

Library Services / Education and Professional Development

Access to Core Course Materials Project

Report of the needs analysis interviews

(Final version)

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1 Introduction and methodology

This report outlines the findings of the Access to Core Course Materials needs analysis interviews. Interviews were conducted with academics in thirteen departments (including one pilot interview). Individuals were asked to identify core materials in their subject, the specific needs of their department, their use of and attitudes towards the current teaching support services and their requirements for a future electronic service.

2 Participating Departments

The interviews sought to cover a range of different departments and partly to reflect the diversity of subjects taught at UCL. Therefore departments from the arts and humanities, sciences, social sciences and medical school were included in the study. The departments also varied in size, to investigate whether a large department might have different needs to a smaller one. The table below indicates the number of departments from each faculty who participated in the study. It also indicates the codes used to ensure departments remain anonymous when direct quotes are included in this report. Departments are coded according to their faculty, using letters to distinguish between them.

Faculties at UCL	No. of depts	Codes
Faculty of Arts and Humanities	5	1A-E
Faculty of Clinical Sciences	4	2A-D
Faculty of Life Sciences	1	3A
Faculty of Mathematical and Physical Sciences	2	4A-B
Faculty of Social and Historical Sciences	1	5A
Faculty of Laws	0	
Faculty of the Built Environment	0	

Departments were essentially self selecting and therefore the results reflect the attitudes of those departments who chose to be interviewed and who might be particularly interested in electronic initiatives. However, the needs analysis will help ensure that when the service is launched it will meet the needs of the departments most likely to make use of it in the first instance. It is anticipated that the service will evolve if more departments later decide to take part.

3 Core Materials in different departments

The questionnaire indicated that different types of course materials were used by different departments. This issue was followed up in the interviews to provide establish a consensual definition of the term, while recognising the different needs of academic departments.

3.1 Definition of core course materials

An important part of the needs analysis involved formulating a definition of core course materials and to compare how this might differ between subject disciplines. A rough definition was developed using the questionnaire data and this has been refined following the interviews. The following types of materials can therefore be identified as core course materials:

- Core readings
 - Journal articles
 - Book chapters
 - Reports
 - Textbooks
 - Newspaper articles
 - Ephemeral material
- Study packs
 - Photocopies of articles / chapters
 - Course booklets
 - Lecture notes and handouts
 - Still images
 - Diagrams
 - Photographs / slides
 - Audio material
 - Video material
 - Electronic sources
 - Web sites
 - Databases
 - CD-ROMs
 - CAL packages
 - Electronic journals

3.2 Importance of different materials

Clearly not all the different types of materials mentioned above are relevant to every subject discipline and the importance of different materials varies considerably. For example, within some subjects, journal articles were rarely used at undergraduate level, with the emphasis being on core textbooks or lecturers notes. This finding was

more common in subjects that deal with learning particular 'facts' such as medicine and mathematics, as one lecturer said when asked if journal articles were important:

Not for undergraduates. For postgraduates more, for a project they are doing [but] not for undergraduates... The mathematics that we teach them is very old so journals are not so relevant. (4A)

In contrast, other subjects such as languages and social sciences find it is often not possible to identify one core textbook and students are directed to use a range of different sources that could be defined as 'core readings'. However, it would be inaccurate to perceive this difference as being a straightforward split between the sciences and non sciences. For example in subjects such as chemistry and biochemistry the importance of journal articles and wider reading was apparent. As one member of staff said:

I don't think science varies tremendously to a physicist, they only need two or three years worth of journals, but for a chemist we need a good back run of materials readily available. (4B)

For some courses it was more difficult to identify a set of core readings. This could be related to the level at which a subject was being taught, rather than the subject discipline. For example a first year course that sought to teach basic principles would commonly specify essential readings, whereas a fourth year course may encourage wider reading outside a standard bibliography. In more advanced courses identifying 'core' material can be more difficult as one lecturer explained:

With first year students essentially what we do is say read the materials, here are a few articles about it, now write an essay. So basically, here are all the building blocks, now we want you to make a little tower. ... So it does make a difference with the more advanced courses and the first year. (1C)

The importance of audio-visual material varied tremendously across subject disciplines. Unsurprisingly, both video and audio materials were often highly important in language departments, where special provision is often made to allow students access to these materials. Medical departments also sometimes required access to video. Staff felt this type of material was likely to become increasingly important, in particular with the launch of a new inter-disciplinary film studies masters course. Still images were also particularly useful in subjects such as medicine,

biochemistry, chemistry and maths, where lecturers frequently used overhead projectors to display diagrams or photographs.

Almost all subjects recognised the importance of course materials that were created in-house, such as course handbooks, lecturers handouts, and notes relating to particular sessions. In some subjects these formed the basis of what they defined as 'core materials.' These type of materials could often be the most problematic to manage, particularly when students missed sessions or required additional copies of materials. Many departments recognised the immediate advantages of making this material available electronically, so that students could print off copies themselves if they needed replacements.

Departments were increasingly beginning to use electronic course materials, such as CD-ROMs, web sites and databases. Electronic journals were also a particularly important source and their use was widespread across the disciplines. As one arts lecturer said:

We have been getting students to use JSTOR and Ingenta. The five or six important philosophy journals are on JSTOR. Although you don't get the last 4 or 5 years it works rather well. (1D)

Many staff were concerned about providing access to electronic course materials, because they felt there were often not enough PCs within their department. Concerns more generally about the College network are discussed in Section 7.6.

3.3 Creating/Updating course materials

The importance of updating course materials was recognised by almost all departments, although invariably this was done less frequently than was desirable. Most academics were extremely busy and finding the time to update course materials was difficult. One department who produce a large number of course materials in electronic format explained:

We put a proposal into the Vice-Provost that we should be able to appoint an AR member of staff to co-ordinate, generate and maintain this type of material, a teaching materials co-ordinator or whatever it was. (4B)

Most departments felt that it was necessary to update materials on a yearly basis. However, within subjects where rapid developments can take place, for example medicine, it is important to give students up to date material and updating annually may not be adequate:

If there is a change you need to be able to reflect that fairly quickly. If there was something that happens that you need to make the students aware of, you would want to pass that on to the students. So it would need to be updated quickly. (2A)

Other subjects were identified as being more static, in particular maths, where certain principles would not change in the way opinions about a particular event in history might.

3.4 Current problems accessing materials

Although the interviews were held with academic staff, they highlighted a range of problems that their students experience when accessing course materials. There were some criticisms of Library Services, with the main difficulty being meeting the need to have multiple copies of particular texts available at certain times, as this member of staff said:

There will never be enough books in the library and the minute you start to teach specialised courses where there are three or four books that are absolutely essential and twenty people... it becomes first come first served. (1C)

While some lecturers requested second or third copies of a textbook, expecting the library to be provide more than this was not realistic. Furthermore, some staff felt that putting material on short loan also was not entirely satisfactory as it restricted the time students could spend consulting a book. It was recognised that electronic access would have obvious benefits in this area, allowing simultaneous access to multiple copies of core readings. One department was concerned that students sometimes spent more time searching for material they required in the Library compared to actually using it:

I noticed on some of the evaluation forms that one of the students said it would be better if we could spend more time reading than hunting for readings. There is this perennial problem in the library with people hiding the journals and books and putting it somewhere so only they know where it is. (5A)

One department had particular problems with the Library's periodical collection. For this subject it was important to have access to journal back runs and therefore the Library's policy of placing this material into storage caused obvious difficulties. The same lecturer also found the periodical collection was not adequate in terms of the range of titles.

Access to course materials produced in-house could sometimes be problematic to students, particularly when they required additional or replacement copies of materials distributed during teaching sessions. Again electronic access was recognised as having an obvious application here. Some departments had their own library or an area where course materials were stored. Departments were however often concerned about the cost of providing these materials in printed format. One small humanities department regarding photocopying to be their single biggest expense, and any system that might reduce this was welcomed.

Finally those departments who produce course materials in electronic format have found access to this material to be problematic at the present time. This is largely attributed to the speed and capabilities of the College network and the number of public-access PCs available throughout UCL. This issue will be discussed further in Section 7.6.

4 Use of current teaching support services

The interviews investigated whether departments had used the teaching support services currently provided by the Library and their attitudes towards them. Library Services aims to offer one service on a large number of sites, however this investigation suggested that with regard to teaching support the services are still not fully centralised. The Study Pack service has been publicised to all departments as UCL, although it was more commonly used by departments based on or around the Gower Street site. However the Subject Support Unit (SSU) manage the teaching collection service for only the Main and Science Library and the departments which use them. The Institute of Archaeology and Environmental Sciences manage their own teaching collection, but get advice and assistance from the SSU. Other departments, such as the Medical School are dependent upon services offered by their library.

Initially departments were asked whether they were aware of the services provided. The majority of departments based on the main UCL site were aware of these services, although some had not used them, others had used one or other of the services and a few had used both. The results do not suggest that departments who currently use teaching collection services were more likely to be interested in electronic initiatives in this area.

4.1 Use of study pack / teaching collection service

Departments who had used the study pack or teaching collection services were asked to comment on the positive and negatives aspects of these services.

4.1.1 Advantages

Both the study pack and teaching collection were recognised as providing a valuable service to allow large numbers of students to access core reading materials. In particular the study pack service makes it easier for students to access readings, being organised into one bound volume that is purchased from the department. As one academic said:

I was very, very satisfied with the pack to meet a very specific need which was that many of the texts in that course that we teach are very hard to get hold of. What would happen is we have only one copy here and one at Senate House and when you have a course with 30 students on it, once one person has taken it out, it has gone. (1E)

Departments who used study packs found that they were good publicity for a course, giving the impression of a well organised and structured programme. They also avoid the need to undertake large amounts of photocopying within the department as the production was dealt with by the library. One lecturer said:

Course study packs are quite handy because the students come from all over the world and some of them are not used to using libraries and finding materials, so to have it all available for them in one pack is quite good. ...I don't know if it has made a difference for recruitment, but it certainly comes across well when you can say there is a study pack available. (1A)

The teaching collection had similar advantages and was often seen as a relatively quick way putting material into the library collection that frequently didn't necessitate copyright charges if UCL already held the publication.

4.1.2 Disadvantages

Difficulties were identified with these services, in particular the copyright permission charges that had to be met by departments using the study pack service. Many departments had been dissuaded from using the service, finding it too expensive. One department had attempted to create a study pack several years previously and said:

We spent three or four months planning to do a study pack and then it all ended in tears. We had wasted all this time, because ... there wasn't the kind of recognition of the difficulties and it think it was never explained to the department how expensive it would be. (1C)

Some departments also had reservations about passing the costs onto students. Difficulties obtaining copyright permission also hampered both the study pack and teaching collection service at times. Sometimes permission for particular articles would be refused by the publishers, or the fee could be excessive so that a department would not feel it was worth including. This occasionally led to certain readings being omitted from the pack and substituted with another reading. Obtaining copyright permission also increased the production time for these services which could be problematic unless a lecturer was sufficiently well organised.

Some departments found the process of assembling a study pack too time consuming, because they could not predict in advance the necessary readings. Study packs were recognised as being particularly useful for introductory courses, or for courses where there was an easily identifiable body of core literature. The format can be less suitable for more advanced level courses where wider reading is more encouraged. Finally some departments were concerned that in providing teaching support services students were not being encouraged to learn how to use the library effectively, but also to undertake wider reading. They had reservations about producing packs for these reasons.

4.2 Use of EPD/HERDU services

In addition to the teaching support services provided by Library Services, The Higher Education Research and Development Unit (HERDU) offer services to departments, for example secondments to teachers who need the time and support to develop a particular aspect of their teaching. The Unit also supports the development of teaching related policy, and is involved in a wide range of projects concerning aspects of teaching and learning. The level of awareness of HERDU activities was investigated during the interviews. The majority of departments were aware of the Unit, although only one of the departments interviewed had obtained secondment money. The Teaching and Learning Event 2000 (TILT), organised by the Education and Information Support Division and held in March, was mentioned by approximately half the interviewees. This suggests that this event raised the profile of initiatives of this type. Many departments were interested in the work of HERDU and because they have little time or expertise in this area, they were interested in exploring how they might use this service themselves.

4.3 Attitudes towards central service model

In general the interviews reflected a positive attitude towards centrally provided teaching support services. Departments often do not have the time or the expertise to develop more innovative methods of teaching and learning. Both the Library and EPD were recognised as being specialists, the Library in terms of copyright and dealing with publishers and EPD in terms of creating and delivering teaching materials more effectively.

I think it is appropriate for the library to be involved, because my ideal is to do the printed study pack and then to think about the next stage. I was thinking that a good next stage would be to have some of this work on the net. (1E)

Some departments felt that certain services were provided more effectively within their department, however they would still welcome advice from a centrally supported service.

Departments enthusiasm for a central service was partly driven by a belief that it could save themselves money. This attitude means that careful consideration will have to be given to the funding of such a service. If departments are expected to pay for a

service, they may prefer to provide the material themselves. Similarly, if the service diverts funds away from core library activities, for example the money is top-sliced from the book fund, this may be an unpopular decision. The current level of use of the study pack service is generally low compared to the teaching collection. The results suggest that the cost of producing study packs was largely the reason for this.

4.4 Provision of course materials within department

The questionnaire indicated that many departments create course materials internally, in addition to or in place of using central services. Departmental libraries or a collection of materials available for students to borrow are also relatively common.

4.4.1 Departmental Libraries / collections

These collections supplement those held by Library Services and being held within the department they are geographically more accessible to students. The collections vary in size, depending upon the level of funding a department receives. For example, the Philosophy Department are fortunate enough to have received a donation that enables them to spend several thousand pounds a year on their collection. However, most departments find they generally have less money to spend on maintaining these collections than they might have in the past and consequently they are now more reliant on central services.

4.4.2 In-house production of course materials

Course materials are created in house for a variety of reasons. For many staff course materials such as handouts, lecture notes and course booklets were produced more conveniently and cost effectively in-house. They can also be distributed in teaching sessions more easily and are frequently used for short pieces of information that students need to see at a particular time. In subjects such as biology, chemistry and medicine detailed course booklets are often produced, containing information such as bibliographies, diagrams and lecturers notes. Students are usually required to bring these booklets to lectures and refer to them, for example to annotate diagrams. It is particularly useful to reproduce diagrams in this way as it saves students redrawing these in class. In many of these cases it was not appropriate to involve central services in the production of the materials.

It was clear in other instances that some departments avoided using central services, because of the time it could take to produce this material and the copyright fees that might be imposed. The Subject Support Unit stick to clear guidance from the Copyright Licensing Agency about what is deemed to be 'fair use,' although this clause is open to interpretation. While evidence does not suggest there are widespread attempts to flout the law, it is clear that departments are interpreting the 'fair use' clause differently. This is discussed in greater detail in Section 6.1.

5 Electronic course materials

Some departments were beginning to provide access to materials in electronic format themselves. Particularly interesting examples were examined in the case studies, but this was also explored in the interviews. There was a tremendous variety between the different departments, but in general, departments of the Medical School and the Sciences seemed to have made the most progress in this area. One department in the Medical School was using a departmental intranet to distribute course materials. Others were increasingly using their departmental web pages to make information available and lecturers in some departments were providing lecture notes in electronic form which could be downloaded from their personal web pages. As one academic in an arts department said:

There are half a dozen other publications that are all on our web site ... there are various PDF files and the study guide is there as a PDF file. There is a careers guide, a guide to using the facilities and various others. So you will probably find this with other departments as well, that we are taking our own initiatives with electronic things. (1D)

Most recognised that this did not provide a long term solution and ideally this material would be distributed in a secure environment, rather than posted on publicly accessible web sites.

Most departments who were not currently providing course materials in electronic format were starting to consider how they might achieve this. Within several developments this was being pursued at a committee level. Most academics believed that students increasingly have the skills required to access electronic information and that computer literacy was the norm across college:

There is the odd one who is terrified of computers but I heard the other day that this year for the first time they have every student with IT skills before they come and I think that is probably true of our students. There are the odd one or two who are a bit wary, but they all know how to use Netscape, the learn at school. (4A)

5.1 Attitudes towards electronic course materials

Academic staff were asked about their attitudes towards electronic course materials and to consider the advantages and disadvantages they felt they might offer.

5.1.1 Advantages

A number of advantages were identified during the interviews. In particular, academic staff liked the fact that information on websites is accessible from any PC, meaning that students can get access on and off campus, 24 hours a day. As this member of staff said, speaking in particular of electronic access for medical students:

It's cheap and accessible and it means that [students] don't have to carry everything round with them. They can just look it up. With such a big subject, you can't carry all your textbooks with you all the time. (2C)

They believed that electronic course materials are more accessible to non-traditional students, who may be unable to get to the Library during opening hours. They also believed that it would make it easier to support distance learning education. Staff thought it was beneficial that students can work on electronic course materials at their own pace, and so thoughts they were particularly good for remedial work, or for revision purposes as one said:

One of the reasons we are interested in it is it will provide us with remedial material for teaching and learning, material for remedial teaching, so if a student has a problem they can work on it in their own time and it saves time all round. (1A)

Several academics also felt that in developing electronic course materials they demonstrated to prospective students that the department was up to date with current initiatives. They also felt that increasingly students would come to expect this type of service and that universities would increasingly move towards this type of delivery.

5.1.2 Disadvantages

In particular staff were concerned about the computer facilities that would be required to support an electronic service, in terms of the available bandwidth and processing

speed of managed PCs. Accessing large documents particularly when using a modem might be slow and time consuming. Staff also recognised there might be an increased demand for networked PCs and printers within the College and for machines that could be accessed 24 hours a day. Staff felt that printing facilities would need to be improved as many students would want to print material rather than reading on the screen. Computers facilities would also ideally accommodate departments with specialist needs, such as using non-standard alphabets or needing to input chemical or mathematical formula. Related to this issue staff were concerned that students were equipped with the required computer literacy skills to access electronic materials and that support and training ought to be provided.

There was some concern amongst academics about the time consuming nature of producing electronic course materials.

The only other disadvantage is you need someone to put the information on the system and maintain it. It is not really a disadvantage but it is necessary to make it work. (2C)

Some departments were also concerned that it might require them to restructure the way in which their course was taught and to undertake further work, for example to link readings to specific weeks in the course. Unsurprisingly, there was an element of resistance observed during the interviews towards introducing changes in current teaching practices, especially if the change involved introducing new technology. Some staff felt that colleagues with established teaching methods, particularly older members of staff, might display an element of technophobia which would be difficult to overcome. Many department also felt that personal contact was highly important and that within small departments electronic initiatives were less important.

Opinion varied about whether creating electronic course materials was classed as 'spoon-feeding' students. One academic said:

I think that is a slight problem with packaging everything in terms of spoon-fed lumps so they say right this is it. There is tremendous satisfaction that they have this lump, but they don't read any wider. (5A)

Other staff were less concerned:

Q I know some lecturers are a little concerned that students might not go to lectures if they could get all this material.

A But does it matter, if they learn? (2B)

6 Copyright issues

Copyright was an issue that affected departments in two main ways. Many departments were anxious to abide by the 'fair use' guidelines for printed works, while making reading materials more accessible to their students. There was also some concern about the copyright of lecturer's own teaching materials and clearly some misapprehensions over whether this was owned by an individual or by UCL.

6.1 The 'Fair Use' Clause

As part of the Library Services, the Subject Support Unit must adhere rigidly to the terms of the CLA Higher Education license. This means that the need for copyright permission would be established before using any published work in a study pack or placing it into the teaching collection. Meanwhile, departments often take a more flexible interpretation of the 'fair use' guidelines and frequently undertake copying that the SSU would not. As one department said:

Often you would like to take diagrams and text out of books into your notes directly. I am sure people do that but they shouldn't, but to be able to paste that in electronic format where someone could find you have done it, obviously one shouldn't do it. (4B)

One department made photocopies of articles available in their library for students, taking a liberal approach to the 'Fair Use' clause:

Fair use says I can make one copy and put them [in the departmental library], so we tell the students you can check them out and if you take it away for 15 minutes and it comes back we don't ask where it has been for that 15 minutes. And of course what happens is the student has taken it off and photocopied it, but as I say we are not in violation of the copyright law then. (1C)

Other lecturers gave out copies of materials, but asked for them back at the end of a session. Two lecturers were not prepared to comment on the record about photocopying that might take place in their department. Most departments did not deal with copyright clearance in-house, seeing this as an area where the Library would have more expertise, although one lecturer had approached publishers personally for permission to distribute a particular journal article.

Some departments claimed they did not receive enough guidance in this area, while others believed that a central service could bring a 'policing' role. Those departments with experience of using the study pack service or the teaching collection felt that copyright permission fees could sometimes be unreasonably high. Rather than paying these fees, department might find alternative ways of providing students with the materials. For example, one department maintained a collection of photocopied journal articles in their departmental library which were available for reference purposes. Another department produced copies of particular articles for seminar purposes, although these were retained by the lecturer.

6.2 Copyright of teaching materials

Personal copyright was an issue that some academic staff were concerned about, because of the length of time it took them to produce teaching materials. This meant some staff had reservations about making course materials available electronically, believing it would increase the chances of the material being copied by people outside UCL. Some lecturers were concerned about academics at other universities being able to 'pirate' their teaching material, while others wanted to ensure that only their students could access the material.

Many academics were unaware that UCL owned the copyright of any teaching materials they produced in the course of their employment. Staff were anxious to safeguard their own copyright so that they might exploit their teaching materials for publication purposes.

7 Considerations for a future service

This section focuses on the important features of any future service or system that might provide access to course materials electronically. Academics had a wide variety of different needs and certain functions were particularly important for specific subject disciplines. It also highlights areas for consideration when developing any future service, so that it might meet those needs.

7.1 Timing

Many departments were starting to create electronic course materials and considering ways of distributing this information to students. It was therefore recognised that there was a relatively short window of opportunity in which a central service could be

launched in order to ensure a reasonable level of participation. As one department said:

I do know there are strategic plans in the department, it is looking at the development of some form of distance learning material. Simply because I think the plan is to sell ourselves as a high quality department ... It is an opportunity that the department is very interested in. (4A)

It is estimated that the service would need to be launched within the next year to 18 months to maximise its success. Several departments cited the example of the College template for departmental websites. Many departments were not currently using this template because it had taken too long to be made available and they had developed their own web site independently in the intervening period.

7.2 Security

Academic staff were clearly concerned about the security of any planned electronic service providing access to course materials. The Copyright Licensing Agency digital copyright license that UCL has recently signed means that access to any journal articles or book chapters must be restricted to registered students. However, some lecturers were also anxious to guard against plagiarism and ensure their notes and handouts could not be copied by non-UCL staff or students. Placing the material on an Intranet was also recognised as an effective way of controlling access to the materials. One medical school lecturer who used a departmental intranet to distribute materials was not concerned about plagiarism, but said:

We were a bit anxious about other medical schools and the general public having access to it, because it is very much a home grown ad-hoc thing. If a tutor has done some work they can make it available and we try to have quality standards, but it is not terribly rigorous criteria. We try to check everything that goes on but it would be awkward if there were mistakes in the material and somebody else could pick it up. (2C)

The system would ideally require a form of user authentication. Many staff suggested using their Information Systems login and password to avoid the need for additional logins and passwords.

7.3 Accessibility

Many lecturers stressed that in order to truly enhance current levels of access the system would have to be accessible both on and off campus. A key problem cited by

users of the Institute of Neurology site is the lack of off campus access. The Neurology site is restricted by IP address, rather than password controlled, which makes it easier to set up in the short term, but precludes off campus access. Any future service would ideally be accessible from all UCL sites would also be accessible remotely to registered users. Electronic provision of would also mean that materials are available 24 hours a day. However, it might mean that students would increasingly demand 24 hour access to cluster rooms.

7.4 Cost and funding

The cost of any future service was a key consideration amongst all departments, with some academic staff assuming that a central service would save departments money. Others were concerned about how such a service would be funded, and whether the money would be top-sliced from the College grant, or if departmental book funds would be used. One academic said:

Well I just think it is silly to say all these things if the money isn't there and so now bruised and bitter so to speak, I say who is going to pay for all this? After that we will see, this is why I am trying to cost everything because it really is the way we live now. (1C)

There was a feeling that departments might not welcome a service that detracted from what were seen as core activities of Library Services.

Academics who had used the study pack service were aware that copyright permission charges could be substantial. The printed service passed these charges onto departments, who in turn passed these on to students by charging for the packs. There were some concerns among this group about whether students would be charged for an electronic service and how this might be managed. Smaller departments were particularly concerned about the cost of the service as they often have modest budgets.

7.5 Functionality

A variety of functions that an electronic course materials system might need were discussed during the interviews. This functionality has implications for the specification and equipment that such a service would need to support it. This is discussed in the following section

All interviewees recognised the need for the system to have a print function so that hardcopies of materials could be obtained and students did not have to read lengthy journal articles on screen. While academic staff recognised that most students were computer literate, the system must be designed to be user friendly and intuitive, so that students could use it with minimal training.

The ability to display a variety of different types of fonts, special characters and to include chemical or mathematical formula was stressed by several departments. Not all departments create course materials using Microsoft Office. For example, the Department of Hebrew and Jewish studies currently have problems acquiring computer support for word-processing in Hebrew, because of the specialist nature of the software needed. Meanwhile, Mathematics use a specialist software package called LaTEX to enter mathematical formula. In order for the system to be relevant to Maths it would need to be able to cope with this file format. Other departments such as Chemistry, Biochemistry and the Medical School also require specialist software to display chemical structures.

Many departments currently use materials in video or audio form and would be interested in making this material available electronically. Video and audio are particularly useful for language courses and this lecturer had a number of ideas of how he might use them:

My ideal is to take images and video and put them on web pages, so students can click on and see what a close up looks like, what a long shot looks like and have explanations about it. On the web you could instruct students, set work. At the moment I give material out to students on a piece of paper.
(1E)

Video was also an important type of course material for other departments, including parts of the medical school and departments who are planning on teaching part of a new Film Studies Masters Course.

Many departments, even those who have begun to create and manage electronic course materials themselves, would welcome the provision of a service to offer advice in this area. Using communications and information technology to enhance learning and teaching is a relatively new area in which many academics feel unconfident. They

also rarely have the time or resources to develop this type of material as one lecturer explained:

We don't have the resources to do this ... We have employed teaching assistants to do our web pages, graduate students, but we have to pay them. But if somehow there was some service with an expert in this that would be great. (1D)

Academics were also often uncertain of the facilities available with the EISD division and which department should be contacted for help in specific areas. As part of the service academics felt that an advice centre should be established to deal with queries and refer lecturers to units with expertise in specific areas.

7.6 Support and equipment

This future service will have implications for all departments in EISD, but particularly Information Systems and Library Services. The increasing importance of electronic course material presupposes that a certain level of computer support and equipment will be available across the College. As well as the increased demand for the number of public access machines, the network will need to be able to cope with an increase in demand. There was some concern about the number of PCs currently available, as one lecturer said:

It might cause problems accessing it. If there was some space I would like a resource centre, because there aren't enough computers in the department. (2A)

Transfer times will be relatively unproblematic for text files, however if image files, or possibly audio or video files are involved¹, transfer times become much slower. Another lecturer was concerned about the computer facilities available, saying:

Well the problem we have of course at the moment is the age of the computer systems we have, with the slow system and the limited time students can have access to them, since they have to use cluster rooms and there are only so many hours they can book a week. (1A)

Many electronic reserves projects are using PDF Image files which are typically 1-2MB in size. If large numbers of students are wanting access to these files

¹ The current policy of IS to disable sound cards in all managed machines means that it is not possible to play sound files. There are also not facilities to view video files within College at the present time. The library might consider making facilities available where sound and video files can be accessed, Alternatively IS could reviewed their current policy to see if these services could be offered in some cluster rooms.

simultaneously, the network needs to be able to cope with this demand and many staff felt that upgrading might be necessary.

Where possible course materials could be supplied in electronic format, avoiding the need for scanning. However, in some instances it might be necessary to scan documents to include on the system, in particular if lecturer's notes are going to be made available. Additionally if foreign language material, or documents containing chemical or mathematical formula are included, then a high quality scanner will be required to ensure the copy is legible. This type of material will also ideally be displayed using PDF Image files, which will need to be created. The software to convert files to PDF will therefore be required and the service will need a designated server on which to store the files.

Many lecturers believe that the current computing facilities at UCL are such that it is not feasible to replace any printed services with electronic access, as one member of staff said:

I think at this stage it would be quite unrealistic to have them just available electronically ... I think the facilities aren't good enough to say we don't have to bother with paper anymore. Because you know printing off 100 pages is not a joke, it is not a joke for us, so it is very appealing to think you can have everything electronically, but translating that into a usable form is not so easy. (5A)

Certainly in a pilot stage students would also need to be able to access readings in printed format, while technical hitches are ironed out. Staff have concerns that there is an insufficient number of public access machines to support this system, with cluster rooms already being heavily used. This service will place an additional burden on public access machines. Furthermore, some lecturers believed that students might require training and further support they are to access their readings in this way. They suggested that this could be incorporated into Library induction programmes.

7.7 Level of sophistication required

During the interviews staff were shown two course materials systems that have been developed at UCL by two departments. Some members of staff were unsure about what such a system might look like, so providing them with two models helped to

stimulate the discussion. The first site is more sophisticated and integrated far more into the course structure. The site was developed by a particularly keen member of academic staff who obtained secondment money from HERDU. Students log into the site which uses WebCT. Numerous functions such as a bulletin board for communication and a wide range of resources are available.

In contrast the second site is far simpler. The pages are designed in HTML and are structured around a timetable. Links to notes, references and sometimes PowerPoint presentations are available, although it is down to individual lecturers discretion about what they include. The site is maintained by a Librarian and the material is collected by the Institute's Students' Office. This ensures there is regular maintenance and a standard format. More details about these two models are available in the Case Study Report.

Most academic staff preferred the second more simple web site. Although it did not have the additional features of the first site, such as communication and authentication, they found it far more appealing. They could immediately see the relevance this model might have for their own course. There was also a feeling that staff who were less confident with IT regarded this site as something that was achievable because of its simple structure. Lecturers notes and handouts are currently available from this site, which students find highly valuable if they miss sessions, or want to follow up references in the notes. If this model could also include full text readings linked from the references many lecturers felt this would be highly useful. Access to the site by IP address was also recognised as not being ideal, as many staff thought that students would require off campus access. The week by week lecture outline was not a useful arrangement for all the departments, however it did provide a useful model.

Academic staff often felt that electronic course materials would be time consuming to construct and maintain. For some, seeing the huge amount of information on the first website confirmed their belief, as one said:

I like the [first] one, so there might be some interest in pursuing it. But obviously what it will come down to is time, because we have got to publish our books and the rest of it.

There is that problem isn't there? You can't sit there all day doing web pages. (1E)

Many lecturers were also reluctant to use a piece of software that they believed would require them to restructure their course. The value of functions such as communication was recognised, although it was seen as an added bonus rather than an essential feature given that all staff and students have access to e-mail. The second site by contrast demonstrated that creating electronic course materials was not necessarily time consuming. It also did not require staff to alter their teaching methods significantly. Given these reactions, the project is considering an incremental development process for the service. A system such as the second site provides a framework from which various electronic course materials can be hung. As and when departments require, these resources can become increasingly sophisticated, both technically and pedagogically. This will allow staff to become accustomed to using electronic resources and will develop their confidence of working with new technology incrementally. Using this approach the interviews suggest that the service will ensure a greater level of take-up and meet the needs of departments more successfully.

8 Conclusion

The needs analysis interviews provided valuable data for the Access Project. This data will inform way in which course materials are provided electronically at UCL. It highlights the way in which current teaching support services are used and considers the important features and considerations when launching a pilot service. This data will be used along with the case studies, two experimental studies and the external review to identify a series of models for a future service. Each model can then be costed and recommendations for a future service will be presented to the SCILTA board.

8.1 Recommendations for the service providers:

- Departments have different definitions of what constitutes core course materials and any future service would need to be customisable to incorporate a range of different resources in different formats.

- Departments have a positive attitude towards centrally provided teaching support services. EISD is an appropriate provider of such services and has relevant expertise that academic departments might not.
- Cost is a key factor determining take-up levels of any service. The service needs to consider the available funding departments would have for this type of service.
- The system needs to consider the computer facilities available at UCL and will need to be able to run effectively without assuming there will be significant changes.
- Print functions will be an important aspect of the service and must be available.
- Departments often require guidance and advice when setting up and maintaining electronic resources. A 'helpdesk' function would be an important feature of this service.
- Course materials should only be provided in a secure environment for staff and students at UCL. The system will also need restrict access to students on a particular course.
- Departments prefer a simple framework from which they can hang a variety of resources. Increasingly sophisticated resources could be developed over time, but might not be required by all departments, particularly in the first instance.

8.2 Wider Recommendations for college:

- An effective electronic service requires adequate computer support and there is considerable concern amongst academic staff about the computer facilities currently available at UCL. In light of the operation of a pilot service, IS policies in the following areas may need to be revised: support for audio and video, speed of network connections, opening hours of cluster rooms, print facilities.
- Copyright fees for can be significant and departments often pass these costs on to students. Managing this problem in a digital environment may requiring a method of charging students to download material.
- Departments will find it difficult to meet the costs associated with this service and central college funding for this service should be considered.
- The service has staffing implications and will require additional members of staff to run and maintain the service, either based within Library Services or another part of EISD.