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Society of College,
National and University
Libraries

Information support for eLearning: principles and practice

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I Introduction

This briefing paper, developed by librarians from SCONUL (see Annex), aims to ensure that teachers, designers and administrators of eLearning courses are aware of the information support issues that arise in providing eLearning, and the ways in which libraries can help with them. An information-rich environment is as important to off-campus learners as to those on campus, though the means of providing it, and the pedagogic context in which it is delivered, may be different.

The paper outlines the responsibilities of an institution providing eLearning:

- to ensure that access to high quality information is integrated into course provision
- to equip eLearners with the information skills to exploit that information
- to provide appropriate advice and assistance to eLearners in information-searching
- to address the related communications and costing issues.

Although these responsibilities seem exacting, the academic library community has considerable expertise in off-campus delivery of information, both in exploiting its potential and problem solving. Involving your university library in course development and delivery will both lighten your load and add depth and richness to your students' learning.

We use 'eLearners' to refer to students registered for eLearning courses, even though some of the information resources they use may be printed.

2 Historical background of library and information provision for eLearning

UK university libraries have a long history of successfully providing library and information support to distance learning students. The techniques, experience and creativity exploited in meeting the needs of distance learners can now enrich the design of library and information support within eLearning.

Until the 1990s, the two main providers of distance learning programmes in the UK were the Open University and the External Programme of the University of London. Students were provided with the materials they needed to complete their course of study in published or course pack form. Some university extramural departments also provided loans using 'book boxes' delivered to remote classrooms for part-time students.

From the early 1990s, many more UK universities began offering distance programmes, particularly at postgraduate level. The adoption of quality assessment mechanisms within the sector consolidated concern for the support of distance learners. The procedures of the Quality Assurance Agency ensured that the needs of distance learners could not be given less weight than other types of learner. An increasing number of libraries developed dedicated services for distance students, such as:

- telephone renewals
- literature searches
- photocopied articles
- postal book loans
- individually negotiated reciprocal access arrangements.

However, available technologies were changing, and the internet soon emerged as an opportunity to begin fashioning the digital library. The UK Joint Information Systems Committee (JISC) was quick to begin sponsoring research. It established a large number of projects focused on the delivery of remote services under the eLib programme, which ran from 1995 to 2001. The first two phases of eLib involved 100 UK higher education institutions and disseminated knowledge of many of the issues and techniques relating to eLibrary support widely across the sector. ELib resulted

in a number of sustainable services which can be used by designers of support for eLearning. For example, HERON, www.heron.ingenta.com, offers a national service for copyright clearance and digitisation of book chapters and journal articles. Equally, the resulting knowledge base and widespread good practice within UK university libraries is an important resource available to course designers.

Building on both this research and their own, libraries began exploiting the new technologies to reinforce their existing provision: developing web sites, email support, conferencing, access to ejournals and databases, and online information skills tutorials. Such services were key components of the Open Library, www.open.ac.uk/library, developed by the Open University, and the dedicated Distance Learner Support Units established in university libraries such as Sheffield Hallam, www.shu.ac.uk/services/lc/dl/index.html, and Leicester, www.le.ac.uk/li/distance/index.htm. Wider student access to physical library space in the UK has been facilitated by UK Libraries Plus, www.uklibrariesplus.ac.uk, a reciprocal scheme which allows distance learners and part-time students from one member institution to use the library facilities of another. As an extension of this scheme, some member libraries also offer limited access to networks and electronic information resources under the UK Computing Plus initiative. See www.uklibrariesplus.ac.uk/ukcp/ for details.

The chief lesson learnt from all this experimentation is that successful provision of library and information support to eLearners is completely integrated within the eLearning curriculum and environment. It cannot easily be added once the course has been designed.

The UK university library sector is generally very well placed to support the integration of library and information provision within eLearning, and to continue the dialogue with course designers as ePedagogy develops. This is partly the legacy of its long and successful experience of supporting distance learners, and partly a consequence of its enthusiastic and cooperative adoption of new solutions provided by rapid technological development.

3 Principles

The principles on which an information service should be based are introduced in this section, and the following section describes how they may be developed into practice. These are the principles which institutions should apply to enrich the educational experience of eLearners and to ensure that courses are supported by appropriate information resources:

- Responsibility
- Quality
- Equity
- Access to information and help
- Information literacy
- Integration
- Communication
- Whole-process costing

Responsibility

Your institution has a clear responsibility to ensure that eLearning is appropriately underpinned by good quality information. This applies both to core readings, and supplementary material to broaden and deepen understanding. Involving the library service in this is as vital with off-campus work as it is with on-campus provision. Over the past decade, universities and their libraries have recognised two key factors:

- Good information support contributes significantly to the quality of the educational experience of students
- It pays dividends to involve librarians at an early stage and treat information support as an integral part of course design.

Hence, from the outset, look to foster a close partnership with your library service in the planning and validation of the course. Your institution should also make clear in marketing, publicity, and any other communication with prospective students, what they may expect in relation to library and information provision, including any financial implications for them.

Quality

The quality of library and information provision is as important to eLearners as it is to traditional on-campus students. Monitoring and evaluating library provision should be integral to the quality

assurance mechanisms set up for the course itself.

Equity

The circumstances of eLearners and/or the nature of the course may make it impossible to offer equal access to the wide range of services offered to campus-based students. However, eLearners need information provision comparable in level and richness to that offered to campus-based students. This may require imaginative and unusual solutions. You and your librarians should plan this aspect together from the initial course design stage.

Access to information and help

Timely access to a wide range of information resources and services is essential, offered in ways which match student need. The access needs of students with disabilities also have to be considered, particularly in the context of the Disability Discrimination Act 1995, and the Special Educational Needs & Disability Act 2001 (SENDA). The SCONUL briefing paper *Access for users with disabilities* (available at www.sconul.ac.uk) and the JISC's TechDis service, www.techdis.ac.uk, can advise.

Information literacy

All eLearners must be given the opportunity to develop and enhance their skills in finding and using information. This not only ensures that they can fully exploit information resources for their eLearning course, but also provides them with a life skill, and with mechanisms for updating their knowledge after the course has ended. It is important that you work with your librarians to embed information literacy training into the delivery of support for the course.

Integration

You should address how best to integrate library and information provision into the course in a flexible way, since the needs of different eLearning courses and of different students within a course will vary, depending partly on the nature of the individual course and partly on the prior knowledge and skills of the individual eLearner. Early discussions will be needed to ensure optimum integration between the delivery of course materials and information support, for example:

- technical platforms for delivery of information

- the media mix used to package the information
- the balance between physical and electronic routes to information.

Communication

Communication should underpin the relationship between you and the library on the one hand, and between both of you and the eLearner on the other. This applies at all stages:

- designing and planning a course
- marketing and student recruitment
- delivery of the course
- student progression
- quality assurance
- monitoring and evaluation.

Whole-process costing

Library provision adds value to any course and is an integral and enriching part of the student experience. It has to be costed like every other part of a course, with an emphasis on cost-effectiveness. When deciding whether a course is viable, realistic information support costs need to be taken into account and searching questions may have to be asked. If appropriate information provision for a particular course cannot be delivered without unreasonable cost to the institution and/or the individual learner, the course may not be able to go ahead.

4 Principles into practice

Responsibility

To assist course providers in ensuring an appropriate library and information service for eLearners, and in integrating such provision into course delivery, here is an initial checklist of questions:

- What information skills will eLearners need?
- What information resources will they need?
- What level of help, advice and support will they need?
- How will these services be delivered?
- How will these services be communicated?
- What are the financial implications for the eLearner?
- What are the cost implications of all aspects of library and information provision?
- Who will be responsible for each aspect?
- Will eLearners need to have access to a library close to them and how may this be arranged?

Considerable time and effort are needed to project plan, manage and co-ordinate the provision of library and information services, especially if this is your institution's first such venture. To help you focus, you need clear objectives for the place of information skills and resources in your desired learning outcomes. You also need to be sure that you can deliver them, and that what you put in place is scalable for the full eventual eLearner intake.

This paper assumes that you will work in close partnership with your institutional library to deliver information services. An alternative model is to outsource some parts of the service to external partners or commercial service providers, such as educational technologists or suppliers of content. This adds a layer of complexity to the co-ordination of the process, making careful planning, and allocation and ownership of responsibilities, even more crucial. Whichever delivery model you choose, if you are to fulfil your overall responsibilities to your students, the same issues arise as those we explore here.

Quality

You will need to work with your library to ensure that library and information services are delivered within your institutional quality assurance framework. You will particularly want to:

- assess and monitor the information needs of eLearning students
- define service levels so that course providers, library and information services, and especially eLearners, are all clear about the level of service to be provided and who will deliver it.

Equity

The library and information needs of eLearners are similar to those of campus-based students, but the ways of providing services to meet those needs may be markedly different. Your library will help you to benchmark service delivery for eLearners against that for campus-based students as part of the planning process, thus ensuring that no key service is neglected.

Access to information

eLearners need ready and timely access to a wide range of relevant information resources, whether for course-related study, wider readings or further research. You will be providing them with content in the form of printed or electronic texts, or learning objects, for course work. You will also need to provide access to additional resources, in electronic form where possible. Here is a menu of media options:

- *Books*
These may be useful as course texts, and could be posted out to eLearners. If they are to be paid for out of course fees, make sure that the costs are reasonable. A growing number of ebooks is available, and these may become an increasingly attractive solution, albeit with licensing implications. Allow plenty of planning time to investigate these options, especially if ebooks are not already embedded in your institution's provision.
- *Printed or electronic study packs*
These can be closely tailored to the course. They might consist of original content, or of journal articles or book chapters where copyright permission

must be obtained or licences negotiated and a fee paid. Bear in mind the cost, and especially the time needed, for copyright requests. The costs may make some items uneconomic, and you will need time to find alternatives. Experience shows that you need to allow at least six months for seeking copyright permissions, whether the library or some other agency is carrying out this work. Be clear as to who is responsible for each process. Consider using HERON, www.heron.ingenta.com, a national service for copyright clearance, digitisation, and delivery of book chapters and journal articles. Often, your library can recommend alternative resources which are already available, or other sources of copyright cleared materials, thus reducing the need to seek permissions or negotiate licences.

- *CDROMs or DVDs*
These are valuable because they can hold a large amount of course reading, combined with other useful information and software packages, including self-paced training applications, without incurring online costs or the problems of insufficient bandwidth. Copyright and licence fees may be payable. Again allow enough time for negotiation.
- *Multimedia*
You may wish to offer a range of multimedia enhancements to learning, such as embedded video-links, film clips, images and sound. There are licensing, copyright and cost issues, which again will take time to work through. Some multimedia can be presented on CDROM or DVD, if bandwidth is a significant issue (of which more below). Your principal partners here will be your university's media or IT services, or external suppliers, and increasingly libraries will become involved.
- *Electronic resources accessible via the web*
A vast range of electronic resources is accessible via the web, providing great opportunities for the eLearner to read beyond course materials. However, the quality of web-based information varies enormously. Work closely with your library to direct eLearners to appropriate

resources, and to teach them to evaluate resources they discover for themselves. Issues to consider in providing electronic resources include:

- *Subscriptions and licence fees.* Most commercially produced electronic resources, such as ejournals and databases, are subject to licensing restrictions. All the licences must be examined to ensure that eLearners are covered, whether within or outside the UK. Though many of the national JISC-negotiated licences already cover distance learners, some of the library's existing licences may need to be renegotiated. Allow sufficient time for checking, for any renegotiation of licences, and for any adjustments once the costs are known.
- *Network access for eLearners, capacity and bandwidth.* As a pre-requisite, eLearners must have access to the internet, but bandwidth is variable. Check whether all essential resources can be delivered via the web at acceptable bandwidth: CDROMs or DVDs may be preferable. Technical issues for which you will need specialist advice include the use of institutional firewalls, the need for proxy servers, and knowledge of how variable browser configurations and versions of software work and interact in practice. Set up small-scale pilots to test network issues, especially if multimedia material is to be used.
- *Access to and location of resources.* How the links and access routes for the eLearner will work depends on the location of the resources. For instance, econtent produced for the course, or individual articles, may be held on your library, departmental or institutional server, with access via embedded links in the course materials. Links to published resources, such as ejournals and bibliographical databases, and to collections such as image databases and virtual museums, may be provided via an institutional portal or

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gateway. A combination of provision will probably be needed. As this is a very complex area, and no two institutions will necessarily arrive at the same solution, it is especially important that you discuss it with your library during the earliest stages of course planning. All sorts of practical considerations may require you to adjust your plans.

- *Authentication.* Most electronic resources require users to be authenticated. Wherever possible, use a national authentication scheme, such as the JISC's Athens service, www.athens.ac.uk: your library and IT services will advise you. Investigate:
 - how eLearners will be handled within the registration procedures of your institution
 - how user names and passwords will be generated to provide access to library or computing facilities and services
 - how eLearners will obtain authentication for the electronic resources you wish to provide
 - how information on user names and access requirements will be communicated to them clearly and accurately.
- *Document delivery and inter-library loan services*

Most higher degree students will need to make use of document delivery services, which supply books, journal articles, conference papers etc., beyond the core readings of the course. There is usually a per item charge. Determine how much, if any, document delivery can be paid for out of course fees or overheads, or how much the eLearners themselves will be expected to cover, and how all of this can be regulated and managed. Commercial suppliers provide index or table of contents services, and documents can be ordered direct by eLearners paying online by credit card. Your university library may be willing to supply items from stock by post, but such a service is unlikely to be

scalable or sustainable, and is therefore not recommended.

- *Access to a local library and information service*

Negotiating access to a library local to individual eLearners will take time, and may require funding for fees or a reciprocal agreement. The situation will vary depending on the country and exact location of the eLearners. Within the UK, the UK Libraries Plus scheme, www.uklibrariesplus.ac.uk, provides free access and borrowing in over 130 higher education libraries for distance and part-time learners of any member institution. Overseas, the British Council, www.britishcouncil.org/education/index.htm, or a local university may be able to provide additional access to information or to help. Consider whether you can realistically negotiate access on behalf of your eLearners, or whether you can provide them with guidance as to how they might apply for access to a local library themselves.

Access to help and advice

Help and advice for eLearners in relation to their use of information should be integrated within the overall support planned for the course programme. It is unlikely that you will be able to organise direct one-to-one contact, 24x7, for these services. Instead, aim to provide the opportunities for eLearners to become self-reliant and to take responsibility for their own learning (see Information literacy below).

eLearners will still, however, need individual help and assistance at different stages of their course. Decide how you can provide support, directly or indirectly, and consider the costs, practicalities and scalability of such support. eLearners will need information and advice on:

- IT, including networking connectivity, hardware and software support
- using information resources
- alternative library and information services.

It must be clear to eLearners from whom they may obtain advice on each or all of these areas, and whether help is available in real time. IT support may be provided from your university's

IT services, and advice on using databases and other subject resources may come from the university library, during their respective office or opening hours. It may be possible to set up partnerships with other libraries in the UK or overseas to deliver support across time-zones. Alternatively, train local tutors to respond to basic library, information and IT enquiries, offering a one-stop-shop to eLearners, and then re-route more complex enquiries to specialists. Clarify expectations as to the level of support you can provide and advertise realistic response times.

Information literacy

Information literacy is an acquired set of transferable skills which are essential to the learner during the course, and also in their life, work and study afterwards. These skills include:

- knowing where to look for information
- creating efficient search strategies
- evaluating and authenticating information
- processing and managing information.

Work with your librarians and educational technologists as appropriate in order to:

- analyse what information skills eLearners will need to develop during their course
- embed appropriate training into the programme at various stages
- produce online information literacy courses, workbooks or modules, some of which should be interactive
- include an information literacy module in the foundation or introductory course
- create gateways or portals to guide eLearners to selected and validated resources
- integrate access to these services into the learning environment.

Information skills should be developed incrementally throughout the programme. A key objective is to enable and assist eLearners to become independent, self-reliant and resourceful in their location, evaluation and management of information, i.e. to become information literate. Consider supplying CDROMs or DVDs, or designing a website, to contain:

- a variety of resources and information for eLearners

- guides and handbooks to course material and the library
- licensed software packages, such as word processing, spreadsheets and databases
- a web browser
- packages of training tools.

See for example the Deakin Learning Toolkit, www.deakin.edu.au/students/it_support/dlt.html, a CDROM sent to all distance learners at Deakin University, Australia, which provides them with the means to take responsibility for their own learning support. Similarly, the Open University's web-based Learners' Guide, <http://www3.open.ac.uk/learners-guide/index.html>, incorporates advice on studying, career planning and course choice, as well as a collection of toolkits for learning skills development, including an online information literacy tutorial, SAFARI, <http://sorbus.open.ac.uk/safari/signpostframe.htm>

Integration

Just as information literacy is an integral part of the learning outcomes of the course, information resources must be integrated into course delivery. Integration of resources in or through the university's learning environment, the library website, gateway or portal, and publishers' and other external databases, is a very complex area, which should be discussed in detail with your library and IT services. eLearners need to navigate quickly and efficiently to information resources, which are located on a variety of servers around the world. Only careful planning will enable this to happen. Some issues to consider are:

- Will you wish to embed individual items of econtent, such as articles, images, sound bites and film clips, in the course materials, or will you make links to them from the course materials?
- Where will these resources reside: on an institutional or library server, with access via gateways or portals?
- How will you link to other resources, such as ejournals, ebooks, or bibliographical or image databases, some of which will be located on publishers' or aggregators' servers? Your library may already have access to software which makes use of open reference linking, which will simplify this process.

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Management and integration of resources and links is essential, to ensure that a complex and hybrid network of information resources is made as simple, logical and transparent to eLearners as possible. There is no single solution, so allow plenty of time to plan what works best in your circumstances.

Communication

Good communication underpins the relationship between eLearners and course and service providers. It is vital for managing and clarifying the expectations of eLearners, and for ensuring the effective planning and quality management of the programme. As a minimum:

- involve the library at the outset, and on a continuing basis, to identify information resources and delivery mechanisms
- include references to library and information provision in communications with eLearners
- clarify service levels with the library, for all aspects of access to information, and to help and advice, as indicated above. Communicate these clearly to eLearners.

eLearners are more likely to be satisfied with the services provided, if you make clear to them what is, and what is not, available.

Whole-process costing

Well-designed and well-managed library and information services will add value to the educational programme and to the eLearners' experience, and they must be affordable and cost-effective. Try to identify the whole, direct and indirect, capital and recurrent costs, for every step. This includes:

- the purchase or licensing of resources, and copyright fees as required
- associated staff costs of obtaining or negotiating these resources
- designing and delivering online information literacy training
- designing, managing and maintaining gateways and portals
- providing help and advice to eLearners
- specific costs related to any eLearners who wish to visit the university library in person, or fees payable to enable them to use a local library.

Consider if these costs are affordable, scalable and sustainable, and think about the balance of costs in providing a mix of printed and electronic resources for core or for further reading. Reviewing the comparative costs will help you make decisions among:

- printed or electronic books, including costs of purchase, posting or licensing
- printed or electronic study packs, including costs of photocopying, copyright clearance, or licensing
- document delivery, at a cost per item, including copyright clearance; consider the need to manage or ration supply.

While this is a daunting list of requirements, they may partially be addressed by developing services which already exist: for example, tailoring gateways or portals, re-versioning information literacy course materials, or using electronic resources which are already appropriately licensed and available through your university library. Library staff will be able to discuss options with you, and suggest a variety of ways to meet your needs.

The balance between quality of provision and affordability may be a delicate one, but eLearners have the right to expect high quality library and information services and resources. Failing them in this respect will undermine the course. The actual funding model adopted to support eLearners is ultimately less important than informing them fully about any financial implications in undertaking an eLearning course, and ensuring they are clear about what support is, and is not, provided while they are studying.

5 Conclusion

eLearning courses will embrace inherently different pedagogic methods from those used in face-to-face tuition. The benefits of integrating library and information services and support into the delivery of the course, and the value of the earliest involvement of library staff in curriculum development and programme planning are demonstrable.

Library and information services will best contribute to the richness of the eLearning experience when:

- the institution offering the course takes responsibility for ensuring that the library and information needs of its eLearners are met
- quality and assurance mechanisms assess the supporting material, including the library and information provision, as an integral part of the course provision
- access to a wide range of high-quality information and support, including flexibility of access in technical and temporal terms, is offered to the eLearner
- information literacy is developed as an integral part of the course, to transform eLearning into a rich, challenging and individual experience for the independent learner
- there is effective communication between the library and the course designer and between the provider of information services and the eLearner
- costs are properly identified in respect of library and information service provision along with all other aspects of the course
- provision is optimised by building on the institution's existing information resources and services.

Annex

The first edition of this paper was produced by the SCONUL Task Force on UKeU:

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