ones.

Recommendations:

- • a list of criteria for choosing presentation software should be produced — this can be used at any point in time

- • based on this, there should be a survey of tools
- • staff development needed to be undertaken in this area

Recent Activity:

Sue Cunningham has set up criteria for selecting presentation software and has conducted an evaluation comparing: Microsoft PowerPoint, Corel Presents, Astound and Lotus Freelance Graphics. This is available on the multimedia section of the AGOCG WWW pages.

JISC through their Technology Applications Sub Committee are to evaluate presentation systems for lecture theatres and to report on the direction for future technologies. This is currently (May 1997) out for tender.

Issue:

Multimedia does not necessarily mean good quality

Recommendations:

- • develop a set of guidelines
- • create a repository of good examples
- • establish a central unit for dissemination of good practice

Recent Activity:

At the launch of its Strategy in November 1996, JISC announced JISC ASSIST which it hopes will act as a clearing house for information and good practice in the use of information systems in HE.

Issue:

Lecture theatres are not "multimedia ready"

Recommendations:

- • adequate technical support must be available
- • guidelines should be developed for the creation of a multimedia delivery box
- • guidelines should be developed for a "multimedia trolley" for small rooms and as a first step to fully equipped lecture theatres
- • guidelines should be developed for a minimum standard for presentation equipment in lecture theatres
- • information sheets describing the hardware and software available in each theatre should be available
- • institutions should be encouraged to invest in and improve their facilities
- • the layout of equipment and additional factors such as lighting, networking need to be considered

This workshop (being reported here) enables us to address these issues regarding multimedia presentations in a broader context and to put some priority on the work proposed.

Introduction to the Group Discussions

A third of the time at the workshop was spent in group discussions with each group addressing one of four broad areas within which groups were asked to focus on particular issues.

The groups discussions were designed to address the issues which people had been asked to raise when applying for the event. The groups then reported back on the major issues addressed and made recommendations.

The areas of discussion and issues raised prior to the event by participants were:

Providing Teaching Facilities

Equipment

what equipment do people need advice on?

the need for evaluations

standards - getting things to interwork

security

Lecture Rooms

what is the minimum level of equipment in a lecture room

reliability

portable equipment

provision for large/small rooms

provision for conferences and prestige events

adapting unsuitable lecture rooms

the technology for students with disabilities

Video conferencing

selection of equipment

suitability for particular needs

design of rooms

to partner institutions

Strategy and Management Issues

Managing the service

planning for next "n" years

futureproofing,

problems of cross-department support

timetabling to let people who want access to facilities to get them

problem reporting/reaction

centralised vs devolved provision/support

developing strategies

Funding

persuading management of the need

persuading people to use it so it does not become a white elephant

futureproofing

how to phases

measuring cost benefit

Staff Development

technical staff

teaching staff

conference office

cultural change

persuading people to embrace the technology

getting the expectations right

Supporting and encouraging lecturers

ensuring the technology improves things

offering support across departments

making it easy to use

promoting self sufficiency

presentations away from home

training people to provide multimedia materials

general staff development issues (lecturers, technicians, graphics etc)

Supporting Flexible Learning

delivering multimedia materials to the classroom

using online demonstrations in the classroom

using the WWW for accessing resources in the classroom

connecting to remote sites and guaranteeing delivery

learning resource centres

demands for students to have range of resources

CD ROMs access/security

copyright protection

student self study facilities

plug in sockets round campus

wiring halls

Strategy and Management

Issue

There has been a trend towards devolving central services to departments. With regard to the facilities being discussed at this meeting, the group agreed that there are clear benefits to be gained by provision of effective central services.

Recommendation

Central services can be effective in supporting teachers. Sites need to set standards of service — what is supported as a minimum and what can be provided beyond that — through Service Level Agreements (SLAs). Sites need to be increasingly visionary while leaving some space for pragmatic decisions. Irrespective of the level of convergence of service departments within an institution, there is a need for services to pull together, foster the relationships and provide a seamless service. Sites need to decide what level of self sufficiency is expected of individuals, departments and faculties.

Issue

Lecturers need to be confident in their use of equipment and this is often not the case.

Recommendation

Support lecturers by:

- • individual support initially — staff tend to be at institutions for some years and thus one-to-one may be effective
- • have a strategy towards self-drive of equipment

Issue

We are often unable to justify the cost of the additional equipment — we must be able to do this. We need to be able to measure costs, effectiveness and cost recovery mechanisms

Recommendation

Procedures need to be put in place in institutions to measure cost benefit. Case studies of good practice and examples of business plans could be very usefully exchanged.

Issue

Equipment goes out of date very quickly (almost immediately it seems) and we need to plan for change.

Recommendation

We cannot plan for periods of equipment stability much beyond 3 years. One possible model of funding is to lease equipment. Leasing equipment should be investigated.

Issue

There is a need for a strategic approach to the use of technology in teaching and learning.

Recommendation

JISC should develop/acquire some sample business plans for implementing best practice in the provision of lecture room services.

A portfolio of management-persuading quotations and strategic statements should be put together.

Issue

Capital (windfall funding) can be easier to obtain than ongoing maintenance and support costs which must be met if the technology is to be effectively used. How do we manage to make effective cases for funding on ongoing costs?

Recommendation

A series of case studies reflecting different institutional approaches to solving the problem of equipment provision should be commissioned so that we can learn from each other and share experience.

Issue

Facility booking in institutions can be a major problem with different organisations handing AV, computing and room allocations.

Recommendation

Sites should have this issue highlighted as a potential blockage to the takeup of IT in teaching and learning.

Issue

Are learning resource centres the answer to problems?

Recommendation

There are examples of these and a study should be conducted. The one-stop-shop may be a useful model depending on the nature of the institution. There are territorial issues and a culture change is needed.

Provision of Teaching Facilities

Issue

There is a need for more information and for an exchange of information, experience and good/bad practice.

Recommendation

A database of information should be built up which focuses on equipment types and their capabilities. This should be available across the WWW. Funding needs to be made available to keep the information updated. It would be useful to have an online resource of Frequently Asked Questions (FAQ). Information from the Educational TV and Media Association (ETMA) mailbase list could provide useful input.

There is a need for agreements for equipment nationally or by purchasing organisations for selected kit.

Issue

Presentation issues are often not considered when lecture theatres are upgraded. Computing and AV staff need to be involved at an early stage — buildings need input from organisations other than estates.

Recommendation

Sites should be encouraged to put in place appropriate wiring as theatres are upgraded, even if the presentation equipment is not yet available. It is very important that in doing this computing and AV staff liaise.

Issue

It is difficult to find information about standards, which are important in this area.

Recommendation

A WWW site should be set up which hold information about standards, e.g. video conferencing standards.

Issue

Inconsistent provision is a problem regarding timetabling and the confidence of lecturers in feeling able to guarantee equipment availability.

Recommendation

Basic standard provision needs to be established within sites. Advice from JISC on this would be useful in encouraging sites to upgrade facilities.

Equipment provision decisions need to be made on an educational basis.

Such minimum facilities might include: writing surface; OHP (400W plus dual lamp; blackouts; correct lighting; slide projectors (2); high quality screens; PC and Mac with standard presentation package; data/video projector; network point; ventilation; VCR; induction hearing loops; reinforced sound in larger rooms; technical support.

Issue

Sites need to gain and exchange information and experience with regard to video conferencing. Room design advice is needed on issues such as: lighting; ventilation; sound insulation; acoustics; availability of telephone.

It was noted that UKERNA have ongoing evaluations of video conferencing equipment.

JISC have also set up a Video Conferencing Focus Club as part of their Technology Applications Programme.

Recommendation

Initiatives to assist in the support of video conferencing, for example at UKERNA or through the JTAP Video Conferencing Focus Club need to be promoted.

Issue

Within sites it is often unclear who should take responsibility for the provision of video conferencing.

Recommendation

Institutions should be encouraged to set up a group to co-ordinate provision of equipment, maintenance, support and upgrade.

Issue

Security can be a problem.

Recommendation

Chain down kit.

Issue

We need to be able to see things working and to be able to view latest equipment at a time we are interested in buying.

Recommendation

We should set up technology "show room(s)" to show the latest technology in conjunction with industry.

Issue

Online demonstrations can be a problem in terms of availability of suitable equipment, reliability and availability of networks.

Recommendation

Minimum specifications need to be set for sites and facilities within sites. Standards are critical in this with many problems even with emerging standards. Problems with HTML, browsers, plug ins etc are common. Support for symbolics (maths, chemistry) and non-English languages present problems in teaching and learning. Online demonstrations are unreliable due to bandwidth problems and are affected by time of day, caching, site location.

Issue

Sites need to develop strategies for fully equipping all teaching rooms for multimedia delivery. They need to decide how to get from where we are now to full provision.

Recommendation

Portable equipment may provide a pragmatic short-to-medium term strategy for some rooms. Equipment suitable for a "multimedia trolley" should be investigated with a report to the community.

Staff Development

Issue

We need to train a range of staff to support the use of technology provision for teaching and learning. There will be less of a problem in 10 years time — we will be recruiting people who have grown up with the technology who do not see the distinctions between, for example, computing and AV.

Recommendation

We need to recognise the different specialisations: educational technologists; producer; presentation support; academic — and provide appropriate training to each. A minimum critical mass of support staff is a pre-requisite for success.

Issue

Staff do have concerns with regard to their security in the light of new technology.

Recommendation

Staff need to be reassured — the new technology is likely to need more not less support. Staff have to be willing to develop skills and take on new roles as new technology emerges.

References, Contacts and Acronyms

AGOCG & SIMA Reports via the AGOCG WWW pages, paper copies from Joanne Barradell, j.t.barradell@lboro.ac.uk

JISC Five Year Strategy, 1996-2001, available from JISC, Northavon House, Coldharbour Lane, Bristol, BS16 1QD, or at http://www.niss.ac.uk/education/jisc/strategy.html

Multimedia Presentations: Workshop Report, AGOCG Report 29, available from the AGOCG Web site or by emailing Joanne Barradell, j.t.barradell@lboro.ac.uk

AGOCG	Advisory Group On Computer Graphics	/agocg/
ALCD	Analysis of Large and Complex Datasets programme of the ESRC	http://www.esrc.ac.uk/curaward.html
CTI	Computers in Teaching Initiative	http://www.cti.ac.uk/
ESRC	Economic and Social Research Council	http://www.esrc.ac.uk/
JISC	Joint Information Systems Committee of the Funding Bodies, HEFCE, SHEFC, HEFCW, DENI	http://www.niss.ac.uk/education/jisc/
JTAP	JISC Technology Applications Programme	http://www.jtap.ac.uk/
SOSIG	Social Sciences Information Gateway	http://www.sosig.ac.uk/
TLTP	Teaching and Learning Technology Programme	http://www.icbl.hw.ac.uk/tltp
TLTSN	Teaching and Learning Technology Support Network	http://www.icbl.hw.ac.uk/tltsn