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# The Use and Awareness of Electronic Information Services by Academic Staff at Leeds Metropolitan University

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## The occasion

This research is at an intermediate stage. The author would like to know about research experience elsewhere in this area.

## Abstract

The purpose of this research is to investigate the awareness and use of electronic information services by academic staff at Leeds Metropolitan University. This is to be done in two parts, firstly a quantitative study in the form of a questionnaire and secondly a qualitative study to further explore the findings from the first part of the research.

This paper contains the findings from the first part of research into levels of use (or non-use) of electronic information services by academic staff at Leeds Metropolitan University (LMU).

## Background to the research

Changes in technology in recent years have dramatically altered how information is accessed, stored and disseminated. Whereas information provision in academic libraries was previously based upon the collection of physical library materials, it is now increasingly the case that academic libraries are moving their collections into the virtual arena. With advances in new technology opening up access to information on a local, regional, national and international basis, academic staff are now faced with a multitude of information sources available from their desktops.

The consequences of these changes have had a dramatic effect on the way that teaching, learning and research are carried out in higher education. As change has been so dramatic, this raises important questions as to whether academic staff are fully aware of the potential of the new technologies and have the skills to utilise them fully in their work. In particular, academic staff require new skills and competencies to navigate, find, evaluate and use electronic information services (EIS).

## The Institution

Leeds Metropolitan University is a former Polytechnic which was granted University status in 1992. Courses at the University concentrate on professional and vocational education; teaching is provided over three campuses, two within the boundaries of the city, and one - mainly conducting FE courses - in a nearby town. At the time of writing over 25,000 students were enrolled at the university.

Learning and Information Services (LIS) provide the support for the learning and teaching needs of staff and students. LIS has licences for searching about 3000 electronic journals in full, and members of the University have access to 70 CD-ROM information services either provided through networked CD-ROMs or, increasingly, through web based services. A web based gateway provides access to other local libraries, to the BIDS database, and to a variety of abstract and indexing services relating to the wide range of subjects covered by the University.

The following faculties were investigated: Cultural & Education Studies, Health & Environment,

Information & Engineering Systems, Leeds Business School and Harrogate College.

### Conducting the Research

A questionnaire was devised comprising primarily closed questions; however there were a number of open questions so staff could give additional information if they wished.

The questionnaire investigated four specific areas:

1. The characteristics of the respondent, such as their age, gender, faculty etc. so that an analysis could be made against the different variables.
2. An analysis of the perceived level of IT literacy of staff to see what effect IT skills have upon the take up of EIS.
3. An investigation into the frequency of use by academic staff of different EIS offered by LMU.
4. Their perception of student use.

A stratified sample (taking into account faculty and seniority of staff) of 200 academic staff was selected. The questionnaire was then sent out via internal mail during June and July 2000. Because of the close proximity to the summer vacation the hand in deadline was extended to September. During this period reminders were emailed to staff and an electronic version of the questionnaire was also sent out. By early September 101 responses had been received, making a return rate of just over 50%.

### Responses

An analysis of the variables against figures provided by the Human Resources department revealed that the make-up of the sample provided a very close representation of university academic staff.

Responses consisted of:

54 male and 45 female. 2 respondents chose not answer the gender question.

4% were under 30; 21% aged between 30-39; 37% aged between 40-49; 35% aged between 50 and 59; 2% were aged over 60.

Representation of the five different faculties was also very close, with only two of the faculties slightly over represented.

The responses were then analysed using the statistical package SPSS. From this preliminary conclusions have been drawn, and this, with the addition of comments to the open questions, is paving the way for the second part of the research.

### Analysis of IT Skills

Because the use of EIS requires basic IT skills, and since many of these services are web based, there is a growing requirement to be able to use web browsers. First, respondents were asked to give an assessment of their perceived level of confidence in using IT applications. By IT applications was meant a variety of popular software packages that academic staff at LMU are likely to come across. A variety of packages were highlighted for illustrative purposes; these were Windows, Office, Outlook etc. Secondly, a similar analysis was undertaken to assess staff web browser skills. Again packages were provided for illustrative purpose; these were Netscape (the package used within LMU) and Internet Explorer. In both cases respondents could then state whether they were a Beginner, Intermediate or Advanced.

Overall staff rated their software application skills as follows

#### Perception of IT application skills

Beginner	14.9%
Intermediate	61.4%
Advanced	23.8%

There were, however, significant differences by gender and faculty. 35% of male staff considered their IT application skills to be at an advanced level compared to only 11% of females. It was staff in Information & Engineering Systems and Cultural & Education Studies who considered themselves the most advanced users.

Similar findings can be reported in an analysis of respondents' web browser skills.

#### Perception of web browser skills

Beginner	27.8%
Intermediate	54.5%
Advanced	17.8%

Although almost 24% rated their web browser skills to be at beginners level a disproportionate amount of beginners were female – 62.5% against 37.5% of males. There was a wider divide amongst the 17.8% who rated their web browser skills to be advanced. Of these 83.3% were male compared to only 16.7% female. This raises the question whether the contrast between sexes is the result of a tendency for computer use to be a male characteristic or whether there is a sexual bias in self-assessment: in other words are men more nerdy or simply greater braggarts?

To give an indication of the IT skills within faculties web browser skills were cross-tabulated with faculty. Whilst most faculties had an average of 20% as beginners, one faculty (Leeds Business School) was almost double this with 42%. Similarly most faculties averaged around 16% of their staff to be at

an advanced level; this was only exceeded by one faculty, with 40% (Information & Engineering Systems) of its staff perceiving their skills to be at this level.

To give an indication of respondents current levels of use of EIS, we asked them to estimate their present mix between use of traditional library based resources and EIS. Three options were given

- 20% or less EIS / 80% or more traditional library based resources (paper)
- 50% EIS / 50% traditional library based resources (paper)
- 80% or more EIS / 20% or less traditional library based resources (paper)

The results were then cross-tabulated with perceived levels of IT and web browser skills.

### IT Application Skills Vs Traditional and EIS Sources

Perceived level of IT Application Skills	No Response	20% EIS/ 80% Traditional Sources	50% EIS/ 50% Traditional Sources	80% EIS/ 20% Traditional Sources
Beginner		73.3%	20%	6.7%
Intermediate	1.6%	22.6%	66.1%	9.7%
Advanced	4.2%	41.7%	29.2%	25%

The majority of beginners in software application skills (73.3%) are consulting traditional library based resources most of the time. If we examine the figures in relation to the advanced and intermediate users, we find they are more likely to consult EIS

more of the time, with almost two thirds of intermediate users consulting EIS 50% of the time and a quarter of all advanced users accessing EIS 80% or more of the time.

### Web Browser Skills Vs Traditional and EIS Sources

Perceived Level of Web Browser Skills	No Response	20% EIS/ 80% Traditional Sources	50% EIS/ 50% Traditional Sources	80% EIS/ 20% Traditional Sources
Beginner		70.8%	25%	4.2%
Intermediate	3.6%	61.8%	27.3%	7.3%
Advanced		22.2%	33.3%	44.4%

When a similar analysis is done for web browser skills, there are slight differences. Whilst over 70% of beginners consult traditional library sources most of the time, the majority of those at intermediate level still seem to prefer traditional library sources. Those at advanced level are much more likely to consult EIS, with over 44% of advanced users preferring to consult EIS 80% or more of the time. This indicates that the level of skill in using web browsers is a greater determinant than software application skills regarding use of EIS - although it gives no indication of which way the influence works. Do staff have higher web browser skills because they use EIS regularly, or do they access more frequently because they have the required skills?

The mix of usage of EIS and traditional library sources was also broken down by faculty. Two of the faculties (Leeds Business School and Information & Engineering Systems) lean more towards using EIS - with over half of both these faculties preferring EIS at least 50% of the time. However, the remaining faculties (Health & environment, Cultural & Education Studies, and Harrogate College) show a definite preference towards traditional library sources - with almost three quarters of respondents using traditional sources the majority of the time.

Throughout the survey lack of time, work pressures, and lack of confidence to utilise the service fully were often cited as reasons for the non-use of EIS. The following quote from a member of staff may be typical as an indication of staff priorities:

"I would like more pressure to be put on me to update my skills. I know it is important but I keep deprioritizing."

### Use of electronic information services

Prior to this research LIS had no indication of the levels of use and non-use of EIS. To give an indication of the take up of services, respondents were asked to highlight levels of use of five electronic information services provided by LMU. These were the World Wide Web (WWW), the Learning Centres' catalogue, Electronic Abstracts and Indexes, CD ROMs, and Electronic Journals and Newspapers. To see differences in faculty use the figures were then cross-tabulated.

The figures showed that Cultural & Education Studies are the highest users of EIS - with a high percentage of staff using the various services frequently. Leeds Business School also used the services extensively. Information & Engineering Systems have the widest spread of any faculty, with high levels of use and non-use within the same category. The lowest users of the services were Health & Environment and Harrogate College.

To give an indication of use of the different services the following table shows the amount of staff using the different services on a weekly or more frequent basis

### Proportion of staff using EIS on a weekly (or more frequent) basis

World Wide Web	71.3%
Learning Centre Catalogue	39.7%
Electronic Abstract and Indexes	24.7%
CD ROMs	10.9%
Electronic Journals & Newspapers	34.7%

Of all the services offered, the WWW is the favoured route to EIS. Over a quarter of staff are using the WWW on a daily basis and over 70% are using it more than once a week. The highest use by any faculty (Leeds Business School) saw 84% of its staff accessing it more than once a week. Even the faculty with the lowest use (Health & Environment) had 61% of staff accessing more than once a week. Overall the numbers of staff not using the WWW were very low, but there was a slight worry that two respondents claimed not to be aware of the WWW!

Similarly use of the Learning Centres' catalogue was high, with almost 40% of respondents using it more than once a week and 70% using it on a monthly basis. The faculties with the highest use were those that previously indicated that they used traditional library materials more than EIS (Health & Environment, Cultural & Education Studies, and Harrogate College).

Although most respondents (80%) used electronic abstracts and indexes, they were not accessed on a regular basis. Only a quarter of staff are accessing these services more than once a week and 45% use them on a monthly basis. Perhaps of most concern 20% of respondents never used these services at all. Of all faculties it was only Cultural & Education Studies that used these services extensively.

Of all the services CD ROMs were the most underused: 24% never used them and only 11% used them more than once a week. The main reasons given for non-use by respondents were difficulty of access and the feeling that the information could be more readily accessed elsewhere. This was perhaps not surprising since the provision of CD ROMs is now declining - with many of these services moving to web based access.

Over a third of respondents (34.7%) said that they used electronic journals and newspapers more than once a week. However, over a half of respondents only used them occasionally or not at all. This is despite the growing importance of e-journals in scholarly communication. Again it was Cultural & Education Studies who were using these services more than any other faculty.

One lecturer noted the importance of these services to students:

"Our final year students are finding e-journals at last and this has massively increased the quality of their dissertations – again the path to academic materials is often a hard one for the dedicated few"

### Accessing EIS

Staff were asked how they accessed electronic information sources. Whilst 68% of staff used the Learning Centres' web pages to access EIS, the favoured route to accessing EIS was via gateways or search engines (73%). This raises the problem that almost a third of respondents are not using the Learning Centres' catalogue to access EIS. As a result there is concern that staff are missing out on many subscription based services that are only available via the Learning Centres' catalogue - such as electronic databases and indexes, electronic journals and specialist web services.

### Perception of Student Use

This study does not directly assess students use of EIS, instead it sought staff perceptions of students' use.

The majority of faculties felt that their students used EIS on a regular basis, and also felt that their work would suffer without access to EIS. However, one faculty, Cultural & Educational Studies, felt that over a quarter of their students used EIS never or rarely. Whilst the majority of staff felt that EIS was used by students on a regular basis and their work would suffer without access to it, there was a broad concern that students were not equipped with the skills to utilise EIS fully. The majority of staff felt that students did not have the necessary skills. One faculty (Health & Environment) was particularly vehement in its disagreement, doubting whether 42% of its students had the necessary skills to fully utilise EIS. This point was raised by a member of staff emphasising the need for more support if students are to fully utilise these services.

"Myself and a librarian gave 2nd year students a talk on accessing EIS as part of their preparation for an essay. As a result we have found many more web refs. this year as a result – students welcome the guidance, they feel a bit 'lost' otherwise."

This might account for the reason why the majority of staff still felt that students were relying more on traditional library resources instead of EIS. Only one faculty, Information & Engineering Systems, believed that its students relied more on EIS. The remaining four faculties did not, with over half of all respondents from two faculties (Cultural & Education Studies and Health & Environment) feeling that the majority of their students rely mainly on traditional library sources.

### Conclusions

Confidence and capability in using IT is one of the major obstacles to the use of EIS. The research revealed, in the majority of cases, a direct link between use of EIS and perceived IT competency. Those with advanced IT application and web browser skills were more likely to use EIS. Those who were beginners were more likely to consult traditional library sources.

In consequence more emphasis needs to be placed upon developing the IT skills of staff. There is considerable diversity in perceived levels of IT

skills amongst staff - with large differences by gender and by faculty. There is a need for more opportunities to develop skills, and there are implications for how training is delivered and how staff are supported.

However, there were discrepancies that may suggest that there are other determinants affecting take up of EIS. For example;

- Although Leeds Business School has the greatest proportion of beginners in the use of web browsers, they are amongst the highest users of the WWW; the research also indicates that their staff tend to lean more towards EIS than towards traditional library sources.
- Similarly, Cultural & Education Studies also provide interesting results. Although indicating that they tend to favour traditional library sources most of the time, when the frequency of use of different EIS is analysed by faculty, they are one of the highest users.

Such findings provide important data for an analysis of what other behavioural and cultural differences may affect use of EIS on a faculty basis to be explored in the second part of the study .

Although the WWW was the most extensively used EIS by staff, there appears to be a low take up of the subscription based services. These services are particularly important in providing staff with an opportunity to keep up-to-date in their subject area. However, the survey highlights that many of these services, such as electronic indexes and abstracts and electronic journals, are not used frequently by staff. This suggests that many staff are not fully aware of the different EIS that are available to support learning, teaching and research in their subject area. Also, with many staff bypassing the Learning Centres' catalogue and going to information via search engines, they are missing out on many services that are only available via the Learning Centres' catalogue.

This suggests that awareness raising and staff development by LIS should be focussed and targeted at staff in particular schools to emphasise services and sources applicable to their subject. It also argues for closer partnership between LIS and

faculty staff in using EIS and a greater empathy with academic staff on how LIS delivers that support (e.g. prior knowledge, avoidance of jargon and timing).

Many staff feel that students do not have the requisite skill to use EIS fully even though they believe that their students need to use them. This has implications for how students develop these skills – bearing in mind large student numbers, evolving services, diverse needs, generic and contextualised skills, and different learning styles. It also raises questions about the respective roles of Learning Advisors and faculty staff in the development of these skills by students.